POULTRY PRODUCT CATALOG

Vol. 3.1

THE SCIENCE OF HEALTHIER ANIMALS.

MERCK Animal Health

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1.0 INTESTINAL HEALTH

PRODUCT BULLETIN

COCCIVAC®-B52

Coccidiosis Vaccine

(Eimeria acervulina, E. maxima, E. maxima MFP, *E. mivati, and E. tenella)*
(Live Oocysts)

For vaccination of healthy chickens at 1 day of age as an aid in the prevention of coccidiosis due to *E. mivati* and *E. tenella* and as an aid in the reduction of lesions related to *E. acervulina* and *E. maxima*.

ADVANTAGES:

Faster protection – Superior performance

- Advanced formula contains 5 strains of *Eimeria* parasites (4 species) including 2 strains of *Eimeria maxima* in one convenient product for added protection
- Patented Echo Technology* provides earlier immunity development against coccidiosis in broilers:
  - Early initial immunity
  - Later, secondary boost to extend immunity
- Time-tested, easy spray cabinet administration provides lifelong protection
- Fits into any management program – any season, any size, any system
- Manufactured using SPF birds provides increased biosecurity
- Ideal product for use in broilers raised without antibiotics

Coccivac®-B52 vaccine is a live oocysts vaccine isolated from chickens, prepared from anticoccidial-sensitive strains of *Eimeria acervulina*, *E. maxima*, *E. maxima* MFP, *E. mivati*, and *E. tenella*. Administered at 1 day of age via spray cabinet.

10 x 10,000 doses

MERCK
Animal Health

PRODUCT BULLETIN

COCCIVAC®-B52

Coccidiosis Vaccine

(Eimeria acervulina, E. maxima, E. maxima MFP*, E. mivati, and E. tenella)*
(Live Oocysts)

For Animal Use Only.

Description

This product contains live oocysts of the following species of coccidia: *E. acervulina*, (*E. maxima*, *E. maxima* MFP), *E. mivati*, and *E. tenella*.

Indications for Use

For vaccination of healthy chickens at 1 day of age by spray cabinet administration as an aid in the prevention of coccidiosis due to *E. mivati* and *E. tenella* and as an aid in the reduction of lesions related to *E. acervulina* and *E. maxima*.

Vaccination Programs

Many factors must be considered in determining the vaccination program for a particular farm or poultry operation. To be fully effective, the vaccine must be administered to healthy receptive birds held in proper environment under good management. In addition, the response may be modified by the age of the birds and their immune status. Seldom does 1 vaccination under field conditions produce complete protection for all individuals in a given flock. The amount of protection required will vary with the type of operation and the degree of exposure that a flock is likely to encounter.

Precautions

ONLY VACCINATE HEALTHY BIRDS

Consult your poultry pathologist for further recommendations based on conditions existing in your area at any given time. This product is not ordinarily recommended for use with prestarter or starter feeds containing coccidiostats. Birds must have access to their droppings as reinfection is required to induce full immunity.

Spray Cabinet Administration

FOR CHICKENS 1 DAY OF AGE

The vaccine should be prepared (or mixed) at the rate of 210 ml of distilled water per 1000 doses of vaccine. Each 100 chicks should receive 21 ml of vaccine solution (dye may be added as a marker).

Full directions for use of the spray cabinet are available from the company.

Notice

All Merck Animal Health vaccines released for sale meet U.S. and local regulatory requirements in regard to safety, purity, potency and the capacity to immunize normal susceptible birds.

Caution

DO NOT FREEZE

The capacity of this vaccine to produce satisfactory results depends on many factors including, but not limited to conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of individual animals and degree of field exposure. Therefore, directions for use should be followed carefully.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

US/CVB/0916/0001

PRODUCT BULLETIN

COCCIVAC®-D2

Coccidiosis Vaccine

(Eimeria tenella, E. mivati, E. acervulina, E. maxima, E. brunetti, E. necatrix)
(Live Oocysts)

For vaccination of healthy chickens at 1 day of age or older as an aid in the prevention of coccidiosis.

ADVANTAGES:

- Controlled dose stimulates early, mild, predictable immune response to 6 species of *Eimeria* parasites important in chicken production
- Early vaccination stimulates uniform immunity, which is not complicated by skip-a-day feeding programs
- Convenient and flexible administration methods are adapted to different management practices
- Ideal product to be used in parent stock and commercial pullets reared on cages or on the floor
- Can be used in rotation with anticoccidial products to restore sensitivity to coccidiostats
- Manufactured using SPF birds provides increased biosecurity

Coccivac®-D2 vaccine is a live oocyst vaccine prepared from anticoccidial drug-sensitive strains of *Eimeria tenella, E. mivati, E. acervulina, E. maxima, E. brunetti, and E. necatrix*. Its controlled dose may be administered to chickens via spray cabinet at 1 day of age or older or orally on the feed at 4 days of age or older to stimulate immunity.

10 x 1,000 doses
10 x 5,000 doses

MERCK
Animal Health

PRODUCT BULLETIN

COCCIVAC®-D2

Coccidiosis Vaccine

(Eimeria tenella, E. mivati, E. acervulina, E. maxima, E. brunetti, E. necatrix)
(Live Oocysts)

For Animal Use Only.

READ FULL DIRECTIONS CAREFULLY. Use entire contents when first opened. Do not vaccinate within 21 days before slaughter. Store vaccine in refrigerator 35° to 45°F (2° to 7°C). Gentamicin is added as a preservative. CAUTION: Burn containers and all unused contents.

Description

This product contains live oocysts of the following species of coccidia: *E. tenella, E. mivati, E. acervulina, E. maxima, E. brunetti,* and *E. necatrix* to aid in the prevention of coccidiosis in chickens.

Indications for Use

For vaccination of healthy chickens at 1 day of age by spray cabinet administration or at 4 days of age on the feed to aid in the prevention of coccidiosis in chickens.

Vaccination Programs

Many factors must be considered in determining the vaccination program for a particular farm or poultry operation. To be fully effective, the vaccine must be administered to healthy receptive birds held in proper environment under good management. In addition, the response may be modified by the age of the birds and their immune status. Seldom does 1 vaccination under field conditions produce complete protection for all individuals in a given flock. The amount of protection required will vary with the type of operation and the degree of exposure that a flock is likely to encounter.

Precautions

ONLY VACCINATE HEALTHY BIRDS

Consult your poultry pathologist for further recommendations based on conditions existing in your area at any given time. This product is not ordinarily recommended for use with prestarter or starter feeds containing coccidiostats. Birds must have access to their droppings as reinfection is required to induce immunity.

Caution

DO NOT FREEZE

The capacity of this vaccine to produce satisfactory results depends on many factors including, but not limited to conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of individual animals and degree of field exposure. Therefore, directions for use should be followed carefully.

Spray Cabinet Administration

FOR CHICKENS 1 DAY OF AGE

The vaccine should be prepared (or mixed) at the rate of 210 ml of distilled water per 1000 doses of vaccine. Each 100 chicks should receive 21 ml of vaccine solution. (Dye may be added as a marker.) Full directions for use of the spray cabinet are available from the company.

Feed Spray Administration

FOR CHICKENS 4 DAYS OF AGE

1. Do not use any medicated drinking water or water disinfectant 24 hours before and after vaccination or during vaccination.
2. Feed sprinkled on paper under the feed line increases the exposure of chicks to the vaccine.
3. Dilute the vaccine at a ratio of 1000 doses/400 ml of non-chlorinated water. Mix well and place in a clean garden type pressure sprayer.
4. Spray the diluted vaccine over the surface of the feed. Agitate the sprayer during administration.
5. For best results, the vaccine should be sprayed on all of the feed.
6. Avoid wetting the feed. Proper application will only dampen the surface of the feed.
7. Allow the chicks sufficient time to ingest the oocysts on the feed before placing more feed in the pans or on the paper.

Notice

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

US/CD2/0916/0004

PRODUCT BULLETIN

BRON-NEWCAVAC® SE

Newcastle - Bronchitis Vaccine

(Massachusetts Type, Killed Virus, *Salmonella Enteritidis* Bacterin)

For the vaccination of healthy chickens 10 weeks of age or older as an aid in the reduction of *Salmonella Enteritidis* (SE) phage types 4, 8 and 13a colonization of internal organs, including the reproductive tract. The vaccine also aids in the prevention of the signs and lesions associated with Newcastle disease (ND) and infectious bronchitis (IB).

ADVANTAGES:

When administered to pullets, Bron-Newcavac®SE:

- Aids in the reduction of SE, phage types 4, 8 and 13a colonization of the reproductive tract
- Aids in the reduction of SE, phage types 4, 8 and 13a colonization of internal organs
- Induces high, uniform antibodies against ND and IB in birds primed with live ND and IB vaccines throughout the entire production cycle.

Bron-Newcavac®SE is prepared from ND virus, IB virus, Massachusetts type, and SE, inactivated and suspended in the aqueous phase of an oil emulsion adjuvant. Contains ND virus, Massachusetts type IB virus and SE.

1,000 doses

MERCK Animal Health

PRODUCT BULLETIN

BRON-NEWCAVAC® SE

Newcastle - Bronchitis Vaccine

(Massachusetts Type, Killed Virus, *Salmonella Enteritidis* Bacterin)

For Animal Use Only.

Description

This vaccine is prepared from Newcastle disease virus, infectious bronchitis (IB) virus, Massachusetts type, and *Salmonella Enteritidis* (SE), inactivated and suspended in the aqueous phase of an oil adjuvant emulsion.

Indications for Use

This vaccine is indicated for the vaccination of chickens 10 weeks of age or older as an aid in the reduction of SE phage types 4, 8, & 13a colonization of internal organs, including the reproductive tract. This vaccine also aids in the prevention of the signs and lesions associated with Newcastle disease and IB. Chickens should be in good health when vaccinated. Sick or weak chickens will not develop adequate immunity. The use of any inactivated vaccine may cause false positive results on *Mycoplasma* plate tests. Avoid *Mycoplasma* testing prior to ten weeks post-vaccination.

Dosage and Administration

Allow the vaccine to reach ambient temperature, 16-27°C (60-80°F), shake well before and during use. Inject 0.5 mL subcutaneously in chickens in the back of the neck midway between the head and body in a direction away from the head using an 18-gauge needle. Do not inject into muscle tissue or neck vertebrae.

Vaccination Program

Vaccinate healthy chickens at least 10 week of age. A second vaccination is recommended a minimum of 6 weeks following initial vaccination. The best protection against Newcastle disease and IB is obtained when chickens are previously immunized with live Newcastle disease virus and IB virus vaccines.

Storage Conditions

Store in the dark in a refrigerator between 2-7°C (35-45°F). DO NOT FREEZE OR EXPOSE TO DIRECT SUNLIGHT.

Cautions

1. TO AVOID HUMAN INJECTION, EXTREME CAUTION SHOULD BE USED WHEN INJECTING ANY OIL EMULSION VACCINE. ACCIDENTAL HUMAN INJECTION MAY CAUSE SERIOUS LOCAL REACTIONS. CONTACT A PHYSICIAN IMMEDIATELY IF ACCIDENTAL HUMAN INJECTION OCCURS.
2. If it is desired to vaccinate birds during lay, a drop in egg production may occur.
3. Do not administer this vaccine during the critical egg laying period from onset until after peak production.
4. Do not use less than 1 dose per bird per vaccination.
5. Injection of inactivated vaccine into breast muscle may create processing plant problems under certain conditions.
6. Do not vaccinate chickens within 42 days before slaughter.
7. Do not mix this vaccine with any other substances.
8. Use entire contents when first opened.
9. Ensure that vaccination equipment is clean and sterile before use.
10. Do not use vaccination equipment with rubber parts, as the oil emulsion may attack certain types of rubber.
11. The use of SE vaccines may interfere with avian pullorum-typhoid testing. It is recommended that vaccination occur after testing is complete.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Intervet Inc., U.S. and local regulatory requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure. Therefore, directions should be followed carefully. This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, quantity, serial number, expiration date, place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE BETWEEN 2 AND 7°C (35 and 45°F). DO NOT FREEZE OR EXPOSE TO DIRECT SUNLIGHT.

Contact our sales or technical services representatives to help design a custom vaccination program.

US/BNS/0916/0002

MERCK Animal Health

PRODUCT BULLETIN

SE GUARD®

Salmonella Enteritidis Bacterin

For the vaccination of healthy chickens 10 weeks of age or older as an aid in the reduction of *Salmonella Enteritidis* (SE), phage types 4, 8 and 13a colonization of internal organs, including the reproductive tract.

ADVANTAGES:

When administered to pullets, SE Guard®:

- Aids in the reduction of SE, phage types 4, 8 and 13a colonization of the reproductive tract
- Aids in the reduction of SE, phage types 4, 8 and 13a colonization of internal organs

SE Guard® is prepared from *Salmonella Enteritidis*, and is inactivated and suspended in the aqueous phase of an oil emulsion adjuvant.

1 x 1,000 doses

MERCK Animal Health

PRODUCT BULLETIN

SE GUARD®

Salmonella Enteritidis Bacterin

For Animal Use Only.

Description

SE Guard® is prepared from *Salmonella Enteritidis* (SE), inactivated and suspended in the aqueous phase of an oil adjuvant emulsion.

Indications for Use

SE Guard is indicated for the vaccination of healthy chickens 10 weeks of age or older as an aid in the reduction of SE, phage types 4, 8, & 13a colonization of internal organs, including the reproductive tract.

Dosage and Administration

Before use, allow the vaccine to reach ambient temperature, 16- 27°C (60-80°F) naturally. Shake vigorously before and periodically during use. Inject 0.5 ml subcutaneously in chickens in the back of the neck midway between the head and body in a direction away from the head using an 18-gauge needle. Do not inject into muscle tissue or neck vertebrae.

Vaccination Program

Vaccinate healthy chickens at least 10 weeks of age. A second vaccination is recommended a minimum of 6 weeks following initial vaccination.

Storage Conditions

Store in the dark in a refrigerator between 2-7°C (35-45°F). DO NOT FREEZE OR EXPOSE TO DIRECT SUNLIGHT.

Cautions

1. TO AVOID HUMAN INJECTION, EXTREME CAUTION SHOULD BE USED WHEN INJECTING ANY OIL EMULSION VACCINE. ACCIDENTAL HUMAN INJECTION MAY CAUSE SERIOUS LOCAL REACTIONS. CONTACT A PHYSICIAN IMMEDIATELY IF ACCIDENTAL HUMAN INJECTION OCCURS.
2. Chickens should be in good health when vaccinated. Sick or weak chickens may not develop adequate immunity.
3. Do not administer this vaccine during the critical egg laying period from onset until after peak production. Administration of this product during the lay period may result in a drop in egg production.
4. Do not use less than 1 dose per bird per vaccination.
5. Injection of inactivated vaccine into breast muscle may create processing plant problems under certain conditions.
6. Do not vaccinate chickens within 42 days before slaughter.
7. Do not mix this vaccine with any other substances.
8. Use entire contents when first opened.
9. Do not expose this vaccine to microwave radiation, boiling water, extensive heat, or any other similar physical processes.
10. Ensure that vaccination equipment is clean and sterile before use.
11. Do not use vaccination equipment with rubber parts, as the oil emulsion may attack certain types of rubber.
12. This vaccine contains thimerosal as a preservative.
13. The use of SE vaccines may interfere with avian pullorum-typhoid testing. It is recommended that vaccination occur after testing is complete.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Intervet Inc. and USDA requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure. Therefore, directions should be followed carefully. This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, quantity, serial number, expiration date, place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE BETWEEN 2 AND 7°C (35 and 45°F). DO NOT FREEZE.

Contact our sales or technical services representatives to help design a custom vaccination program.

US/SEG/0916/0001

MERCK Animal Health

2.0 RESPIRATORY PROTECTION

PRODUCT BULLETIN

INNOVAX®-ND

Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For *in ovo* vaccination of 18 day old chicken embryos and subcutaneous vaccination of day old chickens.

ADVANTAGES:*

- Provides extended protection for virulent Newcastle disease (ND) and Marek's disease (MD)
- Aids in prevention of ND through at least 60 weeks of age
- Offers effective protection in the face of ND virus maternal antibodies
- Replaces a conventional live ND vaccination program in the absence of exotic ND
- Removes the potential for respiratory reactions due to live ND vaccines
- Allows the use of monovalent infectious bronchitis (IB) vaccines, improving IB protection
- Offers flexible administration via *in ovo* or subcutaneous injection to fit any vaccination schedule

Innovax®-ND is a frozen, live, cell-associated ND and MD vaccine. It provides proven protection against virulent ND virus and MD. It is approved for *in ovo* injection of 18 day embryonated eggs and subcutaneous vaccination of day old chickens.

2,000 dose ampules
4,000 dose ampules

*Data on file, Merck Animal Health

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US/IND/1116/0001

PRODUCT BULLETIN

INNOVAX®-ND

Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For Animal Use Only.

Description

This vaccine is a frozen, cell-associated, live virus vaccine that contains the recombinant serotype 3 turkey herpesvirus with the F gene from Newcastle disease virus. The vaccine is packaged in glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

This vaccine is recommended for vaccination of healthy 18 day old chicken embryos by the *in ovo* route or 1 day old chickens by subcutaneous injection as an aid in the prevention of Marek's disease and Newcastle disease.

Important: Storage Conditions

AMPULES - Store in liquid nitrogen container.
DILUENT - Do not freeze.
CONTAINER - Store liquid nitrogen container securely in upright position in a dry, well-ventilated area and away from incubator intakes and chicken boxes.

Safety Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions and safe practices for liquefied atmospheric gases (particularly liquid nitrogen). When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen. All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly; then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately. Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation of Vaccine

CAUTION: READ ABOVE SAFETY PRECAUTIONS ON HANDLING VACCINE AMPULE. AMPULES HAVE BEEN KNOWN TO EXPLODE ON SUDDEN TEMPERATURE CHANGES. DO NOT THAW IN HOT OR ICE COLD WATER. STERILIZE VACCINATING EQUIPMENT BY BOILING IN WATER FOR 30 MINUTES OR BY AUTOCLAVING 20 MINUTES AT 121°C (250°F). DO NOT USE CHEMICAL DISINFECTANTS.

1. Before withdrawing vaccine from liquid nitrogen canister, protect hands with gloves, wear long sleeves and use a facemask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
2. When withdrawing a cane of ampules from canister in liquid nitrogen container, expose only the ampule to be used immediately. We recommend handling only 1 ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
3. The contents of the ampule are thawed rapidly by immersing in a container of clean water at a temperature range of 20-30°C (68-86°F). Gently swirl the ampule to disperse contents. Then break ampule at its neck and immediately proceed as below.
4. Dilute the vaccine with diluent for administration. Use 100 ml sterile diluent for each 1,000 doses of vaccine to administer 0.1 ml dose per chicken embryo or use 50 ml for each 1,000 doses of vaccine to administer 0.05 ml per chicken embryo by the *in ovo* route. Use 200 ml sterile diluent for each 1,000 doses of vaccine to administer 0.2 ml dose per chicken by the subcutaneous route.
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18-gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE 16-27°C (60-80°F) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent container. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container. Remove the syringe.
8. Fill the previously sterilized egg inoculation machine or automatic syringe according to the manufacturer's recommendations.
9. The vaccine is now ready for use.

Method of Vaccination

IN OVO ADMINISTRATION:

1. Inoculate each 18 day old chicken embryo with a full dose (0.05 ml or 0.1ml).
2. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.
3. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

SUBCUTANEOUS ADMINISTRATION:

1. Hold the chicken by the back of the neck just below the head. The loose skin in the area is raised by gently pinching with the thumb and forefinger. Insert the needle beneath the skin in a downward direction away from the head. Inject 0.2 ml per chicken.
2. Avoid hitting the muscles and bones in the neck.
3. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.

Notice

This vaccine has undergone rigid potency and purity tests, and meets Merck, U.S. and local regulatory requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure. A safety data sheet (SDS) is available upon request This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Caution

Good management practices are recommended to reduce exposure to Marek's disease and Newcastle disease for at least 3 weeks following vaccination. Therefore, directions should be followed carefully.

1. Do not mix any substance with this vaccine.
2. Store vaccine in liquid nitrogen at a temperature below -150°C (-238°F).
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute or otherwise stretch the dosage of this vaccine.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chicken embryos or chickens should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains gentamicin as a preservative.
11. BURN THIS CONTAINER AND ALL UNUSED CONTENTS.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE IN LIQUID NITROGEN.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

INNOVAX®-ILT

Fowl Laryngotracheitis & Marek's Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For the vaccination of 18 day old chicken embryos by *in ovo* administration and of healthy 1 day old chickens by subcutaneous route as an aid in the prevention of Marek's disease (MD) and infectious laryngotracheitis (ILT).

ADVANTAGES:*

- Provides protection against both MD and ILT
- Aids in prevention of ILT through at least 60 weeks of age
- Offers flexibility for vaccination schedules by offering *in ovo* as well as subcutaneous administration
- Eliminates respiratory vaccination reactions caused by chickens vaccinated with live conventional ILT vaccines
- Eliminates an increase in vaccination reactions from other respiratory vaccines
- Eliminates latency, persistence, and spread caused by chickens vaccinated with live conventional ILT vaccines
- Prevents vaccine induced ILT outbreaks

Innovax®-ILT is a frozen, live, cell-associated laryngotracheitis and MD vaccine. It provides proven protection against ILT and MD. It is approved for *in ovo* administration to 18 day old chicken embryos and by subcutaneous vaccination of healthy 1 day old chickens.
Innovax-ILT contains recombinant turkey herpes virus used as a vector for the expression of 2 glyco-protein genes from laryngotracheitis virus.

2,000 dose ampules
4,000 dose ampules

*Data on file, Merck Animal Health

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US/IIL/1116/0002

PRODUCT BULLETIN

INNOVAX®-ILT

Fowl Laryngotracheitis & Marek's Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For Animal Use Only.

Description

Innovax®-ILT is a frozen, cell-associated, live virus vaccine that contains the recombinant serotype 3, turkey herpesvirus with genes from laryngotracheitis virus. The vaccine is packaged in glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

Innovax-ILT is recommended for vaccination of healthy 18 day old chicken embryos by the *in ovo* route or 1 day old chickens by subcutaneous injection as an aid in the prevention of Marek's disease and infectious laryngotracheitis. This product when administered by the subcutaneous route at one day of age aids in the prevention of infectious laryngotracheitis for at least 60 weeks.

Important: Storage Conditions

AMPULES - Store in liquid nitrogen container.
DILUENT - Do not freeze.
CONTAINER - Store liquid nitrogen container securely in upright position in a dry, well-ventilated area and away from incubator intakes and chicken boxes.

Safety Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions and safe practices for liquefied atmospheric gases (particularly liquid nitrogen). When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen. All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly; then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately. Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation of Vaccine

CAUTION: READ ABOVE SAFETY PRECAUTIONS ON HANDLING VACCINE AMPULE. AMPULES HAVE BEEN KNOWN TO EXPLODE ON SUDDEN TEMPERATURE CHANGES. DO NOT THAW IN HOT OR ICE COLD WATER. STERILIZE VACCINATING EQUIPMENT BY BOILING IN WATER FOR 30 MINUTES OR BY AUTOCLAVING 20 MINUTES AT 121°C (250°F). DO NOT USE CHEMICAL DISINFECTANTS.

1. Before withdrawing vaccine from liquid nitrogen canister, protect hands with gloves, wear long sleeves and use a facemask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
2. When withdrawing a cane of ampules from canister in liquid nitrogen container, expose only the ampule to be used immediately. We recommend handling only 1 ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
3. The contents of the ampule are thawed rapidly by immersing in a container of clean water at room temperature 20-30°C (68-86°F). Gently swirl the ampule to disperse contents. Then break ampule at its neck and immediately proceed as below.
4. Dilute the vaccine with diluent for administration. Use 100 ml sterile diluent for each 1,000 doses of vaccine to administer 0.1 ml dose per chicken embryo or use 50 ml for each 1,000 doses of vaccine to administer 0.05 ml per chicken embryo by the *in ovo* route. Use 200 ml sterile diluent for each 1,000 doses of vaccine to administer 0.2 ml dose per chicken by the subcutaneous route.
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18-gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE 16-27°C (60-80°F) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent container. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container. Remove the syringe.
8. Fill the previously sterilized egg inoculation machine or automatic syringe according to the manufacturer's recommendations.
9. The vaccine is now ready for use.

Method of Vaccination

IN OVO ADMINISTRATION:

1. Inoculate each 18 day old chicken embryo with a full dose (0.05 ml or 0.1ml).
2. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 7.
3. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

SUBCUTANEOUS ADMINISTRATION:

1. Hold the chicken by the back of the neck just below the head. The loose skin in the area is raised by gently pinching with the thumb and forefinger. Insert the needle beneath the skin in a downward direction away from the head. Inject 0.2 ml per chicken.
2. Avoid hitting the muscles and bones in the neck.
3. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 7.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Intervet Inc., U.S. and local regulatory requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure.

Caution

Good management practices are recommended to reduce exposure to Marek's disease and infectious laryngotracheitis for at least 3 weeks following vaccination. Therefore, directions should be followed carefully.

1. Do not mix any substance with this vaccine. Do not mix with other products, except as specified on this label.
2. Store vaccine in liquid nitrogen at a temperature below -150°C (-238°F).
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute or otherwise stretch the dosage of this vaccine.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chicken embryos or chickens should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains gentamicin as a preservative.
11. Inactivate unused contents before disposal.
12. In case of human exposure, contact a physician.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE IN LIQUID NITROGEN.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

INNOVAX®-ILT-SB

Fowl Laryngotracheitis - Marek's Disease

(Serotypes 2 + 3, Modified-Live and Live Marek's Disease Vector)

For vaccination of 18 day old embryos to aid in the prevention of infectious laryngotracheitis (ILT) and very virulent Marek's disease (MD).

ADVANTAGES:*

- Provides extended protection against both ILT virus and very virulent MD
- Eliminates respiratory vaccination reactions caused by chickens vaccinated with live conventional ILT vaccines
- Eliminates an increase in the vaccination reactions from other respiratory vaccines
- Eliminates latency, persistence and spread caused by chickens vaccinated with live conventional ILT vaccines
- Prevents vaccine induced ILT outbreaks

Innovax®-ILT-SB vaccine is a frozen, live, cell-associated laryngotracheitis and MD vaccine. It provides proven protection against ILT and very virulent MD. It is approved for *in ovo* injection of 18 day embryonated eggs. Innovax-ILT-SB contains a turkey herpes virus (HVT) used as a vector for the expression of the glycoprotein genes from laryngotracheitis virus. The HVT is combined with the SB-1 strain of chicken herpes virus (serotype 2).

2,000 dose ampules

*Data on file, Merck Animal Health

MERCK Animal Health

MERCK Animal Health

US/IIS/1116/0001

PRODUCT BULLETIN

INNOVAX®-ILT-SB

Fowl Laryngotracheitis & Marek's Disease

(Serotypes 2 & 3, Modified-Live and Live Marek's Disease Vector)

For Animal Use Only.

Description

Innovax® -ILT-SB is a frozen, cell-associated, live virus vaccine that contains the SB-1 strain of chicken herpesvirus serotype 2 and the recombinant serotype 3 turkey herpesvirus with genes from laryngotracheitis virus. The vaccine is packaged in glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

Innovax-ILT-SB is recommended for vaccination of healthy 18 day old chicken embryos by the *in ovo* route as an aid in the prevention of very virulent Marek's Disease and Infectious Laryngotracheitis.

Important: Storage Conditions

AMPULES - Store in liquid nitrogen container.
DILUENT - Do not freeze.
CONTAINER - Store liquid nitrogen container securely in upright position in a dry, well-ventilated area and away from incubator intakes and chicken boxes.

Vaccination Programs

Many factors must be considered in determining a sound vaccination program for a particular farm or poultry operation. To be fully effective, the vaccine must be administered to healthy, receptive birds held in proper environment under good management. In addition, the response may be modified by the age of the birds and their immune status. Seldom does 1 vaccination under field conditions produce complete protection for all individuals in a given flock. The amount of protection required will vary with the type of operation and the degree of exposure the flock is likely to encounter. For these reasons, a program of periodic revaccination may be required.

Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions and safe practices for liquefied atmospheric gases (particularly liquid nitrogen). When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen. All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly, then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately. Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation of Vaccine

CAUTION: READ ABOVE WARNING ADVICE ON HANDLING VACCINE AMPULE. AMPULES HAVE BEEN KNOWN TO EXPLODE ON SUDDEN TEMPERATURE CHANGES. DO NOT THAW IN HOT OR ICE COLD WATER. STERLIZE VACCINATING EQUIPMENT BY BOILING IN WATER FOR 30 MINUTES OR BY AUTOCLAVING (20 minutes at 250°F/121°C). DO NOT USE CHEMICAL DISINFECTANTS.

1. Before withdrawing vaccine from liquid nitrogen conister, protect hands with gloves, wear long sleeves and use a face mask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
2. When withdrawing a cane of ampules from canister in liquid nitrogen, expose only the ampule to be used immediately. We recommend handling only one ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
3. The contents of the ampule are thawed rapidly by immersing in a container of clean water at a temperature range of 68-86°F (20-30°C). Gently swirl the ampule to disperse contents. Then break ampule at its neck and immediately proceed as below.
4. Dilute the vaccine for administration. Use 100 ml sterile diluent for each 1,000 doses of vaccine to administer 0.1 ml dose per chicken embryo by the *in ovo* route.
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18-gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE (60-80°F/16-27°C) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent containter. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container. Remove the syringe.
8. Fill the previously sterilized automatic syringe or egg inoculation machine according to the manufacturer's recommendations.
9. The vaccine is now ready for use.

Method Vaccination

IN OVO ADMINISTRATION

1. Inoculate each 18 day old chicken embryo with a full dose (0.05 ml or 0.1 ml).
2. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 7.
3. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

Caution

READ FULL DIRECTIONS CAREFULLY.
GOOD MANAGEMENT PRACTICES ARE RECOMMENDED TO REDUCE EXPOSURE TO MAREK'S DISEASE AND INFECTIOUS LARYNGOTRACHEITIS FOR AT LEAST 3 WEEKS FOLLOWING VACCINATION. THEREFORE, DIRECTIONS SHOULD BE FOLLOWED CAREFULLY.

1. Do not mix any substance with this vaccine.
2. Store vaccine in liquid nitrogen at a temperature below -238°F (-150°C).
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute the vaccine or otherwise stretch the dosage.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chicken embryos should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains gentamicin as a preservative.
11. BURN THIS CONTAINER AND ALL UNUSED CONTENTS.

Notice

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, type, quantity, serial number, expiration date and place of purchase; the date and time of vaccination; the number, age, breed and location of the birds; names of operators performing the vaccination and any observed reactions.

STORE VACCINE IN LIQUID NITROGEN.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

INNOVAX®-ND-IBD

Infectious Bursal Disease - Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For *in ovo* vaccination of 18 day old chicken embryos and subcutaneous vaccination of day old chickens to provide protection against Marek's disease, Newcastle disease, standard and variant infectious bursal disease.

ADVANTAGES:*

- Provides protection for virulent ND, IBD and Marek's disease
- Offers effective protection in the face of ND virus maternal antibodies
- Replaces a conventional live ND vaccination program in the absence of exotic ND
- Removes the potential for respiratory reactions due to live ND vaccines
- No vaccine reactions observed in safety trials for improved bird performance
- Offers flexible administration via *in ovo* or subcutaneous injection to fit any vaccination schedule
- Shown to be effective against standard and variant infectious bursal disease challenge

Innovax®-ND-IBD is a frozen, live, cell-associated Marek's, ND and IBD vaccine. It provides proven protection against Marek's, virulent ND virus, and both standard and variant strains of IBD. It is approved for *in ovo* injection of 18 day embryonated eggs and subcutaneous vaccination of day old chickens.

4,000 dose ampules

*Data on file, Merck Animal Health

MERCK Animal Health

MERCK Animal Health

US-INX-201100002

PRODUCT BULLETIN

INNOVAX®-ND-IBD

Infectious Bursal Disease - Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For Animal Use Only.

Description

This vaccine is a frozen, cell associated, live virus vaccine that contains the recombinant serotype 3 turkey herpesvirus with the F gene from Newcastle disease virus and with the VP2 gene from infectious bursal disease virus. The vaccine is packaged in glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

This vaccine has been shown to be effective for the vaccination of healthy 18 day-old chicken embryos or one-day-old chickens against Marek's disease, Newcastle disease, standard and variant infectious bursal disease. Duration of immunity has not been established. For more information regarding efficacy and safety data, go to productdata.aphis.usda.gov.

Important: Storage Conditions

AMPULES - Store in liquid nitrogen container.
DILUENT - Do not freeze.
CONTAINER - Store liquid nitrogen container securely in upright position in a dry, well ventilated area and away from incubator intakes and chicken boxes.

Safety Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions and safe practices for liquefied atmospheric gases (particularly liquid nitrogen).

When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen. All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly; then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately.

Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation of Vaccine

CAUTION: READ ABOVE SAFETY PRECAUTIONS ON HANDLING VACCINE AMPULE. AMPULES HAVE BEEN KNOWN TO EXPLODE ON SUDDEN TEMPERATURE CHANGES. DO NOT THAW IN HOT OR ICE COLD WATER. STERILIZE VACCINATING EQUIPMENT BY BOILING IN WATER FOR 30 MINUTES OR BY AUTOCLAVING 20 MINUTES AT 121°C (250°F). DO NOT USE CHEMICAL DISINFECTANTS.

1. Before withdrawing vaccine from liquid nitrogen canister, protect hands with gloves, wear long sleeves and use a facemask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
2. When withdrawing a cane of ampules from canister in liquid nitrogen container, expose only the ampule to be used immediately. We recommend handling only one ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
3. The contents of the ampule are thawed rapidly by immersing in a container of clean water at a temperature range of 20-30°C (68-86°F). Gently swirl the ampule to disperse contents. Then break ampule at its neck and immediately proceed as below.
4. Dilute the vaccine for administration. Use 100 ml sterile diluent for each 1,000 doses of vaccine to administer 0.1 ml dose per chicken embryo or use 50 ml for each 1,000 doses of vaccine to administer 0.05 ml per chicken embryo by the *in ovo* route. Use 200 ml sterile diluent for each 1,000 doses of vaccine to administer 0.2 ml dose per chicken by the subcutaneous route.
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18 gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE 16-27°C (60-80°F) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent container. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container. Remove the syringe.
8. Fill the previously sterilized automatic syringe or egg inoculation machine according to the manufacturer's recommendations.
9. The vaccine is now ready for use.

Method of Vaccination

IN OVO ADMINISTRATION:

1. Inoculate each 18-day-old chicken embryo with a full dose (0.05 ml or 0.1ml).
2. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.
3. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

SUBCUTANEOUS ADMINISTRATION:

1. Hold the chicken by the back of the neck just below the head. The loose skin in the area is raised by gently pinching with the thumb and forefinger. Insert the needle beneath the skin in a downward direction away from the head. Inject 0.2 ml per chicken.
2. Avoid hitting the muscles and bones in the neck.
3. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Intervet Inc., U.S. and local regulatory requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure.

Caution

Good management practices are recommended to reduce exposure to Marek's disease and bursal disease for at least three weeks following vaccination. Therefore, directions should be followed carefully.

1. Do not mix any substance with this vaccine. Do not mix with other products, except as specified on this label.
2. Store vaccine in liquid nitrogen at a temperature below -150°C (-238°F).
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute or otherwise stretch the dosage of this vaccine.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chicken embryos or chickens should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains gentamicin as a preservative.
11. Inactivate unused contents before disposal.
12. In case of human exposure, contact a physician.
13. FOR ANIMAL USE ONLY.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE IN LIQUID NITROGEN.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

INNOVAX®-ND-ILT

Infectious Laryngotracheitis - Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For *in ovo* vaccination of 18 day old chicken embryos and subcutaneous vaccination of day old chickens to provide protection against Newcastle disease (ND), infectious laryngotracheitis and Marek's disease.

ADVANTAGES:*

- Provides protection for virulent ND, ILT and Marek's disease.
- Offers effective protection in the face of ND virus maternal antibodies
- Replaces a conventional live ND vaccination program in the absence of exotic ND
- Removes the potential for respiratory reactions due to live ND and ILT vaccines
- No vaccine reactions observed in safety trials for improved bird performance
- Offers flexible administration via *in ovo* or subcutaneous injection to fit any vaccination schedule
- Eliminates an increase in vaccine reactions from other respiratory vaccines
- Eliminates latency, persistence, and spread caused by chickens vaccinated with live conventional ILT vaccines
- Prevents vaccine induced ILT outbreaks
- Allows the use of monovalent infectious bronchitis (IB) vaccines, improving IB protection

Innovax®-ND-ILT is a frozen, live, cell-associated ND, ILT and Marek's vaccine. It provides proven protection against virulent ND virus, ILT and Marek's. It is approved for *in ovo* injection of 18 day embryonated eggs and subcutaneous vaccination of day old chickens.

2,000 dose ampules

*Data on file, Merck Animal Health

MERCK Animal Health

MERCK Animal Health

US/IND/1116/0001

PRODUCT BULLETIN

INNOVAX®-ND-ILT

Infectious Laryngotracheitis - Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For *In ovo* Vaccination of 18 Day Old Chicken Embryos and
Subcutaneous Vaccination of Day Old Chickens

Description

This vaccine is a frozen, cell associated, live virus vaccine that contains the recombinant serotype 3 turkey herpesvirus with the F gene from Newcastle disease virus and with genes from laryngotracheitis virus. The vaccine is packaged in glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

This product has been shown to be effective for the vaccination of healthy 18 day old chicken embryos or one day old chickens against Marek's disease, Newcastle disease and infectious laryngotracheitis. Duration of Immunity has not been established. For more information regarding efficacy and safety data, go to productdata.aphis.usda.gov.

Important: Storage Conditions

AMPULES: Store in liquid nitrogen container.
DILUENT: Do not freeze.
CONTAINER: Store liquid nitrogen container securely in upright position in a dry, well ventilated area and away from incubator intakes and chicken boxes.

Safety Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions and safe practices for liquefied atmospheric gases (particularly liquid nitrogen). When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen. All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly; then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately. Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation of Vaccine

CAUTION: READ ABOVE SAFETY PRECAUTIONS ON HANDLING VACCINE AMPULE. AMPULES HAVE BEEN KNOWN TO EXPLODE ON SUDDEN TEMPERATURE CHANGES. DO NOT THAW IN HOT OR ICE COLD WATER. STERILIZE VACCINATING EQUIPMENT BY BOILING IN WATER FOR 30 MINUTES OR BY AUTOCLAVING 20 MINUTES AT 121°C (250°F). DO NOT USE CHEMICAL DISINFECTANTS.

1. Before withdrawing vaccine from liquid nitrogen canister, protect hands with gloves, wear long sleeves and use a facemask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
2. When withdrawing a cane of ampules from canister in liquid nitrogen container, expose only the ampule to be used immediately. We recommend handling only one ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
3. The contents of the ampule are thawed rapidly by immersing in a container of clean water at a temperature range of 20-30°C (68-86°F). Gently swirl the ampule to disperse contents. Then break ampule at its neck and immediately proceed as below.
4. Dilute the vaccine for administration. Use 100 ml sterile diluent for each 1,000 doses of vaccine to administer 0.1 ml dose per chicken embryo or use 50 ml for each 1,000 doses of vaccine to administer 0.05 ml per chicken embryo by the *in ovo* route. Use 200 ml sterile diluent for each 1,000 doses of vaccine to administer 0.2 ml dose per chicken by the subcutaneous route.
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18 gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE 16-27°C(60-80°F) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent container. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container. Remove the syringe.
8. Fill the previously sterilized automatic syringe or egg inoculation machine according to the manufacturer's recommendations.
9. The vaccine is now ready for use.

Method of Vaccination

In ovo Administration:

1. Inoculate each 18 day old chicken embryo with a full dose (0.05 ml or 0.1ml).
2. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.
3. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

Subcutaneous Administration:

1. Hold the chicken by the back of the neck just below the head. The loose skin in the area is raised by gently pinching with the thumb and forefinger. Insert the needle beneath the skin in a downward direction away from the head. Inject 0.2 ml per chicken.
2. Avoid hitting the muscles and bones in the neck.
3. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Intervet Inc., U.S. and local regulatory requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure.

Caution

Good management practices are recommended to reduce exposure to Marek's disease and infectious laryngotracheitis for at least three weeks following vaccination. Therefore, directions should be followed carefully.

1. Do not mix any substance with this vaccine. Do not mix with other products, except as specified on this label.
2. Store vaccine in liquid nitrogen at a temperature below -150°C (-238°F).
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute or otherwise stretch the dosage of this vaccine.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chicken embryos should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains Gentamicin as a preservative.
11. Inactivate unused contents before disposal.
12. In case of human exposure, contact a physician.
13. FOR ANIMAL USE ONLY.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

Intervet Inc.
Omaha, NE 68103 USA
VLN/PCN 165A/1C91.R0
1 800 211-3573 (USA) | 1 866 683-7838 (Canada)

MERCK Animal Health

PRODUCT BULLETIN

MILDVAC®-MASS+CONN

Bronchitis Vaccine

(Mild Massachusetts and Connecticut Type, Live Virus)

For the vaccination of healthy chickens by coarse spray at 1 day of age or older or by drinking water at 2 weeks of age or older as an aid in the prevention of disease due to the Massachusetts and Connecticut type infectious bronchitis (IB) viruses.

ADVANTAGES:

- Mild reactions for minimal stress
- Reduces production losses and performance setbacks
- Two strains combined provide excellent cross protection; saves time in mixing

Mildvac®-Mass+Conn is a lyophilized vaccine for the protection of chickens against the Massachusetts and Connecticut type IB viruses.

10 x 20,000 doses

MERCK Animal Health

MERCK Animal Health

PRODUCT BULLETIN

MILDVAC®-MASS+CONN

Bronchitis Vaccine

(Mild Massachusetts and Connecticut Type, Live Virus)

For Animal Use Only.

Description

MILDVAC®-MASS+CONN is a live virus vaccine prepared from the mild Massachusetts and Connecticut types of infectious bronchitis (IB) virus. The viruses have been propagated using specific-pathogen-free (SPF) substrates.

Indications for Use

MILDVAC-MASS+CONN is for the vaccination of healthy chickens by coarse spray at 1 day of age or older or by drinking water at 2 weeks of age or older as an aid in the prevention of disease due to the Massachusetts and Connecticut types of infectious bronchitis viruses.

Vaccination Programs

Many factors must be considered in determining a sound vaccination program for a particular farm or poultry complex. To be fully effective, the vaccine must be administered properly to healthy, receptive birds maintained in a proper environment under good management. In addition, the response may be influenced by the age of the birds and their immune status. Seldom does 1 live virus vaccination under field conditions produce lifetime protection for all individuals in a given flock. The level of immunity required will vary with operational practices and the degree of exposure. Therefore a program of periodic revaccinations may be necessary.

Preparation of Vaccine

FOR DRINKING WATER OR COARSE SPRAY USE
DO NOT OPEN AND MIX THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE VACCINE IMMEDIATELY AFTER MIXING AND OPEN ONLY ENOUGH VIALS TO VACCINATE 1 HOUSE AT A TIME.

1. Tear-off the seal(s) and remove the rubber stopper(s) from the vaccine vial(s).
2. Carefully pour clean, cool, non-chlorinated water into the vaccine vial until the vial is approximately 2/3 full.
3. Insert the rubber stopper and shake vigorously until all material is dissolved.
4. The vaccine is now ready for drinking water or coarse spray use in accordance with the directions below. For best results, be sure to follow directions carefully!

Drinking Water Administration

FOR CHICKENS 2 WEEKS OF AGE OR OLDER

1. Do not use any disinfectants in the drinking water for 48 hours before vaccinating and 24 hours after vaccination.
2. Withhold the water from the chickens until they are thirsty. 1 to 2 hours is generally sufficient, but withholding periods will vary according to age of chickens and weather conditions.
3. Flush water lines thoroughly with fresh, clean water. Do not use disinfectants for cleaning waterers.
4. Mix rehydrated vaccine with clean, cool, non-chlorinated water in accordance with the following chart.

Age of Chickens	Water for 1,000 Doses	Water for 10,000 Doses
2-4 weeks	2.5 gal (9.5 liters)	25 gal (95 liters)
4-8 weeks	5 gal (19 liters)	50 gal (190 liters)
Over 8 weeks	10 gal (38 liters)	100 gal (380 liters)

5. As an aid in preserving the virus, 3.2 ounces (100 gm) of non-fat powdered milk may be added to each 10 gallons (38 liters) of water used for mixing vaccine.
6. Add the dried milk first and agitate thoroughly. Then add the rehydrated vaccine from the vial and mix thoroughly.
7. Distribute the vaccine solution, as prepared above, in the waterers provided for the chickens. Avoid placing waterers in direct sunlight.
8. Provide no other drinking water until all the vaccine-water solution has been consumed.

Coarse Spray Administration

FOR CHICKENS 1 DAY OF AGE

1. Use rehydrated vaccine as indicated for specific coarse spray vaccination machine. For example, a machine which dispenses 7 ml to a box of 100 chickens would require a volume of 70 ml of non-chlorinated water for 1,000 doses. Mix thoroughly.
2. Add the prepared vaccine solution to reservoir on the machine.
3. Prime and adjust machine as instructed in manual accompanying the specific machine.
4. Place boxes holding 100 chickens each on the conveyer belt or in machine and activate spray head.

Coarse Spray Administration

FOR CHICKENS 2 DAYS OF AGE OR OLDER

1. Add distilled water to sprayer tank according to manufacturer's directions regarding water volume.
2. Put the reconstituted vaccine in the sprayer tank and mix thoroughly.
3. Do not use any disinfectants or skim milk in sprayer.
4. Use sprayer only for administration of vaccine.
5. Spray vaccination method should be done only in houses that can be closed tightly. Close all windows, doors, ventilators, and shut off all fans while spray vaccinating.
6. Spray the vaccine directly on birds.
7. Spray chickens by walking slowly through the house.
8. Individual(s) spraying chickens should wear face mask and goggles.
9. After spraying, turn the fans back on. BE CAREFUL IN HOT WEATHER.

Caution

1. VACCINATE ONLY HEALTHY CHICKENS. Although disease may not be evident, other disease conditions may cause complications or reduce immunity.
2. All susceptible chickens on the same premises should be vaccinated at the same time.
3. The revaccination of laying hens against bronchitis may be detrimental to the flock and cannot be generally recommended. In some areas where IB is a severe continuing problem, the local pathologists are recommending revaccination of the laying hens for bronchitis at specified intervals. If used, such recommendations should be strictly followed. A delay in revaccination may result in some layers becoming susceptible to bronchitis. If these hens are exposed to the virus they can experience a disturbance in egg production.
4. Efforts should be taken to reduce stress conditions at the time of vaccination and during the reaction period.
5. Do not spill or splash the vaccine.
6. Do not dilute the vaccine or otherwise stretch the dosage.
7. Use entire contents when first opened.
8. Do not vaccinate within 21 days before slaughter.
9. Burn containers and all unused contents.

Drinking Water or Coarse Spray Use.

Contains gentamicin as a preservative.

Notice

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE BETWEEN 2 AND 7°C (35 AND 45°F).

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

MILDVAC®-ARK

Bronchitis Vaccine

(Arkansas Type, Live Virus)

For the vaccination of healthy chickens at 1 day of age or older as an aid in the prevention of Arkansas type infectious bronchitis (IB).

ADVANTAGES:

- Mild reaction; safe for use in chicks at 1 day of age
- Excellent protection against Arkansas type IB
- Monovalent vaccine can be tailored to numerous vaccination programs
- 3168 strain of Arkansas type IB selected for its low reactivity and high immunogenicity

Mildvac®-Ark is a mild-reacting lyophilized vaccine for the vaccination of chickens as an aid in the prevention of the Arkansas type IB. It is approved for spray vaccination of chickens 1 day of age or older.

10 x 10,000 doses
10 x 20,000 doses

MERCK Animal Health

PRODUCT BULLETIN

MILDVAC®-ARK

Bronchitis Vaccine

(Arkansas Type, Live Virus)

For Animal Use Only.

Description

Mildvac®-Ark a live virus vaccine is prepared from a mild Arkansas strain of Arkansas type bronchitis. The mild Arkansas infectious bronchitis (IB) strain was developed by Merck research and selected for its low reactivity and high immunogenicity. The virus has been propagated using specific-pathogen-free (SPF) substrates. The immunizing capability has also been proven by the Master Seed Immunogenicity Test.

Indications for Use

Coarse Spray – Vaccination of healthy chickens 1 day of age or older (spray) for protection as an aid in the prevention of Arkansas type bronchitis.

Vaccination Programs

Many factors must be considered in determining a sound vaccination program for a particular farm or poultry complex. To be fully effective, the vaccine must be administered properly to healthy, receptive animals maintained in a proper environment under good management. In addition, the response may be influenced by the age of the animals and their immune status. Seldom does 1 live virus vaccination under field conditions produce lifetime protection for all individuals in a given flock. The level of immunity required will vary with operational practices and the degree of exposure. Therefore, a program of periodic revaccinations may be necessary.

Preparation of Vaccine

FOR COARSE SPRAY USE. DO NOT OPEN AND MIX THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE VACCINE IMMEDIATELY AFTER MIXING.

1. Remove the tear-off seal and stopper from vial containing the dried vaccine.
2. Carefully pour clean, cool non-chlorinated tap water into the vaccine vial until the vial is approximately 2/3 full.
3. Insert the rubber stopper and shake vigorously until all material is dissolved.
4. The vaccine is now ready for coarse spray use in accordance with directions below. For best results, be sure to follow directions carefully!

Coarse Spray Vaccination

FOR CHICKENS 1 DAY OF AGE

1. Use rehydrated vaccine as indicated for specific coarse spray vaccination machine. Mix thoroughly.
2. Add the prepared vaccine solution to reservoir on the machine.
3. Prime and adjust machine as instructed in manual accompanying the specific machine.
4. Place boxes holding 100 chickens each on the conveyor belt or in machine. Activate spray head.

Coarse Spray Vaccination

FOR CHICKENS OLDER THAN 1 DAY

1. Do not use any disinfectants or skim milk in sprayer.
2. Use sprayer only for administration of vaccine.
3. Shut off all fans while spray vaccinating. Turn on fan immediately after spraying.
4. Be careful in hot weather.
5. Spray chickens by walking slowly through the house.
6. Follow the manufacturer's directions regarding water volume.
7. Use only clean, cool, deionized water.
8. Individual(s) spraying chickens should wear face mask and goggles.

Caution

1. VACCINATE ONLY HEALTHY CHICKENS. Although disease may not be evident, other disease conditions may cause complications or reduce immunity.
2. All susceptible chickens on the same premises should be vaccinated at the same time.
3. The revaccination of laying hens against bronchitis may be detrimental to the flock and cannot be generally recommended.
   In some areas where IB is a severe continuing problem the local poultry pathologists are recommending revaccination of the laying hens for bronchitis at specified intervals. If used, such recommendations should be strictly followed. A delay in revaccination may result in some layers becoming susceptible to bronchitis. If these hens are exposed to the virus they can experience a disturbance in egg production.
4. Efforts should be taken to reduce stress conditions at the time of vaccination and during the reaction period.
5. Do not spill or splash the vaccine.
6. Do not dilute the vaccine or otherwise stretch the dosage.
7. Use entire contents when first opened.
8. Do not vaccinate within 21 days before slaughter.
9. Burn containers and all unused contents.
10. This vaccine contains gentamicin as a preservative.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Merck Animal Health and USDA requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of individual chickens, and the degree of field exposure. Therefore, directions should be followed carefully! This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed and locations of chickens; name of operators performing the vaccination and any observed reactions.

STORE VACCINE BETWEEN 2 AND 7°C (35 and 45°F).

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

US/MVA/0916/0001

PRODUCT BULLETIN

MILDVAC-GA-98®

Bronchitis Vaccine

(Georgia Type, Live Virus)

For the vaccination of healthy chickens at 1 day of age or older for protection against Georgia type infectious bronchitis (IB).

ADVANTAGES:

- Mild reaction. Safe for use in chicks at 1 day of age
- Protection against Georgia type infectious bronchitis
- Cross protection against Delaware type infectious bronchitis
- Monovalent vaccine can be tailored to numerous vaccination programs
- GA-98 strain of Georgia type IB selected for its low reactivity and high immunogenicity

Mildvac-GA-98® is a mild-reacting lyophilized vaccine for the protection of chickens against the Georgia type IB. It is approved for spray vaccination of chickens 1 day of age or older.

10 x 10,000 doses

MERCK Animal Health

MERCK Animal Health

US/MVB/0916/0001

PRODUCT BULLETIN

MILDVAC-GA-98®

Bronchitis Vaccine

(Georgia Type, Live Virus)

For Animal Use Only.

Description

Mildvac-GA-98® is a live virus vaccine prepared from the Georgia type, GA-98 strain, of infectious bronchitis (IB) virus. The virus has been propagated using specific-pathogen-free (SPF) substrates.

Indications for Use

Mildvac-GA-98 is indicated for the vaccination of healthy chickens 1 day of age or older as an aid in the prevention of infection due to the Georgia type IB virus by coarse spray administration. The most satisfactory vaccination schedule may vary from one area to another, depending on incidence of disease, parental antibodies, and other management considerations.

Vaccination Programs

Many factors must be considered in determining a sound vaccination program for a particular farm or poultry complex. To be fully effective, the vaccine must be administered properly to healthy, receptive birds maintained in a proper environment under good management. In addition, the response may be influenced by the age of the birds and their immune status. Seldom does 1 live virus vaccination under field conditions produce lifetime protection for all individuals in a given flock. The level of immunity required will vary with operational practices and the degree of exposure. Therefore, a program of periodic revaccination may be necessary.

Preparation of Vaccine

FOR COARSE SPRAY APPLICATION. DO NOT OPEN AND MIX THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE THE VACCINE IMMEDIATELY AFTER MIXING AND OPEN ONLY ENOUGH VIALS TO VACCINATE 1 HOUSE AT A TIME.

1. Tear off the aluminum seal(s) and carefully remove the rubber stopper(s) from the vaccine vial(s).
2. Carefully pour cool, non-chlorinated water into the vaccine vial until the vial is approximately 3/4 full.
3. Insert the rubber stopper and shake vigorously until all material is dissolved.
4. The vaccine is now ready for coarse spray application in accordance with the directions below.

Coarse Spray Administration

FOR CHICKENS 1 DAY OF AGE

1. Use rehydrated vaccine as indicated for specific coarse spray vaccination machine. For example, a machine that dispenses 7 ml to a box of 100 chickens would require a volume to 70 ml of non-chlorinated water for 1,000 doses. Mix thoroughly.
2. Add the prepared vaccine solution to reservoir on the machine.
3. Prime and adjust machine as instructed in manual accompanying the specific machine.
4. Place boxes holding 100 chickens on the conveyor belt or in machine and activate spray head.

Coarse Spray Administration

FOR CHICKENS OLDER THAN 1 DAY

1. Add distilled water to sprayer tank according to manufacturer's directions regarding water volume.
2. Put the reconstituted vaccine in the sprayer tank and mix thoroughly.
3. Do not use any disinfectants or skim milk in sprayer.
4. Use sprayer only for administration of vaccine.
5. Spray vaccination method should be done only in houses that can be closed tightly. Close all windows, doors, ventilators, and shut off all fans while spray vaccinating.
6. Spray the vaccine directly on birds.
7. Spray chickens by walking slowly through the house.
8. Individual(s) spraying chickens should wear face mask and goggles.
9. After spraying, turn the fans back on. BE CAREFUL IN HOT WEATHER.

Caution

1. VACCINATE ONLY HEALTHY CHICKENS. Although disease may not be evident, other disease conditions may cause complications or reduce immunity.
2. All susceptible chickens on the same premises should be vaccinated on the same day.
3. The revaccination of laying hens against bronchitis may be detrimental to the flock and cannot be generally recommended. In some areas where (IB) is a severe continuing problem, the local poultry pathologists are recommending revaccination of the laying hens for bronchitis at specified intervals. If used, such recommendations should be strictly followed. A delay in revaccination may result in some layers becoming susceptible to bronchitis. If these hens are exposed to the virus they can experience a disturbance in egg production.
4. Efforts should be taken to reduce stress conditions at the time of vaccination and during the reaction period.
5. Do not spill or splash the vaccine.
6. Do not dilute the vaccine or otherwise stretch the dosage.
7. Use entire contents when first opened.
8. Do not vaccinate within 21 days before slaughter.
9. Burn containers and all unused contents.
10. This vaccine contains gentamicin as a preservative.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Merck Animal Health and USDA requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure. Therefore, directions should be followed carefully. This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed and location of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE BETWEEN 2° AND 7°C (35° AND 45°F).

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

MILDVAC-Ma5™

Bronchitis Vaccine

(Massachusetts Type, Live Virus)

For the vaccination of healthy chickens 1 day of age or older by coarse spray administration or 2 weeks of age or older by drinking water administration as an aid in the prevention of disease due to Massachusetts type bronchitis virus.

ADVANTAGES:

- Mild reactions for minimal stress
- Administered at 1 day of age or older
- Key component of Protectotype™ strategy providing:
  - Cross-reacting antibodies
  - Wide coverage across multiple strains

Mildvac-Ma5™ is a live vaccine for the protection of chickens against Massachusetts type bronchitis and is a key component of the Protectotype strategy.

Product Code
10 x 10,000 doses

MERCK Animal Health

MERCK Animal Health

US/MV5/1116/0001

PRODUCT BULLETIN

MILDVAC-Ma5™

Bronchitis Vaccine

(Massachusetts Type, Live Virus)

For Animal Use Only.

Description

This live virus vaccine is prepared from the cloned Ma5 strain of Massachusetts type bronchitis. The Ma5 infectious bronchitis strain was developed by Merck's research and selected for its low reactivity and high immunogenicity. The virus has been propagated using SPF substrates. The immunizing capability has also been proven by Master Seed Immunogenicity Test.

Indications for Use

This vaccine is recommended for the vaccination of healthy chickens 1 day of age or older by coarse spray administration or 2 weeks of age or older by drinking water administration as an aid in the prevention of disease due to Massachusetts type bronchitis virus.

Vaccination Programs

Many factors must be considered in determining a sound vaccination program for a particular farm or poultry complex. To be fully effective, the vaccine must be administered properly to healthy, receptive birds maintained in a proper environment under good management. In addition, the response may be influenced by the age of the birds and their immune status. Seldom does 1 live virus vaccination under field conditions produce lifetime protection for all individuals in a given flock. The level of immunity required will vary with operational practices and the degree of exposure. Therefore, a program of periodic revaccinations may be necessary.

Preparation of Vaccine

FOR DRINKING WATER OR COARSE SPRAY USE

DO NOT OPEN AND MIX THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE VACCINE IMMEDIATELY AFTER MIXING.

1. Remove the tear-off seal and stopper from the vial containing the lyophilized vaccine.
2. Carefully pour clean, cool, non-chlorinated tap water into the vaccine vial until the vial is approximately 2/3 full.
3. Insert the rubber stopper and shake vigorously until all material is dissolved.
4. The vaccine is now ready for drinking water or coarse spray use in accordance with the directions below. For best results, be sure to follow directions carefully!

Drinking Water Administration

FOR CHICKENS 2 WEEKS OF AGE OR OLDER

1. Do not use any disinfectants in the drinking water for 48 hours before vaccinating and 24 hours after vaccination.
2. Withhold the water from the chickens until they are thirsty. Withholding periods will vary from 2 to 8 hours according to age of chickens and weather conditions.
3. Scrub waterers and rinse thoroughly with fresh, clean water. Do not use disinfectants for cleaning waterers.
4. Mix rehydrated vaccine with clean, cool, non-chlorinated tap water in accordance with the following chart:

Water Per 1,000 Doses Vaccine

Age of Chickens	Liters	U.S. Gallons
2-4 weeks	23	6
4-8 weeks	38	10
8 weeks or older	60	16

As an aid in preserving the virus, 100 g (3.2 oz.) of non-fat powdered milk may be added to each 38 liters (10 U.S. gal. gal.) of water used for mixing vaccine. Add the dried milk first and agitate thoroughly. Then add the rehydrated vaccine from the vial and mix thoroughly.

5. Distribute the vaccine solution, as prepared above, in the waterers provided for the chickens. Avoid placing waterers in direct sunlight.
6. Provide no other drinking water until all the vaccine-water solution has been consumed.

Coarse Spray Vaccination

FOR CHICKENS 1 DAY OF AGE

1. Use rehydrated vaccine as indicated for specific coarse spray vaccination machine. For example, a machine which dispenses 20 ml to a box of 100 chickens; - total volume for 2,000 doses in 400 ml, and 10,000 doses is 2,000 ml of deionized water. Mix thoroughly.
2. Add the vaccine solution to reservoir on the machine.
3. Prime and adjust machine as instructed in manual accompanying the specific machine.
4. Place boxes holding 100 chickens each on the conveyor belt or in machine. Activate spray head.

Coarse Spray Vaccination

FOR CHICKENS 2 DAYS OF AGE OR OLDER

1. Do not use any disinfectants or skim milk in sprayer.
2. Use sprayer only for administration of vaccines.
3. Shut off all fans while spray vaccinating. Turn on fan immediately after spraying. Be careful in hot weather.
4. Spray chickens by walking slowly through the house.
5. Follow the manufacturer's directions regarding water volume.
6. Use only clean, cool, deionized water.
7. Individual(s) spraying chickens should wear face mask and goggles.

Caution

1. VACCINATE ONLY HEALTHY CHICKENS. Although disease may not be evident, coccidiosis, *Mycoplasma* infection, infectious bursal disease, Marek's disease, reovirus infection and other disease conditions may cause complications or reduce immunity.
2. All susceptible chickens on the same premises should be vaccinated at the same time.
3. The revaccination of laying hens with live bronchitis vaccine may be detrimental to the flock and cannot be generally recommended. Consult your Merck Animal Health representative for more information.
4. Efforts should be taken to reduce stress conditions at the time of vaccination and during the post-vaccination period.
5. Do not spill or splash the vaccine.
6. Do not dilute the vaccine or otherwise stretch the dosage.
7. Use entire contents when first opened.
8. Do not vaccinate within 21 days before slaughter.
9. Burn containers and all unused contents.
10. This vaccine contains gentamicin as a preservative.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Intervet Inc., U.S. and local requirements. It is designed to stimulate effective immunity when used as directed. The user must be advised that the response to the vaccine depends on many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure. Therefore, directions should be followed carefully!
This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE BETWEEN 2 AND 7°C (35 AND 45°F).

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

NEWHATCH-C2®

Newcastle Disease Vaccine

(B_1 Type, C2 Strain, Live Virus)

For the vaccination of healthy chickens at 1 day of age or older by coarse spray for protection against Newcastle disease (ND).

ADVANTAGES:

- Effective against field challenge of ND virus
- C2 strain of B_1 type ND minimizes reaction to 1 day of age respiratory vaccination in broiler chicks
- Newhatch-C2® eliminates problems with lingering hatchery reaction prior to field boost
- Safe to use for hatchery application

Newhatch-C2® contains the patented, virtually non-reactive C2 strain of B_1 type ND virus. It is a lyophilized vaccine approved for spray vaccination of chickens 1 day of age or older for protection against ND.

10 x 10,000 doses

MERCK Animal Health

PRODUCT BULLETIN

NEWHATCH-C2®

Newcastle Disease Vaccine

(B_1 Type, C2 Strain, Live Virus)

For Animal Use Only.

Description

NEWHATCH-C2® is a live virus vaccine prepared from a B_1 type, C2 strain of Newcastle disease virus. The virus has been propagated using specific-pathogen-free (SPF) substrates.

Indications for Use

The vaccine is recommended for vaccination of healthy chickens, 1 day of age or older for protection against Newcastle disease by coarse spray administration.

Vaccination Programs

Many factors must be considered in determining a sound vaccination program for a particular farm or poultry complex. To be fully effective, the vaccine must be administered properly to healthy, receptive chickens maintained in a proper environment under good management. In addition, the response may be influenced by the age of the chickens and their immune status. Seldom does 1 live virus vaccination under field conditions produce lifetime protection for all individuals in a given flock. The level of immunity required will vary with operational practices and the degree of exposure. Therefore, a program of periodic revaccinations may be necessary.

Preparation of Vaccine

FOR COARSE SPRAY

DO NOT OPEN AND MIX THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE VACCINE IMMEDIATELY AFTER MIXING.

1. Remove the tear-off seal and stopper from the vial containing the dried vaccine.
2. Carefully pour clean, cool, deionized water into the vaccine vial until the vial is approximately 2/3 full.
3. Insert the rubber stopper and shake vigorously until all material is dissolved.
4. The vaccine is now ready for coarse spray use in accordance with the following directions. For best results, be sure to follow directions carefully!

Coarse Spray Administration

FOR CHICKENS 1 DAY OF AGE

1. Use rehydrated vaccine as indicated for specific coarse spray vaccination machine. For example, a machine which dispenses 20 ml to a box of 100 chickens – total volume for 10,000 doses is 2,000 ml of deionized water. Mix thoroughly.
2. Add the prepared vaccine solution to reservoir on the machine.
3. Prime and adjust machine as instructed in manual accompanying the specific machine.
4. Place boxes holding 100 chickens each on the conveyor belt or in machine. Activate spray head.

Caution

1. VACCINATE ONLY HEALTHY CHICKENS. Although disease may not be evident, coccidiosis, *Mycoplasma* infection, infectious bursal disease, chicken infectious anemia, reovirus infection, Marek's disease and other disease conditions may cause complications or reduce immunity.
2. All susceptible chickens on the same premises should be vaccinated at the same time.
3. The revaccination of laying hens with live Newcastle vaccine may be detrimental to the flock and cannot be generally recommended. This caution applies to all live Newcastle vaccines currently available. Consult your Merck representative for more information.
4. Efforts should be taken to reduce stress conditions at the time of vaccination and during the reaction period.
5. Do not spill or splash the vaccine.
6. Do not dilute the vaccine or otherwise stretch the dosage.
7. Use entire contents when first opened.
8. Do not vaccinate within 21 days before slaughter.
9. Burn containers and all unused contents.
10. Avoid exposure of this vaccine to sunlight.
11. Do not use less than 1 dose per bird.
12. This vaccine contains gentamicin as a preservative.
13. WARNING: Newcastle virus occasionally causes conjunctivitis in humans. Avoid any contact of vaccine with eyes.

Notice

This vaccine has undergone rigid potency, safety and purity tests and meets Merck Animal Health and USDA requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of individual chickens and the degree of field exposure. Therefore, directions should be followed carefully.

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, quantity, serial number, expiration date and place of purchase; the date and time of vaccination; the number, age, breed and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE BETWEEN 2 AND 7°C (35 and 45°F).

Contact our sales or technical services representatives to help design a custom vaccination program.

US/NC2/0916/0001

MERCK Animal Health

PRODUCT BULLETIN

INNOVAX®-ND

Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For *in ovo* vaccination of 18 day old chicken embryos and subcutaneous vaccination of day old chickens.

ADVANTAGES:*

- Provides extended protection for virulent Newcastle disease (ND) and Marek's disease (MD)
- Aids in prevention of ND through at least 60 weeks of age
- Offers effective protection in the face of ND virus maternal antibodies
- Replaces a conventional live ND vaccination program in the absence of exotic ND
- Removes the potential for respiratory reactions due to live ND vaccines
- Allows the use of monovalent infectious bronchitis (IB) vaccines, improving IB protection
- Offers flexible administration via *in ovo* or subcutaneous injection to fit any vaccination schedule

Innovax®-ND is a frozen, live, cell-associated ND and MD vaccine. It provides proven protection against virulent ND virus and MD. It is approved for *in ovo* injection of 18 day embryonated eggs and subcutaneous vaccination of day old chickens.

2,000 dose ampules
4,000 dose ampules

*Data on file, Merck Animal Health

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MERCK Animal Health

US/IND/1116/0001

PRODUCT BULLETIN

INNOVAX®-ND

Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For Animal Use Only.

Description

This vaccine is a frozen, cell-associated, live virus vaccine that contains the recombinant serotype 3 turkey herpesvirus with the F gene from Newcastle disease virus. The vaccine is packaged in glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

This vaccine is recommended for vaccination of healthy 18 day old chicken embryos by the *in ovo* route or 1 day old chickens by subcutaneous injection as an aid in the prevention of Marek's disease and Newcastle disease.

Important: Storage Conditions

AMPULES - Store in liquid nitrogen container.
DILUENT - Do not freeze.
CONTAINER - Store liquid nitrogen container securely in upright position in a dry, well-ventilated area and away from incubator intakes and chicken boxes.

Safety Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions and safe practices for liquefied atmospheric gases (particularly liquid nitrogen). When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen. All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly; then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately. Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation of Vaccine

CAUTION: READ ABOVE SAFETY PRECAUTIONS ON HANDLING VACCINE AMPULE. AMPULES HAVE BEEN KNOWN TO EXPLODE ON SUDDEN TEMPERATURE CHANGES. DO NOT THAW IN HOT OR ICE COLD WATER. STERILIZE VACCINATING EQUIPMENT BY BOILING IN WATER FOR 30 MINUTES OR BY AUTOCLAVING 20 MINUTES AT 121°C (250°F). DO NOT USE CHEMICAL DISINFECTANTS.

1. Before withdrawing vaccine from liquid nitrogen canister, protect hands with gloves, wear long sleeves and use a facemask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
2. When withdrawing a cane of ampules from canister in liquid nitrogen container, expose only the ampule to be used immediately. We recommend handling only 1 ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
3. The contents of the ampule are thawed rapidly by immersing in a container of clean water at a temperature range of 20-30°C (68-86°F). Gently swirl the ampule to disperse contents. Then break ampule at its neck and immediately proceed as below.
4. Dilute the vaccine with diluent for administration. Use 100 ml sterile diluent for each 1,000 doses of vaccine to administer 0.1 ml dose per chicken embryo or use 50 ml for each 1,000 doses of vaccine to administer 0.05 ml per chicken embryo by the *in ovo* route. Use 200 ml sterile diluent for each 1,000 doses of vaccine to administer 0.2 ml dose per chicken by the subcutaneous route.
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18-gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE 16-27°C (60-80°F) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent container. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container. Remove the syringe.
8. Fill the previously sterilized egg inoculation machine or automatic syringe according to the manufacturer's recommendations.
9. The vaccine is now ready for use.

Method of Vaccination

IN OVO ADMINISTRATION:

1. Inoculate each 18 day old chicken embryo with a full dose (0.05 ml or 0.1ml).
2. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.
3. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

SUBCUTANEOUS ADMINISTRATION:

1. Hold the chicken by the back of the neck just below the head. The loose skin in the area is raised by gently pinching with the thumb and forefinger. Insert the needle beneath the skin in a downward direction away from the head. Inject 0.2 ml per chicken.
2. Avoid hitting the muscles and bones in the neck.
3. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.

Notice

This vaccine has undergone rigid potency and purity tests, and meets Merck, U.S. and local regulatory requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure. A safety data sheet (SDS) is available upon request This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Caution

Good management practices are recommended to reduce exposure to Marek's disease and Newcastle disease for at least 3 weeks following vaccination. Therefore, directions should be followed carefully.

1. Do not mix any substance with this vaccine.
2. Store vaccine in liquid nitrogen at a temperature below -150°C (-238°F).
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute or otherwise stretch the dosage of this vaccine.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chicken embryos or chickens should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains gentamicin as a preservative.
11. BURN THIS CONTAINER AND ALL UNUSED CONTENTS.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE IN LIQUID NITROGEN.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

INNOVAX®-ND-IBD

Infectious Bursal Disease - Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For *in ovo* vaccination of 18 day old chicken embryos and subcutaneous vaccination of day old chickens to provide protection against Marek's disease, Newcastle disease, standard and variant infectious bursal disease.

ADVANTAGES:*

- Provides protection for virulent ND, IBD and Marek's disease
- Offers effective protection in the face of ND virus maternal antibodies
- Replaces a conventional live ND vaccination program in the absence of exotic ND
- Removes the potential for respiratory reactions due to live ND vaccines
- No vaccine reactions observed in safety trials for improved bird performance
- Offers flexible administration via *in ovo* or subcutaneous injection to fit any vaccination schedule
- Shown to be effective against standard and variant infectious bursal disease challenge

Innovax®-ND-IBD is a frozen, live, cell-associated Marek's, ND and IBD vaccine. It provides proven protection against Marek's, virulent ND virus, and both standard and variant strains of IBD. It is approved for *in ovo* injection of 18 day embryonated eggs and subcutaneous vaccination of day old chickens.

4,000 dose ampules

*Data on file, Merck Animal Health

MERCK Animal Health

MERCK Animal Health

US-INX-201100002

PRODUCT BULLETIN

INNOVAX®-ND-IBD

Infectious Bursal Disease - Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For Animal Use Only.

Description

This vaccine is a frozen, cell associated, live virus vaccine that contains the recombinant serotype 3 turkey herpesvirus with the F gene from Newcastle disease virus and with the VP2 gene from infectious bursal disease virus. The vaccine is packaged in glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

This vaccine has been shown to be effective for the vaccination of healthy 18 day-old chicken embryos or one-day-old chickens against Marek's disease, Newcastle disease, standard and variant infectious bursal disease. Duration of immunity has not been established. For more information regarding efficacy and safety data, go to productdata.aphis.usda.gov.

Important: Storage Conditions

AMPULES - Store in liquid nitrogen container.
DILUENT - Do not freeze.
CONTAINER - Store liquid nitrogen container securely in upright position in a dry, well ventilated area and away from incubator intakes and chicken boxes.

Safety Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions and safe practices for liquefied atmospheric gases (particularly liquid nitrogen).

When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen. All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly; then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately.

Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation of Vaccine

CAUTION: READ ABOVE SAFETY PRECAUTIONS ON HANDLING VACCINE AMPULE. AMPULES HAVE BEEN KNOWN TO EXPLODE ON SUDDEN TEMPERATURE CHANGES. DO NOT THAW IN HOT OR ICE COLD WATER. STERILIZE VACCINATING EQUIPMENT BY BOILING IN WATER FOR 30 MINUTES OR BY AUTOCLAVING 20 MINUTES AT 121°C (250°F). DO NOT USE CHEMICAL DISINFECTANTS.

1. Before withdrawing vaccine from liquid nitrogen canister, protect hands with gloves, wear long sleeves and use a facemask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
2. When withdrawing a cane of ampules from canister in liquid nitrogen container, expose only the ampule to be used immediately. We recommend handling only one ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
3. The contents of the ampule are thawed rapidly by immersing in a container of clean water at a temperature range of 20-30°C (68-86°F). Gently swirl the ampule to disperse contents. Then break ampule at its neck and immediately proceed as below.
4. Dilute the vaccine for administration. Use 100 ml sterile diluent for each 1,000 doses of vaccine to administer 0.1 ml dose per chicken embryo or use 50 ml for each 1,000 doses of vaccine to administer 0.05 ml per chicken embryo by the *in ovo* route. Use 200 ml sterile diluent for each 1,000 doses of vaccine to administer 0.2 ml dose per chicken by the subcutaneous route.
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18 gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE 16-27°C (60-80°F) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent container. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container. Remove the syringe.
8. Fill the previously sterilized automatic syringe or egg inoculation machine according to the manufacturer's recommendations.
9. The vaccine is now ready for use.

Method of Vaccination

IN OVO ADMINISTRATION:

1. Inoculate each 18-day-old chicken embryo with a full dose (0.05 ml or 0.1ml).
2. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.
3. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

SUBCUTANEOUS ADMINISTRATION:

1. Hold the chicken by the back of the neck just below the head. The loose skin in the area is raised by gently pinching with the thumb and forefinger. Insert the needle beneath the skin in a downward direction away from the head. Inject 0.2 ml per chicken.
2. Avoid hitting the muscles and bones in the neck.
3. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Intervet Inc., U.S. and local regulatory requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure.

Caution

Good management practices are recommended to reduce exposure to Marek's disease and bursal disease for at least three weeks following vaccination. Therefore, directions should be followed carefully.

1. Do not mix any substance with this vaccine. Do not mix with other products, except as specified on this label.
2. Store vaccine in liquid nitrogen at a temperature below -150°C (-238°F).
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute or otherwise stretch the dosage of this vaccine.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chicken embryos or chickens should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains gentamicin as a preservative.
11. Inactivate unused contents before disposal.
12. In case of human exposure, contact a physician.
13. FOR ANIMAL USE ONLY.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE IN LIQUID NITROGEN.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

INNOVAX®-ND-ILT

Infectious Laryngotracheitis - Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For *in ovo* vaccination of 18 day old chicken embryos and subcutaneous vaccination of day old chickens to provide protection against Newcastle disease (ND), infectious laryngotracheitis and Marek's disease.

ADVANTAGES:*

- Provides protection for virulent ND, ILT and Marek's disease.
- Offers effective protection in the face of ND virus maternal antibodies
- Replaces a conventional live ND vaccination program in the absence of exotic ND
- Removes the potential for respiratory reactions due to live ND and ILT vaccines
- No vaccine reactions observed in safety trials for improved bird performance
- Offers flexible administration via *in ovo* or subcutaneous injection to fit any vaccination schedule
- Eliminates an increase in vaccine reactions from other respiratory vaccines
- Eliminates latency, persistence, and spread caused by chickens vaccinated with live conventional ILT vaccines
- Prevents vaccine induced ILT outbreaks
- Allows the use of monovalent infectious bronchitis (IB) vaccines, improving IB protection

Innovax®-ND-ILT is a frozen, live, cell-associated ND, ILT and Marek's vaccine. It provides proven protection against virulent ND virus, ILT and Marek's. It is approved for *in ovo* injection of 18 day embryonated eggs and subcutaneous vaccination of day old chickens.

2,000 dose ampules

*Data on file, Merck Animal Health

MERCK Animal Health

MERCK Animal Health

US/IND/1116/0001

PRODUCT BULLETIN

INNOVAX®-ND-ILT

Infectious Laryngotracheitis - Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For *In ovo* Vaccination of 18 Day Old Chicken Embryos and
Subcutaneous Vaccination of Day Old Chickens

Description

This vaccine is a frozen, cell associated, live virus vaccine that contains the recombinant serotype 3 turkey herpesvirus with the F gene from Newcastle disease virus and with genes from laryngotracheitis virus. The vaccine is packaged in glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

This product has been shown to be effective for the vaccination of healthy 18 day old chicken embryos or one day old chickens against Marek's disease, Newcastle disease and infectious laryngotracheitis. Duration of Immunity has not been established. For more information regarding efficacy and safety data, go to productdata.aphis.usda.gov.

Important: Storage Conditions

AMPULES: Store in liquid nitrogen container.
DILUENT: Do not freeze.
CONTAINER: Store liquid nitrogen container securely in upright position in a dry, well ventilated area and away from incubator intakes and chicken boxes.

Safety Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions and safe practices for liquefied atmospheric gases (particularly liquid nitrogen). When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen. All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly; then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately. Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation of Vaccine

CAUTION: READ ABOVE SAFETY PRECAUTIONS ON HANDLING VACCINE AMPULE. AMPULES HAVE BEEN KNOWN TO EXPLODE ON SUDDEN TEMPERATURE CHANGES. DO NOT THAW IN HOT OR ICE COLD WATER. STERILIZE VACCINATING EQUIPMENT BY BOILING IN WATER FOR 30 MINUTES OR BY AUTOCLAVING 20 MINUTES AT 121°C (250°F). DO NOT USE CHEMICAL DISINFECTANTS.

1. Before withdrawing vaccine from liquid nitrogen canister, protect hands with gloves, wear long sleeves and use a facemask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
2. When withdrawing a cane of ampules from canister in liquid nitrogen container, expose only the ampule to be used immediately. We recommend handling only one ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
3. The contents of the ampule are thawed rapidly by immersing in a container of clean water at a temperature range of 20-30°C (68-86°F). Gently swirl the ampule to disperse contents. Then break ampule at its neck and immediately proceed as below.
4. Dilute the vaccine for administration. Use 100 ml sterile diluent for each 1,000 doses of vaccine to administer 0.1 ml dose per chicken embryo or use 50 ml for each 1,000 doses of vaccine to administer 0.05 ml per chicken embryo by the *in ovo* route. Use 200 ml sterile diluent for each 1,000 doses of vaccine to administer 0.2 ml dose per chicken by the subcutaneous route.
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18 gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE 16-27°C(60-80°F) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent container. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container. Remove the syringe.
8. Fill the previously sterilized automatic syringe or egg inoculation machine according to the manufacturer's recommendations.
9. The vaccine is now ready for use.

Method of Vaccination

In ovo Administration:

1. Inoculate each 18 day old chicken embryo with a full dose (0.05 ml or 0.1ml).
2. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.
3. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

Subcutaneous Administration:

1. Hold the chicken by the back of the neck just below the head. The loose skin in the area is raised by gently pinching with the thumb and forefinger. Insert the needle beneath the skin in a downward direction away from the head. Inject 0.2 ml per chicken.
2. Avoid hitting the muscles and bones in the neck.
3. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Intervet Inc., U.S. and local regulatory requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure.

Caution

Good management practices are recommended to reduce exposure to Marek's disease and infectious laryngotracheitis for at least three weeks following vaccination. Therefore, directions should be followed carefully.

1. Do not mix any substance with this vaccine. Do not mix with other products, except as specified on this label.
2. Store vaccine in liquid nitrogen at a temperature below -150°C (-238°F).
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute or otherwise stretch the dosage of this vaccine.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chicken embryos should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains Gentamicin as a preservative.
11. Inactivate unused contents before disposal.
12. In case of human exposure, contact a physician.
13. FOR ANIMAL USE ONLY.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

Intervet Inc.
Omaha, NE 68103 USA
VLN/PCN 165A/1C91.R0
1 800 211-3573 (USA) | 1 866 683-7838 (Canada)

MERCK Animal Health

PRODUCT BULLETIN

NEWHATCH-C2-M®

Newcastle – Bronchitis Vaccine

(B_1 Type, C2 Strain, Massachusetts Type, Live Virus)

For the vaccination of healthy chickens at 1 day of age or older by coarse spray for protection against Newcastle disease (ND) and Massachusetts type infectious bronchitis (IB).

ADVANTAGES:

- Effective protection against ND and Massachusetts type IB in broilers
- C2 strain of B_1 type ND virus minimizes respiratory reaction to 1 day of age vaccination in broiler chicks
- Newhatch-C2-M® eliminates problems with lingering hatchery reaction prior to field boost
- Safe to use for hatchery application

Newhatch-C2-M® combines the patented, virtually non-reactive C2 strain of B_1 ND virus with the IB protection provided by mild Massachusetts strain IB. It is a lyophilized vaccine approved for spray vaccination of chickens 1 day of age or older for protection against ND and Massachusetts type IB disease.

10 x 10,000 doses

MERCK Animal Health

PRODUCT BULLETIN

NEWHATCH-C2-M®

Newcastle - Bronchitis Vaccine

(B_1 Type, C2 Strain, Massachusetts Type, Live Virus)

For Animal Use Only.

Description

Newhatch-C2-M® is a live virus vaccine prepared from a B_1 type, C2 strain of Newcastle disease virus and a mild Massachusetts strain of infectious bronchitis (IB) virus. The viruses have been propagated using specific-pathogen-free (SPF) substrates.

Indications for Use

The vaccine is recommended for vaccination of healthy chickens, 1 day of age or older for protection against Newcastle disease and Massachusetts type IB disease by coarse spray administration.

Vaccination Programs

Many factors must be considered in determining a sound vaccination program for a particular farm or poultry complex. To be fully effective, the vaccine must be administered properly to healthy, receptive chickens maintained in a proper environment under good management. In addition, the response may be influenced by the age of the chickens and their immune status. Seldom does 1 live virus vaccination under field conditions produce lifetime protection for all individuals in a given flock. The level of immunity required will vary with operational practices and the degree of exposure. Therefore, a program of periodic revaccinations may be necessary.

Preparation of Vaccine

FOR COARSE SPRAY

DO NOT OPEN AND MIX THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE VACCINE IMMEDIATELY AFTER MIXING.

1. Remove the tear-off seal and stopper from the vial containing the dried vaccine.
2. Carefully pour clean, cool, deionized water into the vaccine vial until the vial is approximately 2/3 full.
3. Insert the rubber stopper and shake vigorously until all material is dissolved.
4. The vaccine is now ready for coarse spray use in accordance with the following directions. For best results, be sure to follow directions carefully!

Coarse Spray Administration

FOR CHICKENS 1 DAY OF AGE

1. Use rehydrated vaccine as indicated for specific coarse spray vaccination machine. For example, a machine which dispenses 20 ml to a box of 100 chickens – total volume for 10,000 doses is 2,000 ml of deionized water. Mix thoroughly.
2. Add the prepared vaccine solution to reservoir on the machine.
3. Prime and adjust machine as instructed in manual accompanying the specific machine.
4. Place boxes holding 100 chickens each on the conveyor belt or in machine. Activate spray head.

Caution

1. VACCINATE ONLY HEALTHY CHICKENS. Although disease may not be evident, coccidiosis, *Mycoplasma* infection, infectious bursal disease, chicken infectious anemia, reovirus infection, Marek's disease and other disease conditions may cause complications or reduce immunity.
2. All susceptible chickens on the same premises should be vaccinated at the same time.
3. The revaccination of laying hens with live Newcastle/bronchitis vaccine may be detrimental to the flock and cannot be generally recommended. This caution applies to all live Newcastle/bronchitis vaccines currently available. Consult your Merck representative for more information.
4. Efforts should be taken to reduce stress conditions at the time of vaccination and during the reaction period.
5. Do not spill or splash the vaccine.
6. Do not dilute the vaccine or otherwise stretch the dosage.
7. Use entire contents when first opened.
8. Do not vaccinate within 21 days before slaughter.
9. Burn containers and all unused contents.
10. Avoid exposure of this vaccine to sunlight.
11. Do not use less than 1 dose per bird.
12. This vaccine contains gentamicin as a preservative.
13. WARNING: Newcastle virus occasionally causes conjunctivitis in humans. Avoid any contact of vaccine with eyes.

Notice

This vaccine has undergone rigid potency, safety and purity tests and meets Merck Animal Health and USDA requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of individual chickens and the degree of field exposure. Therefore, directions should be followed carefully.

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, quantity, serial number, expiration date and place of purchase; the date and time of vaccination; the number, age, breed and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE BETWEEN 2° AND 7°C (35° and 45°F).

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

US/NCM/0916/0001

PRODUCT BULLETIN

NEWHATCH-C2-MC®

Newcastle – Bronchitis Vaccine

(B_1 Type, C2 Strain, Massachusetts and Connecticut Types, Live Virus)

For the vaccination of healthy chickens at 1 day of age or older by coarse spray for protection against Newcastle disease (ND) and Massachusetts and Connecticut types infectious bronchitis (IB).

ADVANTAGES:

- C2 strain of B_1 type ND minimizes reaction to 1 day of age respiratory vaccination in broiler chicks
- Newhatch-C2-MC® eliminates problems with lingering hatchery reaction prior to field boost
- Safe to use for hatchery application

Newhatch-C2-MC® combines the patented, virtually nonreactive C2 strain of B_1 type ND virus with IB protection provided by mild Massachusetts and Connecticut types of IB. It is a lyophilized vaccine approved for spray vaccination of chickens 1 day of age or older for protection against Newcastle disease and Massachusetts and Connecticut types IB disease.

10 x 10,000 doses

MERCK Animal Health

PRODUCT BULLETIN

NEWHATCH-C2-MC®

Newcastle - Bronchitis Vaccine

(B_1 Type, C2 Strain, Massachusetts and Connecticut Types, Live Virus)

For Animal Use Only.

Description

Newhatch-C2-MC®, a live virus vaccine, is prepared from a B_1 type, C2 strain of Newcastle disease virus and the mild Massachusetts and Connecticut types of infectious bronchitis (IB) virus. The viruses have been propagated using specific-pathogen-free (SPF) substrates.

Indications for Use

The vaccine is recommended for vaccination of healthy chickens, 1 day of age or older for protection against Newcastle disease and Massachusetts and Connecticut types of IB disease by coarse spray administration.

Vaccination Programs

Many factors must be considered in determining a sound vaccination program for a particular farm or poultry complex. To be fully effective, the vaccine must be administered properly to healthy, receptive chickens maintained in a proper environment under good management. In addition, the response may be influenced by the age of the chickens and their immune status. Seldom does 1 live virus vaccination under field conditions produce lifetime protection for all individuals in a given flock. The level of immunity required will vary with operational practices and the degree of exposure. Therefore, a program of periodic revaccinations may be necessary.

Preparation of Vaccine

FOR COARSE SPRAY

DO NOT OPEN AND MIX THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE VACCINE IMMEDIATELY AFTER MIXING.

1. Remove the tear-off seal and stopper from the vial containing the dried vaccine.
2. Carefully pour clean, cool, deionized water into the vaccine vial until the vial is approximately 2/3 full.
3. Insert the rubber stopper and shake vigorously until all material is dissolved.
4. The vaccine is now ready for coarse spray use in accordance with the following directions. For best results, be sure to follow directions carefully!

Coarse Spray Administration

FOR CHICKENS 1 DAY OF AGE

1. Use rehydrated vaccine as indicated for specific coarse spray vaccination machine. For example, a machine which dispenses 20 ml to a box of 100 chickens – total volume for 10,000 doses is 2,000 ml of deionized water. Mix thoroughly.
2. Add the prepared vaccine solution to reservoir on the machine.
3. Prime and adjust machine as instructed in manual accompanying the specific machine.
4. Place boxes holding 100 chickens each on the conveyor belt or in machine. Activate spray head.

Caution

1. VACCINATE ONLY HEALTHY CHICKENS. Although disease may not be evident, coccidiosis, *Mycoplasma* infection, infectious bursal disease, chicken infectious anemia, reovirus infection, Marek's disease and other disease conditions may cause complications or reduce immunity.
2. All susceptible chickens on the same premises should be vaccinated at the same time.
3. The revaccination of laying hens with live Newcastle/bronchitis vaccine may be detrimental to the flock and cannot be generally recommended. This caution applies to all live Newcastle/bronchitis vaccines currently available. Consult your Merck representative for more information.
4. Efforts should be taken to reduce stress conditions at the time of vaccination and during the reaction period.
5. Do not spill or splash the vaccine.
6. Do not dilute the vaccine or otherwise stretch the dosage.
7. Use entire contents when first opened.
8. Do not vaccinate within 21 days before slaughter.
9. Burn containers and all unused contents.
10. Avoid exposure of this vaccine to sunlight.
11. Do not use less than 1 dose per bird.
12. This vaccine contains gentamicin as a preservative.
13. WARNING: Newcastle virus occasionally causes conjunctivitis in humans. Avoid any contact of vaccine with eyes.

Notice

This vaccine has undergone rigid potency, safety and purity tests and meets Merck Animal Health and USDA requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of individual chickens and the degree of field exposure. Therefore, directions should be followed carefully.

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, quantity, serial number, expiration date and place of purchase; the date and time of vaccination; the number, age, breed and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE BETWEEN 2° AND 7°C (35° and 45°F).

Contact our sales or technical services representatives to help design a custom vaccination program.

US/NCC/0916/0001

MERCK Animal Health

PRODUCT BULLETIN

TRIPLEVAC®

Newcastle – Bronchitis Vaccine

(B_1 Type, B_1 Strain, Massachusetts and Connecticut Types, Live Virus)

For the vaccination of chickens at 1 day of age or older by coarse spray for protection against Newcastle disease (ND) and Massachusetts and Connecticut types infectious bronchitis (IB).

ADVANTAGES:

- Safe to use for hatchery application
- Mild reaction
- Highly immunogenic protection against ND and broad-spectrum protection against IB
- Excellent immunity when used as a field boost

Triplevac® combines a highly immunogenic B_1 type, B_1 strain of ND virus with the well-established IB protection provided by the mild Massachusetts and Connecticut types IB virus. It is a lyophilized vaccine approved for spray at 1 day of age or older or drinking water vaccination at 2 weeks of age or older in chickens for protection against ND and Massachusetts and Connecticut types IB.

10 x 25,000 doses

MERCK Animal Health

MERCK Animal Health

US-TRP-210300001

PRODUCT BULLETIN

TRIPLEVAC®

Newcastle - Bronchitis Vaccine

(B_1 Type, B_1 Strain, Massachusetts and Connecticut Types, Live Virus)

For Animal Use Only.

Description

This vaccine is prepared from the proven B1 strain of Newcastle disease virus and the mild Massachusetts and Connecticut types of infectious bronchitis virus. The viruses have been propageted using SPF embryonated eggs.

Indications for Use

This product has been shown to be effective for the vaccination of healthy chickens 1 day of age or 2 weeks of age or older against Newcastle disease and infectious bronchitis, Massachusetts and Connecticut types. Duration of immunity has not been established. For more information regarding efficacy and safety data, go to productdata.aphis.usda.gov.

Vaccination Programs

Many factors must be considered in determining a sound vaccination program for a particular farm or poultry complex. To be fully effective, the vaccine must be administered properly to healthy, receptive birds maintained in a proper environment under good management. In addition, the response may be influenced by the age of the birds and their immune status. Seldom does one live virus vaccination under field conditions produce lifetime protection for all individuals in a given flock. The level of immunity required will vary with operational practices and the degree of exposure. Therefore, a program of periodic revaccinations may be necessary.

Preparation of Vaccine

FOR DRINKING WATER OR COARSE SPRAY USE
DO NOT OPEN AND MIX THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE VACCINE IMMEDIATELY AFTER MIXING.

1. Remove the tear-off seal and stopper from the vial containing the lyophilized vaccine.
2. Carefully pour clean, cool, non-chlorinated water into the vaccine vial until the vial is approximately two-thirds full.
3. Insert the rubber stopper and shake vigorously until all material is dissolved.
4. The vaccine is now ready for drinking water or coarse spray use in accordance with the directions below. For best results, be sure to follow directions carefully!

Drinking Water Administration

FOR CHICKENS TWO WEEKS OF AGE OR OLDER

1. Do not use any disinfectants in the drinking water for 48 hours before vaccinating and 24 hours after vaccination.
2. Withhold the water from the chickens until they are thirsty. Withholding periods will vary from 2 to 8 hours according to age of chickens and weather conditions.
3. Scrub waterers and rinse thoroughly with fresh, clean water. Do not use disinfectants for cleaning waterers.
4. Mix rehydrated vaccine with clean, cool, non-chlorinated tap water in accordance with the chart below.

(Water Per 1000 doses Vaccine)

Age of Chickens	Liters	U.S. Gallons
2 - 4 Weeks	23	6
4 - 8 Weeks	38	10
8 Weeks or Older	60	16

5. As an aid in preserving the virus, 100 g (3.2 oz.)of non-fat powdered milk may be added to each 38 liters (10 U.S. gal.) of water used for mixing vaccine. Add the dried milk first and agitate thoroughly. Then add the rehydrated vaccine from the vial and mix thoroughly.
6. Distribute the vaccine solution, as prepared above, in the waterers provided for the chickens. Avoid placing waterers in direct sunlight.
7. Provide no other drinking water until all the vaccine-water solution has been consumed.

Coarse Spray Administration

FOR CHICKENS ONE DAY OF AGE

1. Use rehydrated vaccine as indicated for specific coarse spray vaccination machine. For example, a machine which dispenses 20 ml to a box of 100 chickens; - total volume for 2,000 doses in 400 ml, and 10,000 doses is 2,000 ml of deionized water. Mix thoroughly.
2. Mix vaccine with clean non-chlorinated water and add the vaccine solution to reservoir on the machine.
3. Prime and adjust machine as instructed in manual accompanying the specific machine.
4. Place boxes holding 100 chickens each on the conveyor belt or in machine. Activate spray head.

Coarse Spray Administration

FOR CHICKENS TWO DAYS OF AGE OR OLDER

1. Initial spray vaccination should be coarse spray.
2. Do not use any disinfectants or skim milk in sprayer.
3. Use sprayer only for administration of vaccines.
4. Shut off all fans while spray vaccinating. Turn on fan immediately after spraying. Be careful in hot weather.
5. Spray chickens by walking slowly through the house.
6. Follow the manufacturer's directions regarding water volume.
7. Mix vaccine with clean non-chlorinated water.
8. Individual(s) spraying chickens should wear face mask and goggles.

Caution

1. VACCINATE ONLY HEALTHY CHICKENS. Although disease may not be evident, coccidiosis, *Mycoplasma* infection, infectious bursal disease, Marek's disease, reovirus infection and other disease conditions may cause complications or reduce immunity.
2. All susceptible chickens on the same premises should be vaccinated at the same time.
3. The revaccination of laying hens with live Newcastle/Bronchitis vaccine may be detrimental to the flock and cannot be generally recommended. Consult your Merck Animal Health representative for more information.
4. Efforts should be taken to reduce stress conditions at the time of vaccination and during the post-vaccination period.
5. Do not spill or splash the vaccine.
6. Do not dilute the vaccine or otherwise stretch the dosage.
7. Store at 2° to 8°C (35° to 46°F).
8. Use entire contents when first opened.
9. Do not vaccinate within 21 days before slaughter.
10. Inactivate unused contents before disposal.
11. Do not mix with other products, except as specified on this label.
12. In case of human exposure, contact a physician.
13. This vaccine contains gentamicin as a preservative.
14. WARNING: Newcastle virus occasionally causes conjunctivitis in humans. Avoid any contact
15. FOR ANIMAL USE ONLY.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Merck Animal Health, U.S. and local regulatory requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens and the degree of field exposure. Therefore, directions should be followed carefully.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

TRIVAC-ARK®

Newcastle – Bronchitis Vaccine

(B_1 Type, B_1 Strain, Massachusetts and Arkansas Types, Live Virus)

For the vaccination of healthy chickens at 1 day of age or older for protection against Newcastle disease (ND) and Massachusetts and Arkansas types of infectious bronchitis (IB).

ADVANTAGES:

- Safe to use for hatchery application
- Mild reaction
- Highly immunogenic protection against ND and broad-spectrum protection against IB
- Provides cross protection against all Arkansas type of IB viruses
- Excellent immunity when used as a field boost

Trivac-Ark® combines a highly immunogenic B_1 strain of ND virus with the IB protection provided by mild Massachusetts and Arkansas types of IB virus.

It is a lyophilized vaccine approved for coarse spray vaccination of chickens 1 day of age or older for protection against ND and Massachusetts and Arkansas types of IB.

10 x 25,000 doses

MERCK Animal Health

PRODUCT BULLETIN

TRIVAC-ARK®

Newcastle - Bronchitis Vaccine

(B_1 Type, B_1 Strain, Massachusetts and Arkansas Types, Live Virus)

For Animal Use Only.

Description

This vaccine is prepared from a B_1 strain of Newcastle disease virus and the mild Massachusetts and mild Arkansas types of infectious bronchitis virus. The viruses have been propagated using specific-pathogen-free (SPF) substrates.

Indications for Use

COARSE SPRAY – Vaccination of healthy chickens 1 day of age or older for protection against Newcastle disease and Massachusetts and Arkansas types bronchitis. If chickens are vaccinated earlier than 2 weeks of age, revaccination is recommended for optimum protection.

Vaccination Programs

Many factors must be considered in determining a sound vaccination program for a particular farm or poultry complex. To be fully effective, the vaccine must be administered properly to healthy, receptive birds maintained in a proper environment under good management. In addition, the response may be influenced by the age of the birds and their immune status. Seldom does 1 live virus vaccination under field conditions produce lifetime protection for all individuals in a given flock. The level of immunity required will vary with operational practices and the degree of exposure. Therefore a program of periodic revaccinations may be necessary.

Preparation of Vaccine

FOR COARSE SPRAY USE

DO NOT OPEN AND MIX THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE VACCINE IMMEDIATELY AFTER MIXING.

1. Remove the tear-off seal and stopper from vial containing the dried vaccine.
2. Carefully pour clean, cool, deionized water into the vaccine vial until the vial is approximately 2/3 full.
3. Insert the rubber stopper and shake vigorously until all material is dissolved.
4. The vaccine is now ready for coarse spray use in accordance with directions below. For best results, be sure to follow directions carefully!

Coarse Spray Administration

FOR CHICKENS 1 DAY OF AGE

1. Use rehydrated vaccine as indicated for specific coarse spray vaccination machine. For example, a machine which dispenses 20 ml to a box of 100 chickens; total volume for 2,000 doses is 400 ml, and 10,000 doses is 2,000 ml of deionized water. Mix thoroughly.
2. Add the vaccine solution to reservoir on the machine.
3. Prime and adjust machine as instructed in manual accompanying the specific machine.
4. Place boxes holding 100 chickens each on the conveyor belt or in machine. Activate spray head.

FOR CHICKENS 2 DAYS OF AGE OR OLDER

1. Initial spray vaccination should be coarse spray.
2. Do not use any disinfectants or skim milk in sprayer.
3. Use sprayer only for administration of vaccine.
4. Shut off all fans while spray vaccinating. Turn on fan immediately after spraying. Be careful in hot weather.
5. Spray chickens by walking slowly through the house.
6. Follow the manufacturer's directions regarding water volume.
7. Use only clean, cool, deionized water.
8. Individual(s) spraying chickens should wear face mask and goggles.

Caution

1. VACCINATE ONLY HEALTHY CHICKENS. Although disease may not be evident, coccidiosis, *Mycoplasma* infection, infectious bursal disease, chicken infectious anemia, Marek's disease, reovirus infection and other disease conditions may cause complications or reduce immunity.
2. All susceptible chickens on the same premises should be vaccinated at the same time.
3. The revaccination of laying hens with live Newcastle/bronchitis vaccine may be detrimental to the flock and cannot be generally recommended. Consult your Merck representative for more information.
4. Efforts should be taken to reduce stress conditions at the time of vaccination and during the reaction period.
5. Do not spill or splash the vaccine.
6. Do not dilute the vaccine or otherwise stretch the dosage.
7. Use entire contents when first opened.
8. Do not vaccinate within 21 days before slaughter.
9. Burn containers and all unused contents.
10. This vaccine contains gentamicin as a preservative.
11. WARNING: Newcastle virus occasionally causes conjunctivitis in humans. Avoid any contact of vaccine with eyes.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Merck Animal Health and USDA requirements and is designed to stimulate effective immunity when used as directed. The user must be advised that the response to the vaccine depends on many factors, including but not limited to conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure. Therefore, directions should be followed carefully!

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, quantity, serial number, expiration date and place of purchase; the date and time of vaccination, the number, age, breed and location of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE BETWEEN 2 AND 7°C (35 AND 45°F).

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

US/TRV/0916/0001

PRODUCT BULLETIN

COMBOVAC-30®

Newcastle – Bronchitis Vaccine

(B_1 Type, LaSota Strain, Massachusetts and Connecticut Types, Live Virus)

For the vaccination of chickens at 2 weeks of age or older for protection against Newcastle disease (ND) and Massachusetts and Connecticut types infectious bronchitis (IB).

ADVANTAGES:

- Excellent immunogenicity against a wide range of ND and IB isolates
- Milder reaction than other LaSota ND Massachusetts and Connecticut type IB vaccines
- Safe for use as a field boost to revaccinate broilers
- Long-lasting protection against both ND and IB challenge

Combovac-30® combines the unique, Clone 30 strain of ND virus with the highly immunogenic Massachusetts type IB virus (Connaught strain) and the Connecticut type IB virus. It is a lyophilized vaccine approved for spray or drinking water vaccination of chickens 2 weeks of age or older for protection against ND and Massachusetts and Connecticut types IB.

10 x 2,000 doses
10x 10,000 doses

MERCK Animal Health

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US/CMB/0916/0001

PRODUCT BULLETIN

COMBOVAC-30®

Newcastle - Bronchitis Vaccine

(B_1 Type, LaSota Strain, Massachusetts and Connecticut Types, Live Virus)

For Animal Use Only.

Description

This live virus vaccine is prepared from the proven Clone 30 strain of Newcastle disease (ND) virus and the regular Massachusetts and Connecticut bronchitis viruses. The viruses have been propagated using specifc-pathogen-free (SPF) substrates. Merck Animal Health's research team cloned several lentogenic ND virus strains from separate possible subpopulations within these strains. These clones were then extensively tested for immunogenicity and reactivity. One clone, designated ND Virus Clone 30, was selected and proven to be of the same order of reactivity as the classical Hitchner B_1, but provided considerably better protection.

Indications for Use

COARSE SPRAY OR DRINKING WATER – Vaccination of healthy chickens 2 weeks of age or older for protection against Newcastle disease and Massachusetts and Connecticut types of bronchitis. Initial vaccination should be by coarse spray, drinking water.

Vaccination Programs

Many factors must be considered in determining a sound vaccination program for a particular farm or poultry complex. To be fully effective, the vaccine must be administered properly to healthy, receptive birds maintained in a proper environment under good management. In addition, the response may be influenced by the age of the birds and their immune status. Seldom does 1 live virus vaccination under field conditions produce lifetime protection for all individuals in a given flock. The level of immunity required will vary with operational practices and the degree of exposure. Therefore, a program of periodic revaccinations may be necessary.

Preparation of Vaccine

DO NOT OPEN AND MIX THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE VACCINE IMMEDIATELY AFTER MIXING.

1. Remove the tear-off seal and stopper from the vial of vaccine.
2. Carefully pour clean, cool, non-chlorinated water into the vaccine vial until the vial is approximately 2/3 full.
3. Insert the rubber stopper and shake vigorously until all material is dissolved.
4. Pour the rehydrated vaccine into a container in preparation for drinking water or coarse spray use.
5. For best results, be sure to follow directions carefully!

Drinking Water Administration

FOR CHICKENS 2 WEEKS OF AGE OR OLDER

1. Do not use any disinfectants in the drinking water 48 hours before vaccinating and 24 hours after vaccination.
2. Withhold drinking water from the chickens until they are thirsty. Withholding periods will vary from 2 to 8 hours according to age of chickens and weather conditions.
3. Scrub waterers and rinse thoroughly with fresh, clean water. Do not use disinfectants for cleaning waterers.
4. Mix rehydrated vaccine with clean, cool, non-chlorinated tap water in accordance with the chart below.

Age of Chickens	Water Per 1000 Doses Vaccine
2 - 4 Weeks	6 gal. (23 liters)
4 - 8 Weeks	10 gal. (38 liters)
8 Weeks or Older	16 gal. (60 liters)

As an aid in preserving the virus, 3.2 ounces (100 gm) of non-fat powdered milk may be added to each 10 U.S. gallons (38 liters) of water used for mixing vaccine. Add the dried milk first and agitate thoroughly. Then add the rehydrated vaccine from the vial and mix thoroughly.

5. Distribute the vaccine solution, as prepared above, to the waterers provided for the chickens. Avoid placing waterers in direct sunlight.
6. Provide no other drinking water until all the vaccine-water solution has been consumed.

Coarse Spray Vaccination

FOR CHICKENS 2 WEEKS OF AGE OR OLDER

1. Initial spray vaccination should be by coarse spray.
2. Do not use any disinfectants or skim milk in sprayer.
3. Use sprayer only for administration of vaccines.
4. Shut off all fans while spray vaccinating. Turn on fan immediately after spraying. Be careful in hot weather.
5. Spray chickens by walking slowly through the house.
6. Follow the recommendation of the manufacturer of the sprayer regarding water volume.
7. Use only clean, cool, deionized water.
8. Individual(s) spraying chickens should wear face mask and goggles.

Caution

1. VACCINATE ONLY HEALTHY CHICKENS. Although disease may not be evident, coccidiosis, *Mycoplasma* infection, infectious bursal disease, Marek's disease reovirus infection and other disease conditions may cause complications or reduce immunity.
2. All susceptible chickens on the same premises should be vaccinated at the same time.
3. The revaccination of laying hens with live Newcastle/bronchitis vaccine may be detrimental to the flock and cannot be generally recommended. Consult your Merck Animal Health representative for more information.
4. Efforts should be taken to reduce stress conditions at the time of vaccination and during the reaction period.
5. Do not spill or splash the vaccine.
6. Do not dilute the vaccine or otherwise stretch the dosage.
7. Use entire contents when first opened.
8. Do not vaccinate within 21 days before slaughter.
9. Burn containers and all unused contents.
10. This vaccine contains gentamicin as a preservative.
11. WARNING: Newcastle virus occasionally causes conjunctivitis in humans. Avoid any contact of vaccine with eyes.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Merck Animal Health and USDA requirements and is designed to stimulate effective immunity when used as directed. The user must be advised that the response to the vaccine depends upon many factors, including but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens and the degree of field exposure. Therefore, directions should be followed carefully. This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, quantity, serial number, expiration date and place of purchase; the date and time of vaccination; the number, age, breed and location of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE BETWEEN 2 AND 7°C (35 and 45°F).

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

LT-IVAX®

Fowl Laryngotracheitis Vaccine

(Modified-Live Virus, Chicken Tissue Culture Origin)

For vaccination of chickens 4 weeks of age or older as an aid in preventing infectious laryngotracheitis.

ADVANTAGES:

- Solid and uniform protection against infectious laryngotracheitis when administered via eye-drop
- Safe – more attenuated than CEO vaccines, has not been associated with vaccine induced outbreaks
- Has been shown to not spread from bird to bird in challenge-based contact controlled studies

LT-Ivax® vaccine is a live virus vaccine containing a carefully selected infectious laryngotracheitis virus strain modified by passage in tissue culture. This vaccine contains a very mild attenuated virus. For use in chickens 4 weeks of age or older, as an aid in preventing infectious laryngotracheitis through immunization by the eye-drop method.

10 x 1,000 doses

MERCK Animal Health

PRODUCT BULLETIN

LT-IVAX®

Fowl Laryngotracheitis Vaccine

(Modified-Live Virus, Chicken Tissue Culture Origin)

For Animal Use Only.

Description

LT-Ivax® vaccine is a live virus vaccine of chicken tissue culture origin containing a carefully selected fowl laryngotracheitis virus strain modified by passage in tissue culture. Because of the highly modified character of this vaccine, it does not offer the same degree of protection usually obtained from more virulent products. This vaccine contains a very mild attenuated virus and there is no danger of seeding down the premises with laryngotracheitis virus which can spread and cause the disease. For use in chickens 4 weeks of age or older, as an aid in preventing fowl laryngotracheitis through vaccination by the eye-drop method, according to the following schedule.

When to Vaccinate

INITIAL VACCINATION – 4 weeks of age
REVACCINATION – 10 weeks of age or older

Vaccination Programs

The development of a durable, strong protection depends upon the use of an effective vaccination program as well as many circumstances such as administration techniques, environment and flock health at time of vaccination. Also, the immune response to 1 vaccination under field conditions is seldom complete for all animals within a given flock. Even when vaccination is successful, the protection stimulated in individual animals against different diseases may not be lifelong.

If necessary, the vaccine may be used to aid in limiting the spread of an outbreak; however, only birds not yet infected with the virulent outbreak virus can be protected.

Examination of birds for vaccination "takes" is unnecessary and so- called "takes" are not to be expected. As with all live virus vaccines, a mild transitory reaction may occur in a small portion of the flock, and with LT-IVAX this is generally limited to a mild, localized eye reaction of short duration.

Contraindications

The application of Newcastle disease or bronchitis vaccine, either singly or in combination should be avoided for a 3 day period prior to and for 3 days after the application of LT-Ivax.

Preparation of Vaccine

1. Do not open and mix the vaccine until ready for use.
2. Mix only 1 vial at a time and use entire contents within 2 hours.
3. Remove the tear-off aluminum seal and stopper from vial containing the dried vaccine.
4. Remove the tear-off aluminum seal and stopper from the bottle containing the diluent. Insert long end of adapter into diluent bottle.
5. Hold the diluent bottle firmly in an upright position and insert the vaccine vial on the adapter of the diluent bottle. The neck of the vaccine vial should snap into position and should be seated securely on the adapter on the diluent bottle.
6. Invert the 2 containers so that the vaccine vial is on the bottom and allow the diluent to flow into the vaccine vial. If the diluent does not flow freely, squeeze the diluent bottle gently and the diluent will flow into the vaccine vial. The vaccine vial should be completely filled with diluent to prevent excess foaming.
7. Hold the joined containers by the ends; shake vigorously until the vaccine plug is completely dissolved.
8. Return the joined containers to their original position (diluent bottle on the bottom). Allow the vaccine to flow into the diluent bottle. If the vaccine does not flow into the diluent bottle, tap or squeeze the diluent bottle gently and release to draw the vaccine into the diluent bottle. Be sure all the product is removed from the vaccine vial.
9. Remove the vaccine vial and adapter from the neck of the diluent bottle and insert dropper applicator into plastic diluent bottle.
10. The vaccine is now ready to use.
11. Wash hands thoroughly after mixing the vaccine.

How to Vaccinate

Vaccination for LT by the eye-drop method is conducted by allowing 1 full drop of rehydrated vaccine to fall into the open eye of the bird and hold until the bird swallows. Hold dropper bottle in vertical position throughout vaccination to avoid wasting vaccine.

Caution

1. Vaccinate only healthy birds. Although disease may not be evident, coccidiosis, chronic respiratory disease, *Mycoplasma* infection, lymphoid leukosis, infectious bursal disease, Marek's disease, or other disease conditions may cause serious complications or reduce protection.
2. An eye reaction may be noticed if birds are incubating coryza or other infectious organisms, or if there is excess ammonia or dust in the air of the housing facilities.
3. In outbreak situations, vaccinate healthy birds first, progressing toward outbreak areas in order to vaccinate diseased birds last.
4. Do not spill or spatter the vaccine. Use entire contents of vial when first opened. Burn empty bottles, caps and all unused vaccine and accessories.
5. Do not dilute the vaccine or otherwise stretch the dosage.
6. Store at 2° to 7° C (35° to 45° F).
7. Do not vaccinate within 21 days of slaughter.

Notice

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine type, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and location of the birds; names of operators performing the vaccination and any observed reactions. This vaccine contains gentamicin as a preservative.

Contact our sales or technical services representatives to help design a custom vaccination program.

US/LTI/0916/0001

MERCK Animal Health

PRODUCT BULLETIN

INNOVAX®-ILT

Fowl Laryngotracheitis & Marek's Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For the vaccination of 18 day old chicken embryos by *in ovo* administration and of healthy 1 day old chickens by subcutaneous route as an aid in the prevention of Marek's disease (MD) and infectious laryngotracheitis (ILT).

ADVANTAGES:*

- Provides protection against both MD and ILT
- Aids in prevention of ILT through at least 60 weeks of age
- Offers flexibility for vaccination schedules by offering *in ovo* as well as subcutaneous administration
- Eliminates respiratory vaccination reactions caused by chickens vaccinated with live conventional ILT vaccines
- Eliminates an increase in vaccination reactions from other respiratory vaccines
- Eliminates latency, persistence, and spread caused by chickens vaccinated with live conventional ILT vaccines
- Prevents vaccine induced ILT outbreaks

Innovax®-ILT is a frozen, live, cell-associated laryngotracheitis and MD vaccine. It provides proven protection against ILT and MD. It is approved for *in ovo* administration to 18 day old chicken embryos and by subcutaneous vaccination of healthy 1 day old chickens.
Innovax-ILT contains recombinant turkey herpes virus used as a vector for the expression of 2 glyco-protein genes from laryngotracheitis virus.

2,000 dose ampules
4,000 dose ampules

*Data on file, Merck Animal Health

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PRODUCT BULLETIN

INNOVAX®-ILT

Fowl Laryngotracheitis & Marek's Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For Animal Use Only.

Description

Innovax®-ILT is a frozen, cell-associated, live virus vaccine that contains the recombinant serotype 3, turkey herpesvirus with genes from laryngotracheitis virus. The vaccine is packaged in glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

Innovax-ILT is recommended for vaccination of healthy 18 day old chicken embryos by the *in ovo* route or 1 day old chickens by subcutaneous injection as an aid in the prevention of Marek's disease and infectious laryngotracheitis. This product when administered by the subcutaneous route at one day of age aids in the prevention of infectious laryngotracheitis for at least 60 weeks.

Important: Storage Conditions

AMPULES - Store in liquid nitrogen container.
DILUENT - Do not freeze.
CONTAINER - Store liquid nitrogen container securely in upright position in a dry, well-ventilated area and away from incubator intakes and chicken boxes.

Safety Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions and safe practices for liquefied atmospheric gases (particularly liquid nitrogen). When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen. All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly; then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately. Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation of Vaccine

CAUTION: READ ABOVE SAFETY PRECAUTIONS ON HANDLING VACCINE AMPULE. AMPULES HAVE BEEN KNOWN TO EXPLODE ON SUDDEN TEMPERATURE CHANGES. DO NOT THAW IN HOT OR ICE COLD WATER. STERILIZE VACCINATING EQUIPMENT BY BOILING IN WATER FOR 30 MINUTES OR BY AUTOCLAVING 20 MINUTES AT 121°C (250°F). DO NOT USE CHEMICAL DISINFECTANTS.

1. Before withdrawing vaccine from liquid nitrogen canister, protect hands with gloves, wear long sleeves and use a facemask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
2. When withdrawing a cane of ampules from canister in liquid nitrogen container, expose only the ampule to be used immediately. We recommend handling only 1 ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
3. The contents of the ampule are thawed rapidly by immersing in a container of clean water at room temperature 20-30°C (68-86°F). Gently swirl the ampule to disperse contents. Then break ampule at its neck and immediately proceed as below.
4. Dilute the vaccine with diluent for administration. Use 100 ml sterile diluent for each 1,000 doses of vaccine to administer 0.1 ml dose per chicken embryo or use 50 ml for each 1,000 doses of vaccine to administer 0.05 ml per chicken embryo by the *in ovo* route. Use 200 ml sterile diluent for each 1,000 doses of vaccine to administer 0.2 ml dose per chicken by the subcutaneous route.
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18-gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE 16-27°C (60-80°F) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent container. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container. Remove the syringe.
8. Fill the previously sterilized egg inoculation machine or automatic syringe according to the manufacturer's recommendations.
9. The vaccine is now ready for use.

Method of Vaccination

IN OVO ADMINISTRATION:

1. Inoculate each 18 day old chicken embryo with a full dose (0.05 ml or 0.1ml).
2. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 7.
3. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

SUBCUTANEOUS ADMINISTRATION:

1. Hold the chicken by the back of the neck just below the head. The loose skin in the area is raised by gently pinching with the thumb and forefinger. Insert the needle beneath the skin in a downward direction away from the head. Inject 0.2 ml per chicken.
2. Avoid hitting the muscles and bones in the neck.
3. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 7.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Intervet Inc., U.S. and local regulatory requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure.

Caution

Good management practices are recommended to reduce exposure to Marek's disease and infectious laryngotracheitis for at least 3 weeks following vaccination. Therefore, directions should be followed carefully.

1. Do not mix any substance with this vaccine. Do not mix with other products, except as specified on this label.
2. Store vaccine in liquid nitrogen at a temperature below -150°C (-238°F).
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute or otherwise stretch the dosage of this vaccine.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chicken embryos or chickens should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains gentamicin as a preservative.
11. Inactivate unused contents before disposal.
12. In case of human exposure, contact a physician.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE IN LIQUID NITROGEN.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

INNOVAX®-ILT-SB

Fowl Laryngotracheitis - Marek's Disease

(Serotypes 2 + 3, Modified-Live and Live Marek's Disease Vector)

For vaccination of 18 day old embryos to aid in the prevention of infectious laryngotracheitis (ILT) and very virulent Marek's disease (MD).

ADVANTAGES:*

- Provides extended protection against both ILT virus and very virulent MD
- Eliminates respiratory vaccination reactions caused by chickens vaccinated with live conventional ILT vaccines
- Eliminates an increase in the vaccination reactions from other respiratory vaccines
- Eliminates latency, persistence and spread caused by chickens vaccinated with live conventional ILT vaccines
- Prevents vaccine induced ILT outbreaks

Innovax®-ILT-SB vaccine is a frozen, live, cell-associated laryngotracheitis and MD vaccine. It provides proven protection against ILT and very virulent MD. It is approved for *in ovo* injection of 18 day embryonated eggs. Innovax-ILT-SB contains a turkey herpes virus (HVT) used as a vector for the expression of the glycoprotein genes from laryngotracheitis virus. The HVT is combined with the SB-1 strain of chicken herpes virus (serotype 2).

2,000 dose ampules

*Data on file, Merck Animal Health

MERCK Animal Health

MERCK Animal Health

US/IIS/1116/0001

PRODUCT BULLETIN

INNOVAX®-ILT-SB

Fowl Laryngotracheitis & Marek's Disease

(Serotypes 2 & 3, Modified-Live and Live Marek's Disease Vector)

For Animal Use Only.

Description

Innovax® -ILT-SB is a frozen, cell-associated, live virus vaccine that contains the SB-1 strain of chicken herpesvirus serotype 2 and the recombinant serotype 3 turkey herpesvirus with genes from laryngotracheitis virus. The vaccine is packaged in glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

Innovax-ILT-SB is recommended for vaccination of healthy 18 day old chicken embryos by the *in ovo* route as an aid in the prevention of very virulent Marek's Disease and Infectious Laryngotracheitis.

Important: Storage Conditions

AMPULES - Store in liquid nitrogen container.
DILUENT - Do not freeze.
CONTAINER - Store liquid nitrogen container securely in upright position in a dry, well-ventilated area and away from incubator intakes and chicken boxes.

Vaccination Programs

Many factors must be considered in determining a sound vaccination program for a particular farm or poultry operation. To be fully effective, the vaccine must be administered to healthy, receptive birds held in proper environment under good management. In addition, the response may be modified by the age of the birds and their immune status. Seldom does 1 vaccination under field conditions produce complete protection for all individuals in a given flock. The amount of protection required will vary with the type of operation and the degree of exposure the flock is likely to encounter. For these reasons, a program of periodic revaccination may be required.

Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions and safe practices for liquefied atmospheric gases (particularly liquid nitrogen). When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen. All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly, then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately. Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation of Vaccine

CAUTION: READ ABOVE WARNING ADVICE ON HANDLING VACCINE AMPULE. AMPULES HAVE BEEN KNOWN TO EXPLODE ON SUDDEN TEMPERATURE CHANGES. DO NOT THAW IN HOT OR ICE COLD WATER. STERLIZE VACCINATING EQUIPMENT BY BOILING IN WATER FOR 30 MINUTES OR BY AUTOCLAVING (20 minutes at 250°F/121°C). DO NOT USE CHEMICAL DISINFECTANTS.

1. Before withdrawing vaccine from liquid nitrogen conister, protect hands with gloves, wear long sleeves and use a face mask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
2. When withdrawing a cane of ampules from canister in liquid nitrogen, expose only the ampule to be used immediately. We recommend handling only one ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
3. The contents of the ampule are thawed rapidly by immersing in a container of clean water at a temperature range of 68-86°F (20-30°C). Gently swirl the ampule to disperse contents. Then break ampule at its neck and immediately proceed as below.
4. Dilute the vaccine for administration. Use 100 ml sterile diluent for each 1,000 doses of vaccine to administer 0.1 ml dose per chicken embryo by the *in ovo* route.
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18-gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE (60-80°F/16-27°C) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent containter. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container. Remove the syringe.
8. Fill the previously sterilized automatic syringe or egg inoculation machine according to the manufacturer's recommendations.
9. The vaccine is now ready for use.

Method Vaccination

IN OVO ADMINISTRATION

1. Inoculate each 18 day old chicken embryo with a full dose (0.05 ml or 0.1 ml).
2. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 7.
3. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

Caution

READ FULL DIRECTIONS CAREFULLY.
GOOD MANAGEMENT PRACTICES ARE RECOMMENDED TO REDUCE EXPOSURE TO MAREK'S DISEASE AND INFECTIOUS LARYNGOTRACHEITIS FOR AT LEAST 3 WEEKS FOLLOWING VACCINATION. THEREFORE, DIRECTIONS SHOULD BE FOLLOWED CAREFULLY.

1. Do not mix any substance with this vaccine.
2. Store vaccine in liquid nitrogen at a temperature below -238°F (-150°C).
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute the vaccine or otherwise stretch the dosage.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chicken embryos should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains gentamicin as a preservative.
11. BURN THIS CONTAINER AND ALL UNUSED CONTENTS.

Notice

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, type, quantity, serial number, expiration date and place of purchase; the date and time of vaccination; the number, age, breed and location of the birds; names of operators performing the vaccination and any observed reactions.

STORE VACCINE IN LIQUID NITROGEN.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

INNOVAX®-ND-ILT

Infectious Laryngotracheitis - Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For *in ovo* vaccination of 18 day old chicken embryos and subcutaneous vaccination of day old chickens to provide protection against Newcastle disease (ND), infectious laryngotracheitis and Marek's disease.

ADVANTAGES:*

- Provides protection for virulent ND, ILT and Marek's disease.
- Offers effective protection in the face of ND virus maternal antibodies
- Replaces a conventional live ND vaccination program in the absence of exotic ND
- Removes the potential for respiratory reactions due to live ND and ILT vaccines
- No vaccine reactions observed in safety trials for improved bird performance
- Offers flexible administration via *in ovo* or subcutaneous injection to fit any vaccination schedule
- Eliminates an increase in vaccine reactions from other respiratory vaccines
- Eliminates latency, persistence, and spread caused by chickens vaccinated with live conventional ILT vaccines
- Prevents vaccine induced ILT outbreaks
- Allows the use of monovalent infectious bronchitis (IB) vaccines, improving IB protection

Innovax®-ND-ILT is a frozen, live, cell-associated ND, ILT and Marek's vaccine. It provides proven protection against virulent ND virus, ILT and Marek's. It is approved for *in ovo* injection of 18 day embryonated eggs and subcutaneous vaccination of day old chickens.

2,000 dose ampules

*Data on file, Merck Animal Health

MERCK Animal Health

MERCK Animal Health

US/IND/1116/0001

PRODUCT BULLETIN

INNOVAX®-ND-ILT

Infectious Laryngotracheitis - Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For *In ovo* Vaccination of 18 Day Old Chicken Embryos and
Subcutaneous Vaccination of Day Old Chickens

Description

This vaccine is a frozen, cell associated, live virus vaccine that contains the recombinant serotype 3 turkey herpesvirus with the F gene from Newcastle disease virus and with genes from laryngotracheitis virus. The vaccine is packaged in glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

This product has been shown to be effective for the vaccination of healthy 18 day old chicken embryos or one day old chickens against Marek's disease, Newcastle disease and infectious laryngotracheitis. Duration of Immunity has not been established. For more information regarding efficacy and safety data, go to productdata.aphis.usda.gov.

Important: Storage Conditions

AMPULES: Store in liquid nitrogen container.
DILUENT: Do not freeze.
CONTAINER: Store liquid nitrogen container securely in upright position in a dry, well ventilated area and away from incubator intakes and chicken boxes.

Safety Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions and safe practices for liquefied atmospheric gases (particularly liquid nitrogen). When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen. All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly; then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately. Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation of Vaccine

CAUTION: READ ABOVE SAFETY PRECAUTIONS ON HANDLING VACCINE AMPULE. AMPULES HAVE BEEN KNOWN TO EXPLODE ON SUDDEN TEMPERATURE CHANGES. DO NOT THAW IN HOT OR ICE COLD WATER. STERILIZE VACCINATING EQUIPMENT BY BOILING IN WATER FOR 30 MINUTES OR BY AUTOCLAVING 20 MINUTES AT 121°C (250°F). DO NOT USE CHEMICAL DISINFECTANTS.

1. Before withdrawing vaccine from liquid nitrogen canister, protect hands with gloves, wear long sleeves and use a facemask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
2. When withdrawing a cane of ampules from canister in liquid nitrogen container, expose only the ampule to be used immediately. We recommend handling only one ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
3. The contents of the ampule are thawed rapidly by immersing in a container of clean water at a temperature range of 20-30°C (68-86°F). Gently swirl the ampule to disperse contents. Then break ampule at its neck and immediately proceed as below.
4. Dilute the vaccine for administration. Use 100 ml sterile diluent for each 1,000 doses of vaccine to administer 0.1 ml dose per chicken embryo or use 50 ml for each 1,000 doses of vaccine to administer 0.05 ml per chicken embryo by the *in ovo* route. Use 200 ml sterile diluent for each 1,000 doses of vaccine to administer 0.2 ml dose per chicken by the subcutaneous route.
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18 gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE 16-27°C(60-80°F) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent container. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container. Remove the syringe.
8. Fill the previously sterilized automatic syringe or egg inoculation machine according to the manufacturer's recommendations.
9. The vaccine is now ready for use.

Method of Vaccination

In ovo Administration:

1. Inoculate each 18 day old chicken embryo with a full dose (0.05 ml or 0.1ml).
2. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.
3. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

Subcutaneous Administration:

1. Hold the chicken by the back of the neck just below the head. The loose skin in the area is raised by gently pinching with the thumb and forefinger. Insert the needle beneath the skin in a downward direction away from the head. Inject 0.2 ml per chicken.
2. Avoid hitting the muscles and bones in the neck.
3. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Intervet Inc., U.S. and local regulatory requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure.

Caution

Good management practices are recommended to reduce exposure to Marek's disease and infectious laryngotracheitis for at least three weeks following vaccination. Therefore, directions should be followed carefully.

1. Do not mix any substance with this vaccine. Do not mix with other products, except as specified on this label.
2. Store vaccine in liquid nitrogen at a temperature below -150°C (-238°F).
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute or otherwise stretch the dosage of this vaccine.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chicken embryos should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains Gentamicin as a preservative.
11. Inactivate unused contents before disposal.
12. In case of human exposure, contact a physician.
13. FOR ANIMAL USE ONLY.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

Intervet Inc.
Omaha, NE 68103 USA
VLN/PCN 165A/1C91.R0
1 800 211-3573 (USA) | 1 866 683-7838 (Canada)

MERCK Animal Health

PRODUCT BULLETIN

MYCOVAC-L®

Mycoplasma Gallisepticum Vaccine

(Live Culture)

For the vaccination of chickens at 6 weeks of age or older as an aid in the prevention and reduction of clinical signs of *Mycoplasma gallisepticum* (MG).

ADVANTAGES:

- Highly immunogenic, with very mild reaction
- Not pathogenic to turkeys
- Does not spread to adjacent chicken houses
- No ovarian transmission
- Serum will not convert MG plate antigen: easy to distinguish vaccine response from field infection

Mycovac-L® is the patented, live 6/85 strain of MG. The safe, highly immunogenic, lyophilized vaccine is for use via fine spray in chickens for protection against losses associated with MG infection.

10 x 2,000 doses

MERCK Animal Health

PRODUCT BULLETIN

MYCOVAC-L®

Mycoplasma Gallisepticum Vaccine

(Live Culture)

For Animal Use Only.

Description

Mycovac-L® is a live vaccine, prepared from the Merck 6/85 strain of *Mycoplasma gallisepticum* (MG) in a freeze dried preparation sealed under vacuum. The 6/85 strain is unique in that it is highly immunogenic for chickens and non-pathogenic for turkeys, does not readily spread to adjacent houses of chickens and is biologically stable. Mycovac-L has been propagated under exacting standards. The immunizing capability of this vaccine has been proven by various procedures including the Master Seed Immunogenicity Test.

Indications for Use

Fine Spray – Vaccination of healthy chickens 6 weeks of age or older for protection against clinical signs of MG.

Vaccination Program

Many factors must be considered in determining a sound vaccination program for a particular farm or poultry complex. To be fully effective, the vaccine must be administered properly to healthy, receptive animals maintained in a proper environment under good management. In addition, the response may be influenced by the age of the animals and their immune status. The level of immunity required will vary with operational practices and the degree of exposure. Therefore, a program of periodic revaccination may be necessary.

Preparation of Vaccine

FOR FINE SPRAY USE

DO NOT OPEN AND MIX THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE VACCINE IMMEDIATELY AFTER MIXING.

1. Remove the tear-off seal and stopper from vial containing the vaccine.
2. Carefully pour clean, cool, non-chlorinated water, preferably distilled, into the vaccine vial until the vial is approximately 2/3 full.
3. Insert the rubber stopper and shake moderately until all material is dissolved.
4. The vaccine is now ready for fine spray use in accordance with directions below. For best results, be sure to follow directions carefully!

Fine Spray Administration

FOR CHICKENS 6 WEEKS OF AGE OR OLDER

1. Spray vaccination should be of fine spray of less than 20 microns.
2. Do not use any disinfectants or skim milk in sprayer.
3. Use sprayer only for administration of vaccines. Clean thoroughly after each use.
4. Shut off all fans while spray vaccinating. Turn on fans immediately after spraying. Be careful in hot weather.
5. Spray chickens by walking slowly through the house.
6. Follow the recommendations of the manufacturer of the sprayer regarding water volume.
7. Use only clean, cool, non-chlorinated water, preferably distilled.
8. Individual(s) spraying chickens should wear face mask and goggles.

Caution

1. VACCINATE ONLY HEALTHY CHICKENS. Although disease may not be evident, coccidiosis, respiratory virus infection, infectious bursal disease, avian reovirus disease, Marek's disease, and other disease conditions may cause complications or reduce immunity.
2. All susceptible chickens on the same premises should be vaccinated at the same time.
3. Do not medicate chickens with antibacterial drugs—especially chlortetracycline, oxytetracycline and sulfonamide—5 days prior to or after vaccination.
4. The 6/85 strain of MG is not pathogenic for turkeys, but care should be taken in the application of the vaccine and handling of the chickens so as to maintain very tight disease security.
5. This vaccine should not be administered within 2 weeks of any live Newcastle, bronchitis or laryngotracheitis vaccination.
6. Efforts should be taken to reduce stress conditions at the time of vaccination and during the reaction period.
7. Do not spill, splash or mix this vaccine with any substance.
8. Do not dilute the vaccine or otherwise stretch the dosage.
9. Use entire contents when first opened.
10. Do not vaccinate within 21 days before slaughter.
11. Burn containers and all unused contents.
12. This vaccine contains no preservative.
13. Do not administer this vaccine within 4 weeks of onset of egg production or after egg production has begun.
14. This vaccine is to be used only in states where its usage is permitted and is to be used in compliance with applicable state and federal regulations.
15. Store in the dark in a refrigerator between 2–7°C (35–45°F). Do not freeze.

Notice

This vaccine has undergone rigid potency, safety, and purity tests, and meets Merck Animal Health and USDA requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure. Therefore, directions should be followed carefully.

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, quantity, serial number, expiration date and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE BETWEEN 2 And 7°C (35 AND 45°F)

Contact our sales or technical services representatives to help design a custom vaccination program.

US/MCV/0916/0001

MERCK Animal Health

PRODUCT BULLETIN

BRON-NEWCAVAC® SE

Newcastle - Bronchitis Vaccine

(Massachusetts Type, Killed Virus, *Salmonella Enteritidis* Bacterin)

For the vaccination of healthy chickens 10 weeks of age or older as an aid in the reduction of *Salmonella Enteritidis* (SE) phage types 4, 8 and 13a colonization of internal organs, including the reproductive tract. The vaccine also aids in the prevention of the signs and lesions associated with Newcastle disease (ND) and infectious bronchitis (IB).

ADVANTAGES:

When administered to pullets, Bron-Newcavac®SE:

- Aids in the reduction of SE, phage types 4, 8 and 13a colonization of the reproductive tract
- Aids in the reduction of SE, phage types 4, 8 and 13a colonization of internal organs
- Induces high, uniform antibodies against ND and IB in birds primed with live ND and IB vaccines throughout the entire production cycle.

Bron-Newcavac®SE is prepared from ND virus, IB virus, Massachusetts type, and SE, inactivated and suspended in the aqueous phase of an oil emulsion adjuvant. Contains ND virus, Massachusetts type IB virus and SE.

1,000 doses

MERCK Animal Health

PRODUCT BULLETIN

BRON-NEWCAVAC® SE

Newcastle - Bronchitis Vaccine

(Massachusetts Type, Killed Virus, *Salmonella Enteritidis* Bacterin)

For Animal Use Only.

Description

This vaccine is prepared from Newcastle disease virus, infectious bronchitis (IB) virus, Massachusetts type, and *Salmonella Enteritidis* (SE), inactivated and suspended in the aqueous phase of an oil adjuvant emulsion.

Indications for Use

This vaccine is indicated for the vaccination of chickens 10 weeks of age or older as an aid in the reduction of SE phage types 4, 8, & 13a colonization of internal organs, including the reproductive tract. This vaccine also aids in the prevention of the signs and lesions associated with Newcastle disease and IB. Chickens should be in good health when vaccinated. Sick or weak chickens will not develop adequate immunity. The use of any inactivated vaccine may cause false positive results on *Mycoplasma* plate tests. Avoid *Mycoplasma* testing prior to ten weeks post-vaccination.

Dosage and Administration

Allow the vaccine to reach ambient temperature, 16-27°C (60-80°F), shake well before and during use. Inject 0.5 mL subcutaneously in chickens in the back of the neck midway between the head and body in a direction away from the head using an 18-gauge needle. Do not inject into muscle tissue or neck vertebrae.

Vaccination Program

Vaccinate healthy chickens at least 10 week of age. A second vaccination is recommended a minimum of 6 weeks following initial vaccination. The best protection against Newcastle disease and IB is obtained when chickens are previously immunized with live Newcastle disease virus and IB virus vaccines.

Storage Conditions

Store in the dark in a refrigerator between 2-7°C (35-45°F). DO NOT FREEZE OR EXPOSE TO DIRECT SUNLIGHT.

Cautions

1. TO AVOID HUMAN INJECTION, EXTREME CAUTION SHOULD BE USED WHEN INJECTING ANY OIL EMULSION VACCINE. ACCIDENTAL HUMAN INJECTION MAY CAUSE SERIOUS LOCAL REACTIONS. CONTACT A PHYSICIAN IMMEDIATELY IF ACCIDENTAL HUMAN INJECTION OCCURS.
2. If it is desired to vaccinate birds during lay, a drop in egg production may occur.
3. Do not administer this vaccine during the critical egg laying period from onset until after peak production.
4. Do not use less than 1 dose per bird per vaccination.
5. Injection of inactivated vaccine into breast muscle may create processing plant problems under certain conditions.
6. Do not vaccinate chickens within 42 days before slaughter.
7. Do not mix this vaccine with any other substances.
8. Use entire contents when first opened.
9. Ensure that vaccination equipment is clean and sterile before use.
10. Do not use vaccination equipment with rubber parts, as the oil emulsion may attack certain types of rubber.
11. The use of SE vaccines may interfere with avian pullorum-typhoid testing. It is recommended that vaccination occur after testing is complete.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Intervet Inc., U.S. and local regulatory requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure. Therefore, directions should be followed carefully. This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, quantity, serial number, expiration date, place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE BETWEEN 2 AND 7°C (35 and 45°F). DO NOT FREEZE OR EXPOSE TO DIRECT SUNLIGHT.

Contact our sales or technical services representatives to help design a custom vaccination program.

US/BNS/0916/0002

MERCK Animal Health

3.0 DYNAMIC IMMUNITY

PRODUCT BULLETIN

RISMAVAC®

Marek's Disease Vaccine

(Serotype 1, Live Virus)

For the vaccination of healthy chickens 1 day of age by subcutaneous injection or to 18 day old embryonated eggs via *in ovo* to aid in the prevention of very virulent Marek's disease.

ADVANTAGES:

- Low passage Rispens strain vaccine for maximum efficacy against virulent MD challenge strains
- Rapid virus replication to induce early protection
- Compatible with Innovax®-ND-SB, Innovax®-ILT and Innovax®-ILT-SB vaccines*

Rismavac® is a low passage, frozen, live, cell-associated Marek's disease vaccine for use in 1 day old chickens by subcutaneous injection or to 18 day old embryonated eggs via *in ovo.* Its rapid early replication provides optimal protection against early, very virulent Marek's disease challenge.

2,000 dose ampules

*Data on file, Merck Animal Health

MERCK Animal Health

MERCK Animal Health

US/RSM/1116/0001

PRODUCT BULLETIN

RISMAVAC®

Marek's Disease Vaccine

(Serotype 1, Live Virus)

For Animal Use Only.

Description

Rismavac® is a frozen, cell-associated, live virus vaccine that contains the low passage CVI 988 strain of chicken herpesvirus. Rismavac is packaged in 2,000 dose glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

Rismavac is recommended for vaccination of healthy 1 day old chickens by subcutaneous injection or 18 day old chicken embryos by the *in ovo* route to aid in the prevention of very virulent Marek's disease.

Important: Storage Conditions

AMPULES - Store in liquid nitrogen container.
DILUENT - Do not freeze.
CONTAINER - Store liquid nitrogen container securely in upright position in a dry, well-ventilated area and away from incubator intakes and chicken boxes.

Safety Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions for, and safe practices for liquefied atmospheric gases (particularly liquid nitrogen). When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen. All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly; then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately. Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation of Vaccine

CAUTION: READ ABOVE WARNING ADVICE ON HANDLING VACCINE AMPULE. STERILIZE VACCINATING EQUIPMENT BY BOILING IN WATER FOR 30 MINUTES OR BY AUTOCLAVING (20 minutes at 250°F or 121°C).
DO NOT USE CHEMICAL DISINFECTANTS.

1. Use 2,000 doses of vaccine with 400 ml sterile diluent per 2,000 chickens when administering vaccine by the subcutaneous route. Use 2,000 doses of vaccine with 200 ml sterile diluent per 2,000 chicken embryos to administer 1 (0.10 ml) dose per chicken embryo. Use 2,000 doses of vaccine with 100 ml sterile diluent per 2,000 chicken embryos to administer 1 (0.05 ml) dose per chicken embryo.
2. Before withdrawing vaccine from liquid nitrogen canister, protect hands with gloves, wear long sleeves and use a face mask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
3. When withdrawing a cane of ampules from canister in liquid nitrogen container, expose only the ampule to be used immediately. We recommend handling only 1 ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
4. The contents of the ampule are thawed rapidly by immersing in water at room temperature. Shake ampule to disperse contents. Then break ampule at its neck and immediately proceed as below. Dilute the vaccine with diluent for administration. 2,000 doses are added for each 100, 200, or 400 ml of diluent. CAUTION: Ampules have been known to explode on sudden temperature changes. Do not thaw in hot or ice cold water.
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18-gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE (60°-80°F or 16°-27°C) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent container. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container. Remove the syringe.
8. Fill the previously sterilized automatic syringe or egg inoculation machine according to the manufacturer's recommendations.
9. The vaccine is now ready for use.

Method of Vaccination

SUBCUTANEOUS ADMINISTRATION

1. Hold the chicken by the back of the neck just below the head. The loose skin in the area is raised by gently pinching with the thumb and forefinger. Insert the needle beneath the skin in a downward direction away from the head. Inject 0.2 ml per chicken.
2. Avoid hitting the muscles and bones in the neck.
3. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.
4. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

IN OVO ADMINISTRATION

1. Inoculate each 18 day old chicken embryo with a full dose (0.05 ml or 0.10 ml).
2. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.
3. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Merck Animal Health and USDA requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administrationof the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure. This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Caution

It is recommended that good management practices be followed to reduce exposure to Marek's disease for at least 3 weeks following vaccination.

1. Do not mix any substance not approved by Merck Animal Health with this vaccine.
2. Store vaccine in liquid nitrogen at a temperature below -238°F or -150°C.
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute or otherwise stretch the dosage of this vaccine.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chickens or chicken embryos should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains gentamicin as a preservative.
11. BURN THIS CONTAINER AND ALL UNUSED CONTENTS. STORE VACCINE IN LIQUID NITROGEN.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

RIS-MA®

Marek's Disease Vaccine

(Serotypes 1 & 3, Live Virus)

For vaccination of healthy chickens 1 day of age by subcutaneous injection or 18 day embryonated eggs by the *in ovo* route to aid in the prevention of very virulent Marek's disease.

ADVANTAGES:*

- Low passage Rispens strain vaccine for maximum efficacy against virulent MD challenge
- Rispens strains combined with HVT in 1 ampule
- Provides faster and better protection than high passaged CVI-988 and CVI-988 derivative + HVT combinations

Ris-Ma® is a frozen vaccine of tissue culture origin that contains the original CVI-988 strain of chicken herpes virus and the FC-126 strain of turkey herpes virus. The CVI-988 strain was specially selected for its immunogenicity and has been used globally with excellent results.

2,000 dose ampules

*Data on file, Merck Animal Health

MERCK Animal Health

MERCK Animal Health

US/RIS/1116/0001

PRODUCT BULLETIN

RIS-MA®

Marek's Disease Vaccine

(Serotypes 1 & 3, Live Virus)

For Animal Use Only.

Description

Ris-Ma® is a frozen, cell-associated, live virus vaccine that contains the low passage CVI 988 strain of chicken herpesvirus and the FC-126 strain of turkey herpesvirus. Ris-Ma is packaged in 2,000 dose glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

Ris-Ma is recommended for vaccination of healthy 1 day old chickens by subcutaneous injection or 18 day old chicken embryos by the *in ovo* route to aid in the prevention of very virulent Marek's disease.

IMPORTANT: STORAGE CONDITIONS

AMPULES - Store in liquid nitrogen container.
DILUENT - Do not freeze.
CONTAINER - Store liquid nitrogen container securely in upright position in a dry, well-ventilated area and away from incubator intakes and chicken boxes.

Safety Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions for, and safe practices for liquefied atmospheric gases (particularly liquid nitrogen). When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen.

All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly; then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately. Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation of Vaccine

CAUTION: READ ABOVE WARNING ADVICE ON HANDLING VACCINE AMPULE. STERILIZE VACCINATING EQUIPMENT BY BOILING IN WATER
FOR 30 MINUTES OR BY AUTOCLAVING (20 MINUTES AT 250°F OR 121°C).
DO NOT USE CHEMICAL DISINFECTANTS.

1. Use 2,000 doses of vaccine with 400 ml sterile diluent per 2,000 chickens when administering vaccine by the subcutaneous route. Use 2,000 doses of vaccine with 200 ml sterile diluent per 2,000 chicken embryos to administer 1 (0.10 ml) dose per chicken embryo. Use 2,000 doses of vaccine with 100 ml sterile diluent per 2,000 chicken embryos to administer 1 (0.05 ml) dose per chicken embryo.
2. Before withdrawing vaccine from liquid nitrogen canister, protect hands with gloves, wear long sleeves and use a face mask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
3. When withdrawing a cane of ampules from canister in liquid nitrogen container, expose only the ampule to be used immediately. We recommend handling only 1 ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
4. The contents of the ampule are thawed rapidly by immersing in water at room temperature. Shake ampule to disperse contents. Then break ampule at its neck and immediately proceed as below. Dilute the vaccine with diluent for administration. 2,000 doses of vaccine are added for each 100, 200, or 400 ml of diluent. CAUTION: ampules have been known to explode on sudden temperature changes. Do not thaw in hot or ice cold water.
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18-gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE (60°- 80°F or 16°-27°C) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent container. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container. Remove the syringe.
8. Fill the previously sterilized automatic syringe or egg inoculation machine according to the manufacturer's recommendations.
9. The vaccine is now ready for use.

Method of Vaccination

SUBCUTANEOUS ADMINISTRATION

1. Hold the chicken by the back of the neck just below the head. The loose skin in the area is raised by gently pinching with the thumb and forefinger. Insert the needle beneath the skin in a downward direction away from the head. Inject 0.2 ml per chicken.
2. Avoid hitting the muscles and bones in the neck.
3. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement no. 11.
4. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

IN OVO ADMINISTRATION

1. Inoculate each 18 day old chicken embryo with a full dose (0.05 ml or 0.10 ml).
2. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement no. 11.
3. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

Notice

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck animal Health Customer Service at 1-800-211-3573.

Caution

It is recommended that good management practices be followed to reduce exposure to Marek's disease for at least 3 weeks following vaccination.

1. Do not mix any substance not approved by Merck animal Health with this vaccine.
2. Store vaccine in liquid nitrogen at a temperature below -238°F or -150°C.
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute or otherwise stretch the dosage of this vaccine.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chickens or chicken embryos should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains gentamicin as a preservative.
11. BURN THIS CONTAINER AND ALL UNUSED CONTENTS.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE IN LIQUID NITROGEN.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

INNOVAX®-ND-ILT

Infectious Laryngotracheitis - Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For *in ovo* vaccination of 18 day old chicken embryos and subcutaneous vaccination of day old chickens to provide protection against Newcastle disease (ND), infectious laryngotracheitis and Marek's disease.

ADVANTAGES:*

- Provides protection for virulent ND, ILT and Marek's disease.
- Offers effective protection in the face of ND virus maternal antibodies
- Replaces a conventional live ND vaccination program in the absence of exotic ND
- Removes the potential for respiratory reactions due to live ND and ILT vaccines
- No vaccine reactions observed in safety trials for improved bird performance
- Offers flexible administration via *in ovo* or subcutaneous injection to fit any vaccination schedule
- Eliminates an increase in vaccine reactions from other respiratory vaccines
- Eliminates latency, persistence, and spread caused by chickens vaccinated with live conventional ILT vaccines
- Prevents vaccine induced ILT outbreaks
- Allows the use of monovalent infectious bronchitis (IB) vaccines, improving IB protection

Innovax®-ND-ILT is a frozen, live, cell-associated ND, ILT and Marek's vaccine. It provides proven protection against virulent ND virus, ILT and Marek's. It is approved for *in ovo* injection of 18 day embryonated eggs and subcutaneous vaccination of day old chickens.

2,000 dose ampules

*Data on file, Merck Animal Health

MERCK Animal Health

MERCK Animal Health

US/IND/1116/0001

PRODUCT BULLETIN

INNOVAX®-ND-ILT

Infectious Laryngotracheitis - Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For *In ovo* Vaccination of 18 Day Old Chicken Embryos and
Subcutaneous Vaccination of Day Old Chickens

Description

This vaccine is a frozen, cell associated, live virus vaccine that contains the recombinant serotype 3 turkey herpesvirus with the F gene from Newcastle disease virus and with genes from laryngotracheitis virus. The vaccine is packaged in glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

This product has been shown to be effective for the vaccination of healthy 18 day old chicken embryos or one day old chickens against Marek's disease, Newcastle disease and infectious laryngotracheitis. Duration of Immunity has not been established. For more information regarding efficacy and safety data, go to productdata.aphis.usda.gov.

Important: Storage Conditions

AMPULES: Store in liquid nitrogen container.
DILUENT: Do not freeze.
CONTAINER: Store liquid nitrogen container securely in upright position in a dry, well ventilated area and away from incubator intakes and chicken boxes.

Safety Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions and safe practices for liquefied atmospheric gases (particularly liquid nitrogen). When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen. All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly; then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately. Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation of Vaccine

CAUTION: READ ABOVE SAFETY PRECAUTIONS ON HANDLING VACCINE AMPULE. AMPULES HAVE BEEN KNOWN TO EXPLODE ON SUDDEN TEMPERATURE CHANGES. DO NOT THAW IN HOT OR ICE COLD WATER. STERILIZE VACCINATING EQUIPMENT BY BOILING IN WATER FOR 30 MINUTES OR BY AUTOCLAVING 20 MINUTES AT 121°C (250°F). DO NOT USE CHEMICAL DISINFECTANTS.

1. Before withdrawing vaccine from liquid nitrogen canister, protect hands with gloves, wear long sleeves and use a facemask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
2. When withdrawing a cane of ampules from canister in liquid nitrogen container, expose only the ampule to be used immediately. We recommend handling only one ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
3. The contents of the ampule are thawed rapidly by immersing in a container of clean water at a temperature range of 20-30°C (68-86°F). Gently swirl the ampule to disperse contents. Then break ampule at its neck and immediately proceed as below.
4. Dilute the vaccine for administration. Use 100 ml sterile diluent for each 1,000 doses of vaccine to administer 0.1 ml dose per chicken embryo or use 50 ml for each 1,000 doses of vaccine to administer 0.05 ml per chicken embryo by the *in ovo* route. Use 200 ml sterile diluent for each 1,000 doses of vaccine to administer 0.2 ml dose per chicken by the subcutaneous route.
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18 gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE 16-27°C(60-80°F) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent container. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container. Remove the syringe.
8. Fill the previously sterilized automatic syringe or egg inoculation machine according to the manufacturer's recommendations.
9. The vaccine is now ready for use.

Method of Vaccination

In ovo Administration:

1. Inoculate each 18 day old chicken embryo with a full dose (0.05 ml or 0.1ml).
2. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.
3. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

Subcutaneous Administration:

1. Hold the chicken by the back of the neck just below the head. The loose skin in the area is raised by gently pinching with the thumb and forefinger. Insert the needle beneath the skin in a downward direction away from the head. Inject 0.2 ml per chicken.
2. Avoid hitting the muscles and bones in the neck.
3. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Intervet Inc., U.S. and local regulatory requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure.

Caution

Good management practices are recommended to reduce exposure to Marek's disease and infectious laryngotracheitis for at least three weeks following vaccination. Therefore, directions should be followed carefully.

1. Do not mix any substance with this vaccine. Do not mix with other products, except as specified on this label.
2. Store vaccine in liquid nitrogen at a temperature below -150°C (-238°F).
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute or otherwise stretch the dosage of this vaccine.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chicken embryos should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains Gentamicin as a preservative.
11. Inactivate unused contents before disposal.
12. In case of human exposure, contact a physician.
13. FOR ANIMAL USE ONLY.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

Intervet Inc.
Omaha, NE 68103 USA
VLN/PCN 165A/1C91.R0
1 800 211-3573 (USA) | 1 866 683-7838 (Canada)

MERCK Animal Health

PRODUCT BULLETIN

INNOVAX®-ND-IBD

Infectious Bursal Disease - Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For *in ovo* vaccination of 18 day old chicken embryos and subcutaneous vaccination of day old chickens to provide protection against Marek's disease, Newcastle disease, standard and variant infectious bursal disease.

ADVANTAGES:*

- Provides protection for virulent ND, IBD and Marek's disease
- Offers effective protection in the face of ND virus maternal antibodies
- Replaces a conventional live ND vaccination program in the absence of exotic ND
- Removes the potential for respiratory reactions due to live ND vaccines
- No vaccine reactions observed in safety trials for improved bird performance
- Offers flexible administration via *in ovo* or subcutaneous injection to fit any vaccination schedule
- Shown to be effective against standard and variant infectious bursal disease challenge

Innovax®-ND-IBD is a frozen, live, cell-associated Marek's, ND and IBD vaccine. It provides proven protection against Marek's, virulent ND virus, and both standard and variant strains of IBD. It is approved for *in ovo* injection of 18 day embryonated eggs and subcutaneous vaccination of day old chickens.

4,000 dose ampules

*Data on file, Merck Animal Health

MERCK Animal Health

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US-INX-201100002

PRODUCT BULLETIN

INNOVAX®-ND-IBD

Infectious Bursal Disease - Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For Animal Use Only.

Description

This vaccine is a frozen, cell associated, live virus vaccine that contains the recombinant serotype 3 turkey herpesvirus with the F gene from Newcastle disease virus and with the VP2 gene from infectious bursal disease virus. The vaccine is packaged in glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

This vaccine has been shown to be effective for the vaccination of healthy 18 day-old chicken embryos or one-day-old chickens against Marek's disease, Newcastle disease, standard and variant infectious bursal disease. Duration of immunity has not been established. For more information regarding efficacy and safety data, go to productdata.aphis.usda.gov.

Important: Storage Conditions

AMPULES - Store in liquid nitrogen container.
DILUENT - Do not freeze.
CONTAINER - Store liquid nitrogen container securely in upright position in a dry, well ventilated area and away from incubator intakes and chicken boxes.

Safety Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions and safe practices for liquefied atmospheric gases (particularly liquid nitrogen).

When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen. All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly; then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately.

Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation of Vaccine

CAUTION: READ ABOVE SAFETY PRECAUTIONS ON HANDLING VACCINE AMPULE. AMPULES HAVE BEEN KNOWN TO EXPLODE ON SUDDEN TEMPERATURE CHANGES. DO NOT THAW IN HOT OR ICE COLD WATER. STERILIZE VACCINATING EQUIPMENT BY BOILING IN WATER FOR 30 MINUTES OR BY AUTOCLAVING 20 MINUTES AT 121°C (250°F). DO NOT USE CHEMICAL DISINFECTANTS.

1. Before withdrawing vaccine from liquid nitrogen canister, protect hands with gloves, wear long sleeves and use a facemask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
2. When withdrawing a cane of ampules from canister in liquid nitrogen container, expose only the ampule to be used immediately. We recommend handling only one ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
3. The contents of the ampule are thawed rapidly by immersing in a container of clean water at a temperature range of 20-30°C (68-86°F). Gently swirl the ampule to disperse contents. Then break ampule at its neck and immediately proceed as below.
4. Dilute the vaccine for administration. Use 100 ml sterile diluent for each 1,000 doses of vaccine to administer 0.1 ml dose per chicken embryo or use 50 ml for each 1,000 doses of vaccine to administer 0.05 ml per chicken embryo by the *in ovo* route. Use 200 ml sterile diluent for each 1,000 doses of vaccine to administer 0.2 ml dose per chicken by the subcutaneous route.
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18 gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE 16-27°C (60-80°F) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent container. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container. Remove the syringe.
8. Fill the previously sterilized automatic syringe or egg inoculation machine according to the manufacturer's recommendations.
9. The vaccine is now ready for use.

Method of Vaccination

IN OVO ADMINISTRATION:

1. Inoculate each 18-day-old chicken embryo with a full dose (0.05 ml or 0.1ml).
2. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.
3. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

SUBCUTANEOUS ADMINISTRATION:

1. Hold the chicken by the back of the neck just below the head. The loose skin in the area is raised by gently pinching with the thumb and forefinger. Insert the needle beneath the skin in a downward direction away from the head. Inject 0.2 ml per chicken.
2. Avoid hitting the muscles and bones in the neck.
3. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Intervet Inc., U.S. and local regulatory requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure.

Caution

Good management practices are recommended to reduce exposure to Marek's disease and bursal disease for at least three weeks following vaccination. Therefore, directions should be followed carefully.

1. Do not mix any substance with this vaccine. Do not mix with other products, except as specified on this label.
2. Store vaccine in liquid nitrogen at a temperature below -150°C (-238°F).
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute or otherwise stretch the dosage of this vaccine.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chicken embryos or chickens should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains gentamicin as a preservative.
11. Inactivate unused contents before disposal.
12. In case of human exposure, contact a physician.
13. FOR ANIMAL USE ONLY.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE IN LIQUID NITROGEN.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

INNOVAX®-ND

Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For *in ovo* vaccination of 18 day old chicken embryos and subcutaneous vaccination of day old chickens.

ADVANTAGES:*

- Provides extended protection for virulent Newcastle disease (ND) and Marek's disease (MD)
- Aids in prevention of ND through at least 60 weeks of age
- Offers effective protection in the face of ND virus maternal antibodies
- Replaces a conventional live ND vaccination program in the absence of exotic ND
- Removes the potential for respiratory reactions due to live ND vaccines
- Allows the use of monovalent infectious bronchitis (IB) vaccines, improving IB protection
- Offers flexible administration via *in ovo* or subcutaneous injection to fit any vaccination schedule

Innovax®-ND is a frozen, live, cell-associated ND and MD vaccine. It provides proven protection against virulent ND virus and MD. It is approved for *in ovo* injection of 18 day embryonated eggs and subcutaneous vaccination of day old chickens.

2,000 dose ampules
4,000 dose ampules

*Data on file, Merck Animal Health

MERCK Animal Health

MERCK Animal Health

US/IND/1116/0001

PRODUCT BULLETIN

INNOVAX®-ND

Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For Animal Use Only.

Description

This vaccine is a frozen, cell-associated, live virus vaccine that contains the recombinant serotype 3 turkey herpesvirus with the F gene from Newcastle disease virus. The vaccine is packaged in glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

This vaccine is recommended for vaccination of healthy 18 day old chicken embryos by the *in ovo* route or 1 day old chickens by subcutaneous injection as an aid in the prevention of Marek's disease and Newcastle disease.

Important: Storage Conditions

AMPULES - Store in liquid nitrogen container.
DILUENT - Do not freeze.
CONTAINER - Store liquid nitrogen container securely in upright position in a dry, well-ventilated area and away from incubator intakes and chicken boxes.

Safety Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions and safe practices for liquefied atmospheric gases (particularly liquid nitrogen). When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen. All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly; then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately. Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation of Vaccine

CAUTION: READ ABOVE SAFETY PRECAUTIONS ON HANDLING VACCINE AMPULE. AMPULES HAVE BEEN KNOWN TO EXPLODE ON SUDDEN TEMPERATURE CHANGES. DO NOT THAW IN HOT OR ICE COLD WATER. STERILIZE VACCINATING EQUIPMENT BY BOILING IN WATER FOR 30 MINUTES OR BY AUTOCLAVING 20 MINUTES AT 121°C (250°F). DO NOT USE CHEMICAL DISINFECTANTS.

1. Before withdrawing vaccine from liquid nitrogen canister, protect hands with gloves, wear long sleeves and use a facemask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
2. When withdrawing a cane of ampules from canister in liquid nitrogen container, expose only the ampule to be used immediately. We recommend handling only 1 ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
3. The contents of the ampule are thawed rapidly by immersing in a container of clean water at a temperature range of 20-30°C (68-86°F). Gently swirl the ampule to disperse contents. Then break ampule at its neck and immediately proceed as below.
4. Dilute the vaccine with diluent for administration. Use 100 ml sterile diluent for each 1,000 doses of vaccine to administer 0.1 ml dose per chicken embryo or use 50 ml for each 1,000 doses of vaccine to administer 0.05 ml per chicken embryo by the *in ovo* route. Use 200 ml sterile diluent for each 1,000 doses of vaccine to administer 0.2 ml dose per chicken by the subcutaneous route.
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18-gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE 16-27°C (60-80°F) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent container. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container. Remove the syringe.
8. Fill the previously sterilized egg inoculation machine or automatic syringe according to the manufacturer's recommendations.
9. The vaccine is now ready for use.

Method of Vaccination

IN OVO ADMINISTRATION:

1. Inoculate each 18 day old chicken embryo with a full dose (0.05 ml or 0.1ml).
2. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.
3. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

SUBCUTANEOUS ADMINISTRATION:

1. Hold the chicken by the back of the neck just below the head. The loose skin in the area is raised by gently pinching with the thumb and forefinger. Insert the needle beneath the skin in a downward direction away from the head. Inject 0.2 ml per chicken.
2. Avoid hitting the muscles and bones in the neck.
3. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.

Notice

This vaccine has undergone rigid potency and purity tests, and meets Merck, U.S. and local regulatory requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure. A safety data sheet (SDS) is available upon request This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Caution

Good management practices are recommended to reduce exposure to Marek's disease and Newcastle disease for at least 3 weeks following vaccination. Therefore, directions should be followed carefully.

1. Do not mix any substance with this vaccine.
2. Store vaccine in liquid nitrogen at a temperature below -150°C (-238°F).
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute or otherwise stretch the dosage of this vaccine.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chicken embryos or chickens should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains gentamicin as a preservative.
11. BURN THIS CONTAINER AND ALL UNUSED CONTENTS.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE IN LIQUID NITROGEN.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

INNOVAX®-ILT

Fowl Laryngotracheitis & Marek's Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For the vaccination of 18 day old chicken embryos by *in ovo* administration and of healthy 1 day old chickens by subcutaneous route as an aid in the prevention of Marek's disease (MD) and infectious laryngotracheitis (ILT).

ADVANTAGES:*

- Provides protection against both MD and ILT
- Aids in prevention of ILT through at least 60 weeks of age
- Offers flexibility for vaccination schedules by offering *in ovo* as well as subcutaneous administration
- Eliminates respiratory vaccination reactions caused by chickens vaccinated with live conventional ILT vaccines
- Eliminates an increase in vaccination reactions from other respiratory vaccines
- Eliminates latency, persistence, and spread caused by chickens vaccinated with live conventional ILT vaccines
- Prevents vaccine induced ILT outbreaks

Innovax®-ILT is a frozen, live, cell-associated laryngotracheitis and MD vaccine. It provides proven protection against ILT and MD. It is approved for *in ovo* administration to 18 day old chicken embryos and by subcutaneous vaccination of healthy 1 day old chickens.
Innovax-ILT contains recombinant turkey herpes virus used as a vector for the expression of 2 glyco-protein genes from laryngotracheitis virus.

2,000 dose ampules
4,000 dose ampules

*Data on file, Merck Animal Health

MERCK Animal Health

MERCK Animal Health

US/IIL/1116/0002

PRODUCT BULLETIN

INNOVAX®-ILT

Fowl Laryngotracheitis & Marek's Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For Animal Use Only.

Description

Innovax®-ILT is a frozen, cell-associated, live virus vaccine that contains the recombinant serotype 3, turkey herpesvirus with genes from laryngotracheitis virus. The vaccine is packaged in glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

Innovax-ILT is recommended for vaccination of healthy 18 day old chicken embryos by the *in ovo* route or 1 day old chickens by subcutaneous injection as an aid in the prevention of Marek's disease and infectious laryngotracheitis. This product when administered by the subcutaneous route at one day of age aids in the prevention of infectious laryngotracheitis for at least 60 weeks.

Important: Storage Conditions

AMPULES - Store in liquid nitrogen container.
DILUENT - Do not freeze.
CONTAINER - Store liquid nitrogen container securely in upright position in a dry, well-ventilated area and away from incubator intakes and chicken boxes.

Safety Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions and safe practices for liquefied atmospheric gases (particularly liquid nitrogen). When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen. All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly; then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately. Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation of Vaccine

CAUTION: READ ABOVE SAFETY PRECAUTIONS ON HANDLING VACCINE AMPULE. AMPULES HAVE BEEN KNOWN TO EXPLODE ON SUDDEN TEMPERATURE CHANGES. DO NOT THAW IN HOT OR ICE COLD WATER. STERILIZE VACCINATING EQUIPMENT BY BOILING IN WATER FOR 30 MINUTES OR BY AUTOCLAVING 20 MINUTES AT 121°C (250°F). DO NOT USE CHEMICAL DISINFECTANTS.

1. Before withdrawing vaccine from liquid nitrogen canister, protect hands with gloves, wear long sleeves and use a facemask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
2. When withdrawing a cane of ampules from canister in liquid nitrogen container, expose only the ampule to be used immediately. We recommend handling only 1 ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
3. The contents of the ampule are thawed rapidly by immersing in a container of clean water at room temperature 20-30°C (68-86°F). Gently swirl the ampule to disperse contents. Then break ampule at its neck and immediately proceed as below.
4. Dilute the vaccine with diluent for administration. Use 100 ml sterile diluent for each 1,000 doses of vaccine to administer 0.1 ml dose per chicken embryo or use 50 ml for each 1,000 doses of vaccine to administer 0.05 ml per chicken embryo by the *in ovo* route. Use 200 ml sterile diluent for each 1,000 doses of vaccine to administer 0.2 ml dose per chicken by the subcutaneous route.
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18-gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE 16-27°C (60-80°F) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent container. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container. Remove the syringe.
8. Fill the previously sterilized egg inoculation machine or automatic syringe according to the manufacturer's recommendations.
9. The vaccine is now ready for use.

Method of Vaccination

IN OVO ADMINISTRATION:

1. Inoculate each 18 day old chicken embryo with a full dose (0.05 ml or 0.1ml).
2. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 7.
3. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

SUBCUTANEOUS ADMINISTRATION:

1. Hold the chicken by the back of the neck just below the head. The loose skin in the area is raised by gently pinching with the thumb and forefinger. Insert the needle beneath the skin in a downward direction away from the head. Inject 0.2 ml per chicken.
2. Avoid hitting the muscles and bones in the neck.
3. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 7.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Intervet Inc., U.S. and local regulatory requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure.

Caution

Good management practices are recommended to reduce exposure to Marek's disease and infectious laryngotracheitis for at least 3 weeks following vaccination. Therefore, directions should be followed carefully.

1. Do not mix any substance with this vaccine. Do not mix with other products, except as specified on this label.
2. Store vaccine in liquid nitrogen at a temperature below -150°C (-238°F).
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute or otherwise stretch the dosage of this vaccine.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chicken embryos or chickens should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains gentamicin as a preservative.
11. Inactivate unused contents before disposal.
12. In case of human exposure, contact a physician.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE IN LIQUID NITROGEN.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

INNOVAX®-ILT-SB

Fowl Laryngotracheitis - Marek's Disease

(Serotypes 2 + 3, Modified-Live and Live Marek's Disease Vector)

For vaccination of 18 day old embryos to aid in the prevention of infectious laryngotracheitis (ILT) and very virulent Marek's disease (MD).

ADVANTAGES:*

- Provides extended protection against both ILT virus and very virulent MD
- Eliminates respiratory vaccination reactions caused by chickens vaccinated with live conventional ILT vaccines
- Eliminates an increase in the vaccination reactions from other respiratory vaccines
- Eliminates latency, persistence and spread caused by chickens vaccinated with live conventional ILT vaccines
- Prevents vaccine induced ILT outbreaks

Innovax®-ILT-SB vaccine is a frozen, live, cell-associated laryngotracheitis and MD vaccine. It provides proven protection against ILT and very virulent MD. It is approved for *in ovo* injection of 18 day embryonated eggs. Innovax-ILT-SB contains a turkey herpes virus (HVT) used as a vector for the expression of the glycoprotein genes from laryngotracheitis virus. The HVT is combined with the SB-1 strain of chicken herpes virus (serotype 2).

2,000 dose ampules

*Data on file, Merck Animal Health

MERCK Animal Health

MERCK Animal Health

US/IIS/1116/0001

PRODUCT BULLETIN

INNOVAX®-ILT-SB

Fowl Laryngotracheitis & Marek's Disease

(Serotypes 2 & 3, Modified-Live and Live Marek's Disease Vector)

For Animal Use Only.

Description

Innovax® -ILT-SB is a frozen, cell-associated, live virus vaccine that contains the SB-1 strain of chicken herpesvirus serotype 2 and the recombinant serotype 3 turkey herpesvirus with genes from laryngotracheitis virus. The vaccine is packaged in glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

Innovax-ILT-SB is recommended for vaccination of healthy 18 day old chicken embryos by the *in ovo* route as an aid in the prevention of very virulent Marek's Disease and Infectious Laryngotracheitis.

Important: Storage Conditions

AMPULES - Store in liquid nitrogen container.
DILUENT - Do not freeze.
CONTAINER - Store liquid nitrogen container securely in upright position in a dry, well-ventilated area and away from incubator intakes and chicken boxes.

Vaccination Programs

Many factors must be considered in determining a sound vaccination program for a particular farm or poultry operation. To be fully effective, the vaccine must be administered to healthy, receptive birds held in proper environment under good management. In addition, the response may be modified by the age of the birds and their immune status. Seldom does 1 vaccination under field conditions produce complete protection for all individuals in a given flock. The amount of protection required will vary with the type of operation and the degree of exposure the flock is likely to encounter. For these reasons, a program of periodic revaccination may be required.

Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions and safe practices for liquefied atmospheric gases (particularly liquid nitrogen). When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen. All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly, then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately. Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation of Vaccine

CAUTION: READ ABOVE WARNING ADVICE ON HANDLING VACCINE AMPULE. AMPULES HAVE BEEN KNOWN TO EXPLODE ON SUDDEN TEMPERATURE CHANGES. DO NOT THAW IN HOT OR ICE COLD WATER. STERLIZE VACCINATING EQUIPMENT BY BOILING IN WATER FOR 30 MINUTES OR BY AUTOCLAVING (20 minutes at 250°F/121°C). DO NOT USE CHEMICAL DISINFECTANTS.

1. Before withdrawing vaccine from liquid nitrogen conister, protect hands with gloves, wear long sleeves and use a face mask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
2. When withdrawing a cane of ampules from canister in liquid nitrogen, expose only the ampule to be used immediately. We recommend handling only one ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
3. The contents of the ampule are thawed rapidly by immersing in a container of clean water at a temperature range of 68-86°F (20-30°C). Gently swirl the ampule to disperse contents. Then break ampule at its neck and immediately proceed as below.
4. Dilute the vaccine for administration. Use 100 ml sterile diluent for each 1,000 doses of vaccine to administer 0.1 ml dose per chicken embryo by the *in ovo* route.
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18-gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE (60-80°F/16-27°C) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent containter. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container. Remove the syringe.
8. Fill the previously sterilized automatic syringe or egg inoculation machine according to the manufacturer's recommendations.
9. The vaccine is now ready for use.

Method Vaccination

IN OVO ADMINISTRATION

1. Inoculate each 18 day old chicken embryo with a full dose (0.05 ml or 0.1 ml).
2. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 7.
3. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

Caution

READ FULL DIRECTIONS CAREFULLY.
GOOD MANAGEMENT PRACTICES ARE RECOMMENDED TO REDUCE EXPOSURE TO MAREK'S DISEASE AND INFECTIOUS LARYNGOTRACHEITIS FOR AT LEAST 3 WEEKS FOLLOWING VACCINATION. THEREFORE, DIRECTIONS SHOULD BE FOLLOWED CAREFULLY.

1. Do not mix any substance with this vaccine.
2. Store vaccine in liquid nitrogen at a temperature below -238°F (-150°C).
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute the vaccine or otherwise stretch the dosage.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chicken embryos should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains gentamicin as a preservative.
11. BURN THIS CONTAINER AND ALL UNUSED CONTENTS.

Notice

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, type, quantity, serial number, expiration date and place of purchase; the date and time of vaccination; the number, age, breed and location of the birds; names of operators performing the vaccination and any observed reactions.

STORE VACCINE IN LIQUID NITROGEN.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

89/03®

Bursal Disease Vaccine

(Variant Strain, Live Virus)

For vaccination of healthy chickens for the prevention of disease due to infectious bursal disease (IBD) virus caused by standard, Delaware, or GLS strains of IBD.

ADVANTAGES:*

- The first live IBD vaccine for day of age use that fully protects against standard, Delaware and GLS IBD strains
- The only attenuated IBD vaccine that retains all Delaware-variant characteristics including reaction with the neutralizing 67 monoclonal antibody marker
- Safe for use *in ovo*
- Safe for subcutaneous use at day of age with serotypes 2 and 3 Marek's disease vaccines
- Does not spread bird-to-bird or revert to virulence
- No bursal damage and resultant immunosuppression

89/03® is a frozen vaccine which contains the unique, patented 89/03 strain of IBD virus. It provides strong protection against standard IBD virus as well as Delaware and GLS IBD variants and is approved for use *in ovo* and via subcutaneous injection in day of age chicks.

4,000 dose ampules

*Data on file, Merck Animal Health

MERCK Animal Health

MERCK Animal Health

US/890/1116/0001

PRODUCT BULLETIN

89/03®

Bursal Disease Vaccine

(Variant Strain, Live Virus)

For Animal Use Only.

Description

89/03® is a frozen, live virus vaccine that contains the 89/03 strain of infectious bursal disease virus (IBD). 89/03 is a Delaware variant type IBD virus. 89/03 is packaged in 2,000 dose glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

89/03 is recommended for vaccination of healthy 1 day old chickens by subcutaneous injection or 18 day old chicken embryos by the *in ovo* route for the prevention of disease due to infectious bursal disease viruses (Standard and variants).

Important: Storage Conditions

AMPULES - Store in liquid nitrogen container.
DILUENT - Do not freeze.
CONTAINER - Store liquid nitrogen container securely in upright position in a dry, well-ventilated area and away from incubator intakes and chicken boxes.

Safety Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions for, and safe practices for, liquefied atmospheric gases (particularly liquid nitrogen). When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen. All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly; then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately. Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation of Vaccine

CAUTION: READ ABOVE WARNING ADVICE ON HANDLING VACCINE AMPULE. STERILIZE VACCINATING EQUIPMENT BY BOILING IN WATER FOR 30 MINUTES OR BY AUTOCLAVING (20 MINUTES AT 250°F or 121°C). DO NOT USE CHEMICAL DISINFECTANTS.

1. Use 2,000 doses of vaccine with 400 ml sterile diluent per 2,000 chickens, when administering vaccine by the subcutaneous route. Use 2,000 doses of vaccine with 200 ml sterile diluent per 2,000 chicken embryos to administer 1 (0.10 ml) dose per chicken embryo. Use 2,000 doses of vaccine with 100 ml sterile diluent per 2,000 chicken embryos to administer 1 (0.05 ml) dose per chicken embryo.
2. Before withdrawing vaccine from liquid nitrogen canister, protect hands with gloves, wear long sleeves and use a face mask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
3. When withdrawing a cane of ampules from canister in liquid nitrogen container, expose only the ampule to be used immediately. We recommend handling only one ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
4. The contents of the ampule are thawed rapidly by immersing in water at room temperature. Shake ampule to disperse contents. Then break ampule at its neck and immediately proceed as below. Dilute the vaccine with diluent for administration. 2,000 doses are added for each 100, 200, or 400 ml of diluent. CAUTION: AMPULES HAVE BEEN KNOWN TO EXPLODE ON SUDDEN TEMPERATURE CHANGES. DO NOT THAW IN HOT OR ICE COLD WATER
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18-gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE (60°-80°F or 16°-27°C) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent container. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container. Remove the syringe.
8. Fill the previously sterilized automatic syringe or egg inoculation machine according to the manufacturer's recommendations.
9. The vaccine is now ready for use.

Method of Vaccination

SUBCUTANEOUS ADMINISTRATION:

1. Hold the chicken by the back of the neck just below the head. The loose skin in the area is raised by gently pinching with the thumb and forefinger. Insert the needle beneath the skin in a downward direction away from the head. Inject 0.2 ml per chicken.
2. Avoid hitting the muscles and bones in the neck.
3. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.
4. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

IN OVO ADMINISTRATION:

1. Inoculate each 18 day old chicken embryo with a full dose (0.05 ml or 0.10 ml).
2. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.
3. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Merck Animal Health and USDA requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure.

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Caution

It is recommended that good management practices be followed to reduce exposure to infectious bursal disease for at least 3 weeks following vaccination.

1. Do not mix any substance not approved by Merck Animal Health with this vaccine.
2. Store vaccine in liquid nitrogen at a temperature below -238°F or -150°C.
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute or otherwise stretch the dosage of this vaccine.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chickens or chicken embryos should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains gentamicin as a preservative.
11. BURN THIS CONTAINER AND ALL UNUSED CONTENTS.

Records

Keep a record of vaccine, quantity, serial number, expiration date and place of purchase; the date and time of vaccination; the number, age, breed and location of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE IN LIQUID NITROGEN.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

UNIVAX-BD®

Bursal Disease Vaccine

(Live Virus, Chicken Tissue Culture Origin)

For vaccination of healthy chickens one day of age or older and to 18 to 19 day embryonated eggs as an aid in the prevention of infectious bursal disease (IBD).

ADVANTAGES:

- Produces broad protection against subclinical challenge without destroying future immunization capabilities
- Approved for *in ovo* use in 18 to 19 day embryonated eggs
- Approved for day of age by subcutaneous route of administration or by drinking water to birds 1 week of age or older
- Highly antigenic, mild reacting, plaque-purified virus for consistent protection
- Ideal product for *in ovo* or day of age application

Univax-BD® vaccine is a live virus vaccine containing a carefully selected mild strain of bursal disease virus grown in chicken tissue culture and combined with stabilizing agents. The product is supplied as a lyophilized vaccine contained in vials sealed under vacuum.

10 x 1,000 doses
10 x 5,000 doses

MERCK Animal Health

MERCK Animal Health

US/UNB/1116/0001

PRODUCT BULLETIN

UNIVAX-BD®

Bursal Disease Vaccine

(Live Virus, Chicken Tissue Culture Origin)

For Animal Use Only.

Description

Univax-BD® vaccine is a live virus vaccine containing a carefully selected mild strain of bursal disease (IBD) virus grown in tissue culture and combined with stabilizing agents. The product is supplied as a lyophilized vaccine contained in vials sealed under vacuum. For use in 18 to 19 day old embryonated chicken eggs or chickens at 1 day of age by subcutaneous route of administration and/or by drinking water at 1 week or older as an aid in preventing IBD.

When to Vaccinate

Vaccinate 18 to 19 day old embryonated chicken eggs by the *in ovo* route or subcutaneously at 1 day of age and/or by drinking water at 1 week or older. Use only healthy embryonated eggs for the *in ovo* route. Good management practices should be followed to reduce exposure of birds to virulent infectious bursal disease virus during the first several weeks of life.

Your Vaccination Program

The development of a durable, strong protection depends upon the use of an effective vaccination program as well as many circumstances such as administration techniques, environment and flock health at time of vaccination. Also, the immune response to one vaccination under field conditions is seldom complete for all animals within a given flock. Even when vaccination is successful, the protection stimulated in individual animals against different diseases may not be lifelong. Therefore, under certain circumstances revaccination may be necessary.

Preparation of the Vaccine

IN OVO ROUTE OF ADMINISTRATION

To avoid personal injury and embryonic mortality read thoroughly and follow the *in ovo* operator's manual before attempting any *in ovo* vaccination. Sanitize the *in ovo* system according to the operator's manual.

1. Do not open and mix the vaccine until ready for use.
2. Mix only 1 vial at a time and use entire contents within 2 hours.
3. Lift up top of seal on vaccine vial to expose rubber stopper. Using sterile needle and 5 or 10 mL syringe, remove a small amount (5 mL) of diluent from the diluent bottle and transfer this to the vaccine vial. Vacuum in the vaccine vial will readily pull in the diluent. Release the vacuum remaining in the vial.
4. Vigorously shake vaccine vial with transferred diluent to rehydrate the vaccine.
5. Using the same sterile needle and syringe, completely transfer the rehydrated vaccine to remaining diluent in diluent bottle. Rinse syringe and vaccine vial by withdrawing additional diluent and repeating the process.
6. Vigorously shake final rehydrated vaccine for 20-30 seconds to mix thoroughly.
7. The vaccine is now ready for use.

SUBCUTANEOUS ROUTE OF ADMINISTRATION

1. Do not open and mix the vaccine until ready for use.
2. Mix only 1 vial at a time and use entire contents within 2 hours.
3. Lift up top of seal on vaccine vial to expose rubber stopper. Using sterile needle and 5 or 10 mL syringe, remove a small amount (5 mL) of diluent from the diluent bottle and transfer this to the vaccine vial. Vacuum in the vaccine vial will readily pull in the diluent. Release the vacuum remaining in the vial.
4. Vigorously shake vaccine vial with transferred diluent to rehydrate the vaccine.
5. Using the same sterile needle and syringe, completely transfer the rehydrated vaccine to remaining diluent in the diluent bottle. Rinse syringe and vaccine vial by withdrawing additional diluent and repeating the process.
6. Vigorously shake final rehydrated vaccine for 20-30 seconds to mix thoroughly.
7. The vaccine is now ready for use.

DRINKING WATER METHOD

1. Assemble the vaccine and equipment needed to vaccinate the entire flock at one time.
2. Remove the tear-off aluminum seal from the vaccine vial without disturbing the rubber stopper.
3. Use cool, clean, non-chlorinated tap water to which powdered milk has been added as directed under How to Vaccinate.
4. Holding vial submerged in a pail of water or under a running stream of water, lift the lip of the rubber stopper so that the water (milk added) is sucked into the vial.
5. Reseat the stopper and shake the vial to thoroughly dissolve the vaccine.

How to Vaccinate

BY *IN OVO* ROUTE OF ADMINISTRATION

Follow the *in ovo* operator's manual before attempting any *in ovo* vaccination. Sanitize the *in ovo* system according to the operator's manual. The *in ovo* system should be calibrated accurately to deliver 0.05 mL or 0.10 mL into each embryonated egg.

BY SUBCUTANEOUS ROUTE OF ADMINISTRATION

Insert a filling tube (large, sharpened transfer tube) into the bottle of vaccine. Connect the filling tube by means of rubber or plastic tubing to an automatic vaccinator fitted with a 22-gauge 1/2 inch needle. The automatic vaccinator should be calibrated accurately ahead of time to deliver 0.2 mL.

BY DRINKING WATER METHOD

Do not mix the vaccine into the drinking water until ready for use. Drinking water for vaccination should be mixed with powdered milk to prevent inactivation from chlorine or other water additives and also to stabilize the vaccine virus. The powdered milk should be added to the water at the rate of 3 grams per 11 liters (1 heaped teaspoon per 3 U.S. gallons); or 90 grams per 300 liters (1 heaped cupful per 80 U.S. gallons). Withhold water for several hours before vaccinating so the birds are thirsty. Thoroughly clean and rinse all watering containers so that no residual disinfectants remain. Dilute the vaccine immediately before use with cool, clean, non-chlorinated water (milk added). Pour the dissolved vaccine material into the following amounts of water and mix thoroughly.

Each 1000 Birds	U.S. Gallons	Metric Liters
1 Week	1.75	6.5
2 to 4 Weeks	2.5	10
4 to 8 Weeks	5	20
Over 8 Weeks	10	40

Distribute diluted vaccine so that all birds are able to drink within a 1 hour period and do not add any more water until the vaccine is consumed. Avoid placing water in direct sunlight.

Caution

1. Use the *in ovo* system for the *in ovo* vaccination into 18 to 19 day old healthy embryonated chicken eggs. For subcutaneous use only in day old birds. For use by drinking water in birds 1 week or older.
2. All birds within a house should be vaccinated on the same day. Isolate other susceptible birds on the premises from the birds being vaccinated.
3. Vaccinate only healthy birds. Although disease may not be evident, coccidiosis, chronic respiratory disease, *Mycoplasma* infection, lymphoid leukosis, Marek's disease, or other disease conditions may cause serious complications or reduce protection.
4. In outbreak situations, vaccinate healthy birds first, progressing toward outbreak areas in order to vaccinate diseased birds last.
5. Do not spill or spatter the vaccine. Use entire contents of vial when first opened. Burn empty bottles, caps and all unused vaccine and accessories.
6. Wash hands thoroughly after using the vaccine.
7. Do not dilute the vaccine or otherwise stretch the dosage.
8. Store at 2° to 7° C (35° to 45° F).
9. Do not vaccinate within 21 days before slaughter.
10. Use only in states (U.S.) where permitted and on premises with a history of bursal disease.

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine type, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and location of the birds; names of operators performing the vaccination and any observed reactions.

This vaccine contains gentamicin as a preservative. The use of this vaccine is subject to state laws wherever applicable.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

CLONEVAC D-78®

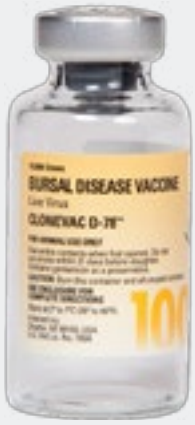
Bursal Disease Vaccine

(Live Virus)

For the vaccination of chickens at 1 day of age or older by coarse spray application for the prevention of infectious bursal disease (IBD). It may also serve as a live virus primer of replacement pullets for subsequent vaccination with inactivated IBD vaccine.

ADVANTAGES:

- D-78 strain of IBD virus is derived from a natural field strain; it has not been attenuated by tissue culture or egg passage
- Capable of overcoming moderate levels of maternal antibody to induce strong, early protection
- Produces minimal damage to the bursa
- Safe to use in chickens at 1 day of age



Clonevac D-78® is a lyophilized live, cloned intermediate vaccine for the control of IBD in young chickens. It is approved for use in chickens 1 day of age or older via coarse spray application or 2 weeks of age or older via drinking water.

10 x 10,000 doses

MERCK Animal Health

PRODUCT BULLETIN

CLONEVAC D-78®

Bursal Disease Vaccine

(Live Virus)

For Animal Use Only.

Description

Clonevac D-78® contains an intermediate strain of infectious bursal disease (IBD) virus propagated in specific-pathogen-free (SPF) substrates. This strain was developed from a bursal disease field isolate.

Indications for Use

Clonevac D-78, a live virus vaccine, is indicated for initial vaccination of healthy chickens 2 weeks of age or older via drinking water or 1 day of age or older via coarse spray for the prevention of IBD – also known as Gumboro disease. The vaccine may also be used for priming of breeder replacement pullets. If chickens are vaccinated earlier than 2 weeks of age, revaccination at 4 weeks may be indicated for optimum protection.

Vaccination Programs

Immune status, general health, and field exposure to IBD virus must be assessed to develop an effective program. Immunological priming of breeder replacement chickens can be accomplished at 10 to 12 weeks of age, followed by the use of an inactivated vaccine at 18-20 weeks of age.

Preparation of Vaccine

FOR DRINKING WATER OR COARSE SPRAY USE

DO NOT OPEN AND MIX THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE VACCINE IMMEDIATELY AFTER MIXING.

1. Remove the tear-off seal and stopper from the vial containing the dried vaccine.
2. Carefully pour clean, cool, non-chlorinated tap water into vial until the vial is approximately 2/3 full.
3. Insert the rubber stopper and shake vigorously until all material is dissolved.
4. The vaccine is now ready for use in accordance with directions below. For the best results, be sure to follow directions carefully!

Drinking Water Administration

FOR CHICKENS 2 WEEKS OF AGE OR OLDER

1. Do not use any disinfectants in the drinking water 48 hours before vaccinating and for 24 hours after vaccination.
2. Withhold the water from the chickens until they are thirsty. Withholding periods will vary from 2 to 12 hours according to age of chickens and climatic conditions.
3. Scrub waterers and rinse thoroughly with fresh, clean water. Do not use disinfectants for cleaning the waterers.
4. Rehydrate the vaccine as directed above.
5. Mix rehydrated vaccine with clean, cool, non-chlorinated tap water in accordance with the following chart:

Age of Chickens	Water Per 1,000 Doses Vaccine
2-4 weeks	6 Gal. (23 liters)
4-8 weeks	10 Gal. (38 liters)
8 weeks or older	16 Gal. (60 liters)

6. As an aid in preserving the virus, 3.2 ounces (85 ml) of non-fat powdered milk may be added with each 10 gallons of water used for mixing vaccine. Add the dried milk first and mix until dissolved. Then add the rehydrated vaccine from the vial and mix thoroughly.
7. Distribute the vaccine solution, as prepared above, among the waterers provided for the chickens. Avoid placing waterers in direct sunlight.
8. Provide no other drinking water until all the vaccine-water solution has been consumed.

Coarse Spray Vaccination

FOR CHICKENS 1 DAY OF AGE OR OLDER

1. Use rehydrated vaccine as indicated for specific coarse spray vaccination machine. For example, a sprayer which dispenses 20 ml to 100 chickens; – total volume for 2500 doses is 500 ml, and 10,000 doses is 2000 ml of deionized water. Mix thoroughly.
2. Add the prepared vaccine solution to reservoir on the sprayer.
3. Prime and adjust sprayer as instructed in manual accompanying the specific machine.

Caution

1. VACCINATE ONLY HEALTHY CHICKENS. Although disease may not be evident, coccidiosis, mycoplasma infection, Marek's disease, and other disease conditions may cause complications or reduce immunity.
2. All susceptible chickens on the same premises should be vaccinated at the same time.
3. Efforts should be taken to reduce stress conditions at the time of vaccination and during the reaction period.
4. Do not spill or splash the vaccine.
5. Do not dilute the vaccine or otherwise stretch the dosage.
6. Use entire contents when first opened.
7. Do not vaccinate within 21 days before slaughter.
8. Burn this container and all unused contents.
9. This vaccine contains gentamicin as a preservative.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Merck Animal Health, and USDA requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of individual chickens, and the degree of field exposure. Therefore, directions should be followed carefully.

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE BETWEEN 2 AND 7°C (35 AND 45°F).

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

US/CLN/0916/0001

PRODUCT BULLETIN

UNIVAX® PLUS

Bursal Disease Vaccine

(A Blend of a Tissue Culture Intermediate Strain and a Chick Embryo Origin Intermediate Strain, Live Virus)

For vaccination of healthy chickens 2 weeks of age or older as an aid in preventing infectious bursal disease (IBD) caused by standard and variant bursal disease viruses.

ADVANTAGES:

- Contains 2 specially selected intermediate IBD strains, each of which is plaque purified for specificity and consistency
- The combined strains provide broad-spectrum protection against a wide variety of economically significant field strains of standard and variant bursal disease viruses
- Produces broad protection against standard and variant IBD strains without destroying future immunization capabilities
- Highly antigenic
- Mild reacting, safe for use in broilers, pullets, breeders

Univax® Plus is a live virus vaccine containing a blend of 2 carefully selected intermediate strains of bursal disease viruses. The first strain (ST-12) is grown in tissue culture and the other (A-51) is grown in chicken embryos. Both strains are combined with stabilizing agents. The product is supplied as a lyophilized vaccine contained in sealed vials.

For use in chickens at 2 weeks of age or older by drinking water as an aid in preventing IBD.

10 x 5,000 doses

MERCK Animal Health

PRODUCT BULLETIN

UNIVAX® PLUS

Bursal Disease Vaccine

(A Blend of a Tissue Culture Intermediate Strain and a Chick Embryo Origin Intermediate Strain, Live Virus)

For Animal Use Only.

Description

Univax® Plus is a live virus vaccine containing a blend of 2 carefully selected intermediate strains of bursal disease viruses. The first strain (ST-12) is grown in tissue culture and the other (A-51) is grown in chicken embryos. Both strains are combined with stabilizing agents. The product is supplied as a lyophilized vaccine contained in vials sealed under vacuum. For use in chickens at 2 weeks of age or older by drinking water as an aid in preventing infectious bursal disease.

Indications for Use

Vaccinate by drinking water at 2 weeks of age or older. Good management practices should be followed to reduce exposure of birds to virulent infectious bursal disease virus during the first weeks of life.

Vaccination Programs

The development of a durable, strong protection depends upon the use of an effective vaccination program as well as many circumstances such as administration techniques, environment and flock health at the time of vaccination. Also the immune response to 1 vaccination under field conditions is seldom complete for all animals within a given flock. Even when vaccination is successful, the protection stimulated in individual animals against different diseases may not be lifelong. Therefore, under certain circumstances revaccination may be necessary.

Preparation of the Vaccine

DRINKING WATER METHOD

1. Assemble the vaccine and equipment needed to vaccinate the entire flock at one time.
2. Do not open and mix the vaccine until ready for use.
3. Remove the tear-off aluminum seal from the vaccine vial without disturbing the rubber stopper.
4. Use cool, clean, non-chlorinated tap water to which powdered milk has been added as directed under HOW TO VACCINATE.
5. Holding vial submerged in a pail of water or under a running stream of water, lift the lip of the rubber stopper so that the water (milk added) is sucked into the vial.
6. Reseat the stopper and shake the vial to thoroughly dissolve the vaccine.

How to Vaccinate

BY DRINKING WATER METHOD

Do not mix the vaccine into the drinking water until ready for use. Drinking water for vaccination should be mixed with powdered milk to prevent inactivation from chlorine or other water additives and also to stabilize the vaccine virus. The powdered milk should be added to the water at the rate of 3 grams per 11 liters (1 heaped teaspoon per 3 U.S. gallons); or 90 grams per 300 liters (1 heaped cupful per 80 U.S. gallons). Withhold water for a couple of hours before vaccinating so the birds are thirsty. Thoroughly clean and rinse all watering containers so that no residual disinfectants remain. Dilute the vaccine immediately before use with cool, clean, non-chlorinated water (milk added). Pour the dissolved vaccine material into the following amounts of water and mix thoroughly.

Each 1000 Birds	U.S. Gallons	Metric Liters
2 to 4 Weeks	2.5	10
4 to 8 Weeks	5	20
Over 8 Weeks	10	40

Distribute diluted vaccine so that all birds are able to drink within a 1 hour period and do not add any more water until the vaccine is consumed. Avoid placing water in direct sunlight.

Caution

1. For use by drinking water in birds 2 weeks or older.
2. All birds within a house should be vaccinated on the same day. Isolate other susceptible birds on the premises from the birds being vaccinated.
3. Vaccinate only healthy birds. Although disease may not be evident, coccidiosis, chronic respiratory disease, *Mycoplasma* infection, lymphoid leukosis, Marek's disease, or other disease conditions may cause serious complications or reduce protection.
4. In outbreak situations, vaccinate healthy birds first, progressing toward outbreak areas in order to vaccinate diseased birds last.
5. Do not spill or spatter the vaccine. Use entire contents of vial when first opened. Burn empty bottles, caps and all unused vaccine and accessories.
6. Wash hands thoroughly after using the vaccine.
7. Do not dilute the vaccine or otherwise stretch the dosage.
8. Store at 2° to 7° C (35° to 45° F).
9. Do not vaccinate within 21 days before slaughter.
10. Use only in states (U.S.) where permitted and on premises with a history of bursal disease.

Notice

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine type, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and location of the birds; names of operators performing the vaccination and any observed reactions.

This vaccine contains gentamicin as a preservative. The use of this vaccine is subject to state laws wherever applicable.

Contact our sales or technical services representatives to help design a custom vaccination program.

US/UNP/0916/0001

MERCK Animal Health

PRODUCT BULLETIN

BURSA-VAC®

Bursal Disease Vaccine

(Live Virus)

For vaccination of healthy chickens 7 to 14 days of age, as an aid in the prevention of infectious bursal disease (IBD) and to maximize response to subsequent inactivated IBD vaccines.

ADVANTAGES:

- Stimulates stronger immune response than intermediate IBD vaccines
- Ensures maximum response to vaccination with inactivated IBD vaccines
- An essential component of a broiler breeder vaccination program when high parental IBD titers are desired in the progeny

Bursa-Vac® vaccine is a live virus vaccine of chicken embryo origin containing a classic strain of infectious bursal virus. It induces a strong immune response and ensures maximum response to vaccination with inactivated IBD vaccines.

10 x 1,000 doses
10 x 2,500 doses
10 x 5,000 doses

MERCK Animal Health

PRODUCT BULLETIN

BURSA-VAC®

Bursal Disease Vaccine

(Live Virus)

For Animal Use Only.

READ FULL DIRECTIONS CAREFULLY. Use entire contents when first opened. Do not vaccinate within 21 days before slaughter. Store vaccine in refrigerator at 2-7C° (35-45°F). Gentamicin is added as a preservative. CAUTION: Burn containers and all unused contents.

Description

This product contains an attenuated strain of bursal disease (IBD) virus to aid in the prevention of infectious bursal disease.

Indications for Use

For vaccination of healthy chickens 7-14 days of age by drinking water administration to aid in the prevention of infectious bursal disease.

Vaccination Programs

Many factors must be considered in determining the vaccination program for a particular farm or poultry operation. To be fully effective, the vaccine must be administered to healthy receptive birds held in proper environment under good management. In addition, the response may be modified by the age of the birds and their immune status. Seldom does 1 vaccination under field conditions produce complete protection for all individuals in a given flock. The amount of protection required will vary with the type of operation and the degree of exposure that a flock is likely to encounter.

Precautions

ONLY VACCINATE HEALTHY BIRDS

Consult your poultry pathologist for further recommendations based on conditions existing in your area at any given time.

Rehydration of the Vaccine

DO NOT OPEN AND MIX THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE VACCINE IMMEDIATELY AFTER MIXING.

1. Tear off the aluminum seal from the vial containing the dried vaccine.
2. Lift off the rubber stopper.
3. Pour clean, cool non-chlorinated water into the vaccine vial until the vial is approximately 2/3 full.
4. Replace the rubber stopper and shake vigorously until all material is dissolved.
5. The vaccine is now ready for drinking water use in accordance with directions below.

Drinking Water Administration

FOR CHICKENS 7-14 DAYS OF AGE

1. Remove all medication, sanitizers and disinfectants from the drinking water, preferably 72 hours before vaccinating and 24 hours following vaccination.
2. Provide enough watering space so that at least 2/3 of the birds can drink at one time.
3. Scrub waterers thoroughly and rinse with fresh, clean water.
4. Withhold water for 2 hours before vaccinating to stimulate thirst.
5. Rehydrate the vaccine as directed above.
6. Add rehydrated vaccine to clean, cool non-chlorinated water at a sufficient volume to last at least 2 hours at current flock water consumption rates.
7. Distribute the vaccine solution as prepared above, among the waterers provided for the birds. Avoid placing waterers in direct sunlight.
8. Provide no other drinking water until all the vaccine treated water has been consumed.

Notice

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

US/BUR/0916/0001

PRODUCT BULLETIN

INNOVAX®-ND-IBD

Infectious Bursal Disease - Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For *in ovo* vaccination of 18 day old chicken embryos and subcutaneous vaccination of day old chickens to provide protection against Marek's disease, Newcastle disease, standard and variant infectious bursal disease.

ADVANTAGES:*

- Provides protection for virulent ND, IBD and Marek's disease
- Offers effective protection in the face of ND virus maternal antibodies
- Replaces a conventional live ND vaccination program in the absence of exotic ND
- Removes the potential for respiratory reactions due to live ND vaccines
- No vaccine reactions observed in safety trials for improved bird performance
- Offers flexible administration via *in ovo* or subcutaneous injection to fit any vaccination schedule
- Shown to be effective against standard and variant infectious bursal disease challenge

Innovax®-ND-IBD is a frozen, live, cell-associated Marek's, ND and IBD vaccine. It provides proven protection against Marek's, virulent ND virus, and both standard and variant strains of IBD. It is approved for *in ovo* injection of 18 day embryonated eggs and subcutaneous vaccination of day old chickens.

4,000 dose ampules

*Data on file, Merck Animal Health

MERCK Animal Health

MERCK Animal Health

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PRODUCT BULLETIN

INNOVAX®-ND-IBD

Infectious Bursal Disease - Marek's Disease - Newcastle Disease Vaccine

(Serotype 3, Live Marek's Disease Vector)

For Animal Use Only.

Description

This vaccine is a frozen, cell associated, live virus vaccine that contains the recombinant serotype 3 turkey herpesvirus with the F gene from Newcastle disease virus and with the VP2 gene from infectious bursal disease virus. The vaccine is packaged in glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

This vaccine has been shown to be effective for the vaccination of healthy 18 day-old chicken embryos or one-day-old chickens against Marek's disease, Newcastle disease, standard and variant infectious bursal disease. Duration of immunity has not been established. For more information regarding efficacy and safety data, go to productdata.aphis.usda.gov.

Important: Storage Conditions

AMPULES - Store in liquid nitrogen container.
DILUENT - Do not freeze.
CONTAINER - Store liquid nitrogen container securely in upright position in a dry, well ventilated area and away from incubator intakes and chicken boxes.

Safety Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions and safe practices for liquefied atmospheric gases (particularly liquid nitrogen).

When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen. All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly; then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately.

Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation of Vaccine

CAUTION: READ ABOVE SAFETY PRECAUTIONS ON HANDLING VACCINE AMPULE. AMPULES HAVE BEEN KNOWN TO EXPLODE ON SUDDEN TEMPERATURE CHANGES. DO NOT THAW IN HOT OR ICE COLD WATER. STERILIZE VACCINATING EQUIPMENT BY BOILING IN WATER FOR 30 MINUTES OR BY AUTOCLAVING 20 MINUTES AT 121°C (250°F). DO NOT USE CHEMICAL DISINFECTANTS.

1. Before withdrawing vaccine from liquid nitrogen canister, protect hands with gloves, wear long sleeves and use a facemask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
2. When withdrawing a cane of ampules from canister in liquid nitrogen container, expose only the ampule to be used immediately. We recommend handling only one ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
3. The contents of the ampule are thawed rapidly by immersing in a container of clean water at a temperature range of 20-30°C (68-86°F). Gently swirl the ampule to disperse contents. Then break ampule at its neck and immediately proceed as below.
4. Dilute the vaccine for administration. Use 100 ml sterile diluent for each 1,000 doses of vaccine to administer 0.1 ml dose per chicken embryo or use 50 ml for each 1,000 doses of vaccine to administer 0.05 ml per chicken embryo by the *in ovo* route. Use 200 ml sterile diluent for each 1,000 doses of vaccine to administer 0.2 ml dose per chicken by the subcutaneous route.
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18 gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE 16-27°C (60-80°F) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent container. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container. Remove the syringe.
8. Fill the previously sterilized automatic syringe or egg inoculation machine according to the manufacturer's recommendations.
9. The vaccine is now ready for use.

Method of Vaccination

IN OVO ADMINISTRATION:

1. Inoculate each 18-day-old chicken embryo with a full dose (0.05 ml or 0.1ml).
2. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.
3. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

SUBCUTANEOUS ADMINISTRATION:

1. Hold the chicken by the back of the neck just below the head. The loose skin in the area is raised by gently pinching with the thumb and forefinger. Insert the needle beneath the skin in a downward direction away from the head. Inject 0.2 ml per chicken.
2. Avoid hitting the muscles and bones in the neck.
3. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Intervet Inc., U.S. and local regulatory requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure.

Caution

Good management practices are recommended to reduce exposure to Marek's disease and bursal disease for at least three weeks following vaccination. Therefore, directions should be followed carefully.

1. Do not mix any substance with this vaccine. Do not mix with other products, except as specified on this label.
2. Store vaccine in liquid nitrogen at a temperature below -150°C (-238°F).
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute or otherwise stretch the dosage of this vaccine.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chicken embryos or chickens should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains gentamicin as a preservative.
11. Inactivate unused contents before disposal.
12. In case of human exposure, contact a physician.
13. FOR ANIMAL USE ONLY.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE IN LIQUID NITROGEN.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

CAV-VAC®

Chicken Anemia Virus Vaccine

(Modified-Live Virus)

For the vaccination of breeder replacement chickens to provide protection against chicken infectious anemia in their progeny.

ADVANTAGES:

- First USDA licensed chicken anemia virus (CAV) vaccine
- Safe to use in young, antibody negative chickens
- Induces high levels of protective antibodies for long-term protection of parent flocks and their progeny against chicken infectious anemia
- Provides uniform flock protection
- Does not require addition of diluent

Cav-Vac® is a live virus vaccine prepared from a modified U.S. field isolate of CAV. It is approved for use in breeder pullets 10 weeks of age and older via the wing-web inoculation method.

10 x 1,000 doses

MERCK Animal Health

PRODUCT BULLETIN

CAV-VAC®

Chicken Anemia Virus Vaccine

(Modified-Live Virus)

For Animal Use Only.

Description

CAV-VAC® is a live virus vaccine, prepared from a modified U.S. field isolate. The vaccine is produced using specific-pathogen-free (SPF) substrates, and contains live chicken anemia vaccine virus suspended in wing-web diluent.

Indications for Use

CAV-VAC is indicated for the immunization of breeder chickens against chicken anemia virus to provide protection of progeny against clinical signs due to chicken infectious anemia. CAV-VAC should be administered one time to breeder chickens via the wing-web stick method from 10 to 12 weeks of age.
WARNING: USE OF THIS PRODUCT IN CHICKENS YOUNGER THAN 3 WEEKS OF AGE MAY CAUSE CLINICAL SIGNS OF CHICKEN ANEMIA. DO NOT VACCINATE BREEDER CHICKENS IN LAY.

Preparation of Vaccine

DO NOT OPEN THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE VACCINE IMMEDIATELY AFTER OPENING.

1. SHAKE WELL.
2. Remove the tear-off seal and stopper from the vaccine vial. Vaccine is now ready for use.

Wing-Web Administration

FOR CHICKENS FROM 10 TO 12 WEEKS OF AGE

1. Vaccine is applied to the web of the wing. Use the enclosed 2-pronged applicator.
2. Vaccinate by dipping the applicator in the vaccine mixture and stabbing the webbed portion of the wing from beneath. Avoid feathered areas of the web.
3. Periodically during use, re-insert stopper and shake vaccine well.

Caution

1. Do not vaccinate chickens in lay. Do not vaccinate within 21 days of slaughter.
2. VACCINATE ONLY HEALTHY CHICKENS. Although disease may not be evident, concurrent disease conditions may cause complications or reduce immunity.
3. All susceptible chickens on the same premises should be vaccinated at the same time.
4. Efforts should be taken to reduce stress conditions at the time of vaccination.
5. Do not spill or splash the vaccine.
6. Do not use less than 1 dose per bird.
7. Use entire contents when first opened.
8. Burn containers and all unused contents.
9. This vaccine contains gentamicin and amphotericin B as preservatives.
10. Following vaccination, virus may be shed in the feces. Thus, care should be taken to avoid spread of the vaccine virus to young chickens or to unexposed chickens in lay.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets the requirements of Merck Animal Health and the USDA. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure. Therefore, directions should be followed carefully.

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

Contact our sales or technical services representatives to help design a custom vaccination program.

US/CVC/0916/0001

MERCK Animal Health

PRODUCT BULLETIN

TREMVAC®-FP-CAV

Avian Encephalomyelitis - Fowl Pox & Chicken Anemia Virus Vaccine

(Live and Modified-Live Virus)

For the vaccination of chickens at 10 to 12 weeks of age against fowl pox and avian encephalomyelitis (AE) in breeders and chicken infectious anemia (CIA) in the progeny of breeder replacements.

ADVANTAGES:

- Excellent protection against infection with AE and fowl pox viruses
- The original Calnek strain of AE provides dependable immune response with consistent antibody titer
- Demonstrable efficacy with reliable development of “takes” at 7 days post-vaccination
- Induces high levels of protective antibodies for long-term protection of parent flocks and their progeny against CIA
- Provides uniform flock protection
- Combined product reduces vaccination costs

Tremvac®-FP-CAV is a lyophilized live vaccine for use in breeder pullets and egg layers to protect against clinical disease due to AE and fowl pox and to provide passive immunity against chicken anemia virus infection to the progeny of vaccinated breeders. It is approved for wing-web inoculation.

10 x 1,000 doses

MERCK Animal Health

PRODUCT BULLETIN

TREMVAC®-FP-CAV

Avian Encephalomyelitis - Fowl Pox & Chicken Anemia Virus Vaccine

(Live and Modified-Live Virus)

For Animal Use Only.

Description

Tremvac®-FP-CAV is a live virus vaccine containing avian encephalomyelitis (AE) virus prepared from the Calnek strain, a modified fowl pox virus, and chicken anemia virus prepared from a modified U.S. field isolate. The vaccine is packaged in 2 separate units. The first unit is a vial containing freeze-dried AE virus and fowl pox virus (Tremvac®-FP). The second is a vial containing chicken anemia virus suspension (CAV-VAC®) to be used as the wing-web diluent.

Indications for Use

This combination vaccine is indicated for the immunization of breeder chickens for prevention of disease due to AE virus and fowl pox virus. The chicken anemia virus portion prevents disease due to chicken infectious anemia in progeny of vaccinated breeders. Properly vaccinated chickens are protected throughout the laying cycle. The vaccine should be administered 1 time to breeder chickens via the wing-web stick method from 10 to 12 weeks of age.

WARNING: USE OF THIS PRODUCT IN CHICKENS YOUNGER THAN 3 WEEKS OF AGE MAY CAUSE CLINICAL SIGNS OF CHICKEN ANEMIA. DO NOT VACCINATE BREEDER CHICKENS IN LAY.

Preparation of Vaccine

DO NOT OPEN THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE VACCINE IMMEDIATELY AFTER OPENING.

1. Remove the tear-off seal and stopper from the vial containing the freeze-dried Tremvac-FP.
2. Remove the seal and stopper from the CAV-VAC vial.
3. Pour 1/2 of the CAV-VAC from the vial into Tremvac-FP vial. Insert the rubber stopper and shake until dissolved.
4. Pour the dissolved Tremvac-FP into the CAV-VAC vial. Re-insert the rubber stopper and shake well. The vaccine is now ready for use.

Wing-Web Administration

FOR CHICKENS FROM 10 TO 12 WEEKS OF AGE

1. Vaccine is applied to the web of the wing. Use the enclosed 2-pronged applicator.
2. Vaccinate by dipping the applicator in the vaccine mixture and stabbing the webbed portion of the wing from beneath. Avoid feathered areas of the web.
3. Periodically during use, re-insert stopper and shake vaccine well.
4. At about 7 to 10 days after vaccination, a few birds should be examined for takes. A good take reaction, indicating that a satisfactory vaccination job was done, shows swelling in the skin at the point of vaccination with scab formation. The scabs will fall off about 2 to 3 weeks following vaccination.

Caution

1. Do not vaccinate within 21 days of slaughter or 6 weeks prior to onset of or during lay.
2. VACCINATE ONLY HEALTHY CHICKENS. Although disease may not be evident, concurrent disease conditions may cause complications or reduce immunity.
3. All susceptible chickens on the same premises should be vaccinated at the same time.
4. Efforts should be taken to reduce stress conditions at the time of vaccination.
5. Do not spill or splash the vaccine.
6. Do not use less than 1 dose per bird.
7. Use entire contents when first opened.
8. Burn containers and all unused contents.
9. This vaccine contains gentamicin and amphotericin B as preservatives.
10. Following vaccination, virus may be shed in the feces. Thus, care should be taken to avoid spread of the vaccine virus to young chickens or to unexposed chickens in lay.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Merck Animal Health and USDA requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens and the degree of field exposure. Therefore, directions should be followed carefully.

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE BETWEEN 2 AND 7°C (35 AND 45°F).

Contact our sales or technical services representatives to help design a custom vaccination program.

US/TRF/0916/0001

MERCK Animal Health

PRODUCT BULLETIN

2177®

Tenosynovitis Vaccine

(Live Virus)

For the vaccination of chickens 1 day of age for the prevention of reovirus associated diseases.

ADVANTAGES:

- Safe for use in day of age broilers
- Natural non-pathogenic strain is not attenuated and cannot revert to virulence
- No interference with serotype 2 and serotype 3 Marek's disease vaccines
- Excellent protection against virulent challenge with reovirus
- Protection in the presence of maternal antibody

MERCK Animal Health

2177® is a patented, natural non-pathogenic 2177 strain of reovirus. This frozen vaccine is for use in broilers, broiler breeder replacements or pullets 1 day of age or older via subcutaneous injection for the prevention of reovirus diseases.

2,000 dose ampules

MERCK Animal Health

US/217/1116/0001

PRODUCT BULLETIN

2177®

Tenosynovitis Vaccine

(Live Virus)

For Animal Use Only.

READ FULL DIRECTIONS CAREFULLY.
Use entire contents when first opened.
Do not vaccinate within 21 days before slaughter.
CAUTION: Burn containers and all unused contents.

Description

2177® is a frozen, live virus vaccine that contains the 2177 strain of avian reovirus. 2177 is a naturally apathogenic avian reovirus originally isolated from commercial chickens. 2177 is packaged in 2,000 dose glass ampules and supplied with diluent packaged in a separate container. The vaccine ampules are inserted in metal canes, stored and shipped in a liquid nitrogen container.

Indications for Use

2177 is recommended for vaccination of healthy 1 day old chickens by subcutaneous injection for the prevention of tenosynovitis/viral arthritis.

Storage Conditions

AMPULES - Store in liquid nitrogen container.
DILUENT - Do not freeze.
CONTAINER - Store liquid nitrogen container securely in upright position in a dry, well-ventilated area and away from incubator intakes and chicken boxes.

Safety Precautions

Liquid nitrogen container and vaccine should be handled only by properly trained personnel who are thoroughly conversant with the Union Carbide publication and instruction booklet regarding the use of, precautions for, and safe practices for liquefied atmospheric gases (particularly liquid nitrogen). When removing ampule cane, handling frozen ampules, or adding liquid nitrogen, wear long sleeves, a plastic face shield and gloves to protect the skin from contact with the liquid nitrogen.

All storage and handling of the liquid nitrogen container must be in a dry, ventilated area. Do not inhale liquid nitrogen vapors. If drowsiness occurs, get fresh air quickly; then ventilate entire area. If breathing difficulty occurs, apply artificial respiration. If any of these difficulties persist or there is a loss of consciousness, summon a physician immediately. Care should be exercised to prevent contaminating your hands, eyes and clothing with the vaccine.

Preparation for Vaccine

CAUTION: READ ABOVE WARNING ADVICE ON HANDLING VACCINE AMPULE. STERILIZE VACCINATING EQUIPMENT BY BOILING IN WATER FOR 30 MINUTES OR BY AUTOCLAVING (20 minutes at 250°F or 121°C). DO NOT USE CHEMICAL DISINFECTANTS.

1. Use 2,000 doses of vaccine with 400 ml sterile diluent per 2,000 chickens when administering vaccine by the subcutaneous route.
2. Before withdrawing vaccine from liquid nitrogen canister, protect hands with gloves, wear long sleeves and use a face mask or goggles. It is possible an accident could occur with either the liquid nitrogen or the ampules of vaccine. When removing an ampule from the cane, hold palm of gloved hand away from body and face.
3. When withdrawing a cane of ampules from canister in liquid nitrogen container, expose only the ampule to be used immediately. We recommend handling only 1 ampule at a time. After removing the ampule from the cane, the remaining ampules should be replaced immediately in the canister of the liquid nitrogen container.
4. The contents of the ampule are thawed rapidly by immersing in water at room temperature. Shake ampule to disperse contents. Then break ampule at its neck and immediately proceed as below. Dilute the vaccine with diluent for administration. 2,000 doses of vaccine is added for each 400 ml of diluent. CAUTION: Ampules have been known to explode on sudden temperature changes. Do not thaw in hot or ice cold water.
5. Draw contents of ampule into a sterile 10 ml syringe, mounted with an 18-gauge needle.
6. Dilute immediately by filling the syringe slowly with a portion of the diluent. IMPORTANT: THE DILUENT SHOULD BE AT ROOM TEMPERATURE (60°-80°F or 16° 27°C) AT TIME OF MIXING.
7. The contents of the filled syringe are then added to remaining diluent. It is important that this be done slowly. Slowly empty the syringe, allowing the vaccine to run down the side of the diluent container. Gently agitate the container as the vaccine is being mixed. Withdraw a portion of the diluent with the syringe to flush ampule. Remove the remaining diluent from the ampule and inject gently into the diluent container Remove the syringe.
8. Fill the previously sterilized automatic syringe according to the manufacturer's recommendations.

Method of Vaccination

SUBCUTANEOUS ADMINISTRATION

1. Hold the chicken by the back of the neck just below the head. The loose skin in the area is raised by gently pinching with the thumb and forefinger. Insert the needle beneath the skin in a downward direction away from the head. Inject 0.2 ml per chicken.
2. Avoid hitting the muscles and bones in the neck.
3. Entire contents of container must be used within 1 hour after mixing or be discarded according to caution statement No. 11.
4. After reconstitution, the vaccine should be kept cool and gently agitated frequently.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Merck Animal Health and USDA requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure.

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Caution

It is recommended that good management practices be followed to reduce exposure to reovirus for at least 3 weeks following vaccination.

1. Do not mix any substance not approved by Merck Animal Health with this vaccine.
2. Store vaccine in liquid nitrogen at a temperature below -238°F or -150°C.
3. Gloves and visor should be worn when handling liquid nitrogen.
4. ONCE THAWED, THE PRODUCT SHOULD NOT BE REFROZEN.
5. Do not dilute or otherwise stretch the dosage of this vaccine.
6. Once mixed with diluent, the vaccine should be gently agitated frequently.
7. Once mixed with diluent, the vaccine should be used within 1 hour.
8. Only healthy chickens should be vaccinated.
9. Do not vaccinate within 21 days before slaughter.
10. This vaccine contains gentamicin as a preservative.
11. BURN THIS CONTAINER AND ALL UNUSED CONTENTS.

Records

Keep a record of vaccine, quantity, serial number, expiration date and place of purchase; the date and time of vaccination; the number, age, breed and location of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE IN LIQUID NITROGEN.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

ENTEROVAX®

Tenosynovitis (Viral Arthritis) Vaccine

(Modified-Live Virus)

For vaccination of healthy chickens as an aid in control and prevention of reovirus-induced tenosynovitis (viral arthritis) in broilers, roasters, and breeders.

ADVANTAGES:

- Provides strong immunity against viral arthritis (tenosynovitis) caused by reovirus
- SAFE. The mild-reacting strain will not cause lameness or mortality when used as directed
- Approved for coarse spray administration at day of age or by drinking water to birds 1 week of age or older
- Ideal for use in breeder replacement and broiler flocks carried to heavier weights

Enterovax® vaccine is a coarse spray and/or drinking water vaccine developed to aid in the prevention of viral arthritis (tenosynovitis) which causes serious leg problems and economic loss in broiler, roaster, and breeder flocks. It is ideal for use in flocks where birds are carried to heavier weights. May be safely administered to birds by coarse spray at day of age or by drinking water to birds 7 days of age or older, up to 21 days before slaughter.

10 x 1,000 doses

MERCK Animal Health

PRODUCT BULLETIN

ENTEROVAX®

Tenosynovitis (Viral Arthritis) Vaccine

(Modified-Live Virus)

For Animal Use Only.

Description

Enterovax® is a live vaccine containing an avian reovirus (tenosynovitis biotype) in a freeze-dried preparation sealed under vacuum. It is recommended for use in healthy chickens to aid in the prevention of reovirus induced tenosynovitis (viral arthritis) by spray or drinking water administration.

Indications for Use

Spray method – 1 day of age.
Water method – 1 week of age or older.

Vaccination Program

The development of a durable, strong protection to this disease depends upon the use of an effective vaccination program as well as many circumstances such as administration techniques, environment and flock health at the time of vaccination. Also, the immune response to 1 vaccination under field conditions is seldom complete for all animals within a given flock. Even when vaccination is successful, the protection stimulated in individual animals against different diseases may not be lifelong. Therefore, a program of periodic revaccination may be necessary.

Preparation of the Vaccine

DO NOT OPEN AND MIX THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE VACCINE IMMEDIATELY AFTER MIXING.

1. Remove the tear-off seal and stopper from the vial containing the lyophilized vaccine.
2. Carefully pour clean, cool, non-chlorinated tap water into the vaccine vial until the vial is approximately 2/3 full.
3. Insert the rubber stopper and shake vigorously until all material is dissolved.
4. The vaccine is now ready for drinking water or coarse spray use in accordance with the directions below. For best results, be sure to follow directions carefully.

How to Vaccinate

BY COARSE SPRAY:

Use this method for 1 day of age vaccination. Proper coarse spray application of this vaccine is best accomplished through use of a clean spray cabinet. Rehydrate the vaccine according to the above instructions "PREPARATION OF VACCINE."Further dilute each 1000 doses of vaccine to 70 mL, each 2500 doses of vaccine to 175 mL, or each 5000 doses to 350 mL using distilled water. Following the spray cabinet directions, adjust the cabinet so that 100 chicks are sprayed with 7 mL of the diluted vaccine over a 2 second period.

BY DRINKING WATER:

Do not mix the vaccine into the drinking water until ready for use. Drinking water for vaccination should be mixed with powdered milk to prevent inactivation from chlorine or other water additives and also to stabilize the vaccine virus. The powdered milk should be added to the water at the rate of 3 grams per 11 liters (1 heaped teaspoon per 3 U.S. gallons); or 90 grams per 300 liters (1 heaped cupful per 80 U.S. gallons).

Use only clean waterers and equipment free of disinfectants or sanitizers. All water must be withheld for at least 2 hours prior to vaccination to assure that all birds drink. Mix the rehydrated vaccine in the quantity of drinking water (milk added) which will be consumed by thirsty chickens in approximately 1 hour.
Add the rehydrated vaccine to water as follows:

Each 1000 Birds	U.S. Gallons	Metric Liters
1 Week or older	2.5	10

Distribute diluted vaccine so that all birds are able to drink within one hour. The diluted vaccine should be the sole source of drinking water until completely consumed. Avoid placing water in direct sunlight.

Caution

DO NOT OPEN AND MIX THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE VACCINE IMMEDIATELY AFTER MIXING.

1. Vaccinate only healthy birds.
2. Do not spill or spatter the vaccine. Burn empty bottles, caps and all unused vaccine and accessories. Use entire contents of vial when first opened.
3. Wash hands thoroughly after using the vaccine.
4. Store at 2° to 7° C (35° to 45° F). Do not freeze.
5. Do not vaccinate within 21 days of slaughter.
6. Do not administer this product by injection. Studies have demonstrated that injection will produce significant mortality in day of age birds.
7. Do not administer using an automatic eyedrop vaccinator (e.g. Biojecter-Plus) to day of age birds.
8. Do not administer this product to breeders 18 weeks of age or older. Studies have demonstrated that the vaccine virus will be shed in the eggs.

Records

Keep a record of vaccine type, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and location of the birds; names of operators performing the vaccination and any observed reactions.

Notice

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573. This vaccine contains gentamicin as a preservative.

Contact our sales or technical services representatives to help design a custom vaccination program.

US/ENT/1116/0001

MERCK Animal Health

PRODUCT BULLETIN

TENO-VAXIN™

Tenosynovitis (Viral Arthritis) Vaccine

(Live Virus)

For vaccination of healthy chickens 10 to 17 weeks of age as an aid in the prevention of reovirus-induced tenosynovitis (viral arthritis) in broiler breeders.

ADVANTAGES:

- Stimulates strong immune response against reovirus infection
- Ensures maximum response to revaccination with inactivated reovirus vaccines
- Ability to spread bird-to-bird ensures uniform flock protection

Teno-Vaxin™ vaccine is a live virus vaccine of chicken embryo origin prepared from the S-1133 strain of reovirus. It is for vaccination of replacement chickens at 10 to 17 weeks of age to stimulate strong immunity and ensure maximum response to inactivated reovirus vaccines.

10 x 1,000 doses

MERCK Animal Health

PRODUCT BULLETIN

TENO-VAXIN™

Tenosynovitis (Viral Arthritis) Vaccine

(Live Virus)

For Animal Use Only.

Description

This product contains a modified live strain S-1133 of tenosynovitis virus grown in chicken embryos, to aid in the prevention of infectious tenosynovitis.

Indications for Use

For vaccination of healthy chickens between 10 and 17 weeks of age by drinking water administration to aid in prevention of infectious tenosynovitis.

Vaccination Programs

Many factors must be considered in determining the vaccination program for a particular farm or poultry operation. To be fully effective, the vaccine must be administered to healthy receptive birds held in proper environment under good management. In addition, the response may be modified by the age of the birds and their immune status. Seldom does 1 vaccination under field conditions produce complete protection for all individuals in a given flock. The amount of protection required will vary with the type of operation and the degree of exposure that a flock is likely to encounter. For these reasons a program of periodic revaccination may be required.

Precautions

ONLY VACCINATE HEALTHY BIRDS: Consult your poultry pathologist for further recommendations based on conditions existing in your area at any given time.
CAUTION: Use only in states where permitted. Do not use on premises where other susceptible chickens are maintained. Do not add vaccinates to premises with susceptible chickens. Do not vaccinate chickens in production.
Use entire contents when first opened.
Do not vaccinate within 21 days before slaughter.
Store vaccine at 2-7°C (35-45°F).
Gentamicin is added as a preservative.
CAUTION: Burn containers and all unused contents.

Rehydration of the Vaccine

DO NOT OPEN AND MIX THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE VACCINE IMMEDIATELY AFTER MIXING.

1. Tear off the aluminum seal from the vial containing the dried vaccine.
2. Lift off the rubber stopper.
3. Pour clean, cool non-chlorinated water into the vaccine vial until the vial is approximately 2/3 full.
4. Replace the rubber stopper and shake vigorously until all material is dissolved.
5. The vaccine is now ready for drinking water use in accordance with directions above.

Drinking Water Administration

FOR CHICKENS BETWEEN 10 AND 17 WEEKS OF AGE

1. Remove all medication, sanitizers and disinfectants from the drinking water, preferably 72 hours before vaccinating and 24 hours following vaccination.
2. Provide enough watering space so that at least 2/3 of the birds can drink at 1 time.
3. Scrub waterers thoroughly and rinse with fresh, clean water.
4. Withhold water for 2 hours before vaccinating to stimulate thirst.
5. Rehydrate the vaccine as directed above.
6. Add rehydrated vaccine to clean, cool non-chlorinated water at a sufficient volume to last 1.5 to 2 hours at current flock water consumption rates.
7. Distribute the vaccine solution as prepared above, among the waterers provided for the birds. Avoid placing waterers in direct sunlight.
8. Provide no other drinking water until all the vaccine treated water has been consumed.

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Contact our sales or technical services representatives to help design a custom vaccination program.

US/TNV/0916/0001

MERCK Animal Health

PRODUCT BULLETIN

BREEDERVAC REO-PLUS®

Bursal Disease-Reovirus Vaccine

(Standard and Variant, Killed Virus)

For the vaccination of healthy chickens 3 weeks of age or older against infectious bursal disease (IBD) (caused by Standard, Delaware A and E and GLS virus strains) and diseases caused by avian reoviruses.

ADVANTAGES:

- Contains a broad range of inactivated standard and bursal-derived variant IBD virus and reovirus strains:
  - Induces high, uniform antibodies against IBD and reovirus throughout the entire production cycle
  - Induces enhanced protection against Delaware variant IBD virus with bursal-derived antigen
  - Provides excellent protection against reovirus associated disease (including tenosynovitis and malabsorption)

Breedervac Reo-Plus® is an inactivated oil adjuvant emulsion vaccine for use in breeder pullets for the control of IBD virus and reovirus infections. It provides broad-spectrum protection for IBD and reovirus. It is approved for subcutaneous and intramuscular injection.

1 x 1,000 doses

MERCK Animal Health

PRODUCT BULLETIN

BREEDERVAC REO-PLUS®

Bursal Disease-Reovirus Vaccine

(Standard and Variant, Killed Virus)

For Animal Use Only.

Description

Breedervac Reo-Plus® is prepared using specific-pathogen-free (SPF) or approved substrates and contains Standard, GLS, and Delaware (A and E) strains of infectious bursal disease (IBD) virus, and 2 strains of avian reovirus (1733 and 2408) inactivated and suspended in the aqueous phase of an oil adjuvant emulsion.

Indications for Use

Breedervac Reo-Plus is indicated for the vaccination of breeder replacement chickens against IBD (Standard, Delaware and GLS variants) and disease caused by avian reoviruses. The IBD fraction is used primarily for early protection of progeny with maternal antibodies, and the reovirus fraction is used to protect the breeder hen against tenosynovitis and the progeny against malabsorption.

Chickens should be in good health when vaccinated. Sick or weak chickens will not develop adequate immunity. The use of any inactivated vaccine may cause false positive results on *Mycoplasma* plate tests. Avoid *Mycoplasma* testing prior to 10 weeks post vaccination.

Dosage and Administration

Allow the vaccine to reach ambient temperature, 16-27°C (60-80°F), before use and shake vigorously before and periodically during use. Inject 0.5 ml intramuscularly or subcutaneously in chickens at least 3 weeks old, using an 18-gauge x 1/2" or 1/4" needle.

Vaccination Programs

Although this vaccine can be used for primary vaccination at 3 weeks of age or older, available evidence suggests that the best protection is obtained when it is used for revaccination of chickens previously immunized (primed) with the same type of live virus vaccines. Do not administer this vaccine during the critical egg laying period from onset until after peak production.
Examples: Breeder chickens.

Primary vaccination with modified live mild avian reovirus vaccine prior to 12 weeks of age.

Primary vaccination with live bursal disease vaccine prior to 12 weeks of age.

These primary vaccinations would then be followed by vaccination with Breedervac Reo-Plus, at 16-22 weeks of age. A minimum of 4 weeks should elapse between the last live virus priming and injection with Breedervac Reo-Plus. Local conditions must be taken into consideration and, where necessary, veterinary advice should be sought.

Precautions and Warnings

1. TO AVOID HUMAN INJECTION, EXTREME CAUTION SHOULD BE USED WHEN INJECTING ANY OIL EMULSION VACCINE. ACCIDENTAL HUMAN INJECTION MAY CAUSE SERIOUS LOCAL REACTIONS. CONTACT A PHYSICIAN IMMEDIATELY IF ACCIDENTAL HUMAN INJECTION OCCURS.
2. If it is desired to vaccinate birds during lay, a drop in egg production may occur.
3. Do not administer this vaccine during the critical egg laying period from onset until after peak production.
4. Vaccinate market chickens by subcutaneous route only.
5. Injection of inactivated vaccine into breast muscle may create processing plant problems under certain conditions.
6. Do not vaccinate chickens within 42 days before slaughter.
7. Do not mix this vaccine with any other substances.
8. Use entire contents when first opened.
9. Ensure that vaccination equipment is clean and sterile before use.
10. Do not use vaccination equipment with rubber parts, as the oil emulsion may attack certain types of rubber.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Merck Animal Health and USDA requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure. Therefore, directions should be followed carefully.

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, quantity, serial number, expiration date, place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE BETWEEN 2 AND 7°C (35 AND 45°F). DO NOT FREEZE.

Contact our sales or technical services representatives to help design a custom vaccination program.

US/BRP/0916/0001

MERCK Animal Health

PRODUCT BULLETIN

BREEDERVAC-IV-PLUS®

Bursal Disease-Newcastle Disease, Bronchitis and Reovirus Vaccine

(Standard and Variant, Massachusetts Type, Killed Virus)

For the vaccination of healthy chickens 3 weeks of age or older against infectious bursal disease (IBD) virus (caused by Standard, Delaware A and E and GLS virus strains) and diseases caused by avian reoviruses, Newcastle disease (ND) virus, or Massachusetts type infectious bronchitis (IB) virus.

ADVANTAGES:

- Contains a broad range of inactivated standard and bursal-derived variant IBD and reovirus strains:
  - Induces high, uniform antibodies against IBD, ND, IB and reoviruses throughout the entire production cycle
  - Requires a small 1/2 mL dose
  - Contains exclusive immunostimulant, safe, stable oil adjuvant

Breedervac-IV-Plus® is an inactivated oil adjuvant emulsion vaccine for use in breeder pullets against IBD, ND, IB and reovirus-related disease. It provides broad-spectrum protection for IBD and reovirus protection available, and solid protection against ND and Massachusetts type IB. It is approved for subcutaneous and intramuscular injection.

1 x 1,000 doses

MERCK Animal Health

PRODUCT BULLETIN

BREEDERVAC-IV-PLUS®

Bursal Disease-Newcastle Disease, Bronchitis and Reovirus Vaccine

(Standard and Variant, Massachusetts Type, Killed Virus)

For Animal Use Only.

Description

Breedervac-IV-Plus® is prepared using specific-pathogen-free (SPF) or approved substrates and contains Newcastle disease (ND) virus, Massachusetts type infectious bronchitis disease (IB) virus, 2 strains of avian reovirus (1733 and 2408), and Standard, GLS, and Delaware (A and E) strains of infectious bursal disease (IBD) virus, inactivated and suspended in the aqueous phase of an oil adjuvant emulsion.

Indications for Use

Breedervac-IV-Plus is indicated for the vaccination of breeder replacement chickens against Newcastle disease, IBD (Standard, Delaware and GLS variants), Massachusetts type IB and diseases caused by avian reoviruses. The Newcastle and bronchitis fractions of Breedervac-IV-Plus are used primarily for protection of the breeder hen. The IBD fraction is used primarily for early protection of progeny with maternal antibodies, and the reovirus fraction is used to protect the breeder hen against tenosynovitis and the progeny against malabsorption. Chickens should be in good health when vaccinated. Sick or weak chickens will not develop adequate immunity.

The use of any inactivated vaccine may cause false positive results on *Mycoplasma* plate tests. Avoid *Mycoplasma* testing prior to 10 weeks post-vaccination.

Dosage and Administration

Allow the vaccine to reach ambient temperature, 16-27°C (60-80°F), before use and shake vigorously before and periodically during use. Inject 0.5 ml intramuscularly or subcutaneously in chickens at least 3 weeks old, using an 18-gauge x 1/2" or 1/4" needle.

Vaccination Program

Although this vaccine can be used for primary vaccination at 3 weeks of age or older, available evidence suggests that the best protection is obtained when it is used for revaccination of chickens previously immunized (primed) with the same type of live virus vaccines. Do not administer this vaccine during the critical egg laying period from onset until after peak production.
Example: Breeder chickens

Primary vaccination with modified live mild avian reovirus vaccine prior to 12 weeks of age.

Primary vaccination with live bursal disease vaccine prior to 12 weeks of age.

Primary vaccination with live Newcastle and bronchitis vaccines on at least 2 occasions prior to 12 weeks of age.

These primary vaccinations would then be followed by vaccination with Breedervac-IV-Plus at 16-22 weeks of age. A minimum of 4 weeks should elapse between the last live virus priming and injection with Breedervac-IV-Plus. Local conditions must be taken into consideration and, where necessary, veterinary advice should be sought.

Immunity

It is evident that for optimal protection, preceding vaccination with live vaccines (priming) should have taken place. Generally, in flocks vaccinated with Breedervac-IV-Plus, a protective level of immunity will be achieved with only small variations between individual chickens. Revaccination during molt is recommended.

Vaccination Reaction

This vaccine does not provoke clinical reactions in chickens. If shock is observed, this must usually be ascribed to the stress of handling.

Storage Conditions

Store in the dark in a refrigerator between 2-7°C (35-45°F). DO NOT FREEZE OR EXPOSE TO DIRECT SUNLIGHT.

Precautions and Warnings

TO AVOID HUMAN INJECTION, EXTREME CAUTION SHOULD BE USED WHEN INJECTING ANY OIL EMULSION VACCINE. ACCIDENTAL HUMAN INJECTION MAY CAUSE SERIOUS LOCAL REACTIONS. CONTACT A PHYSICIAN IMMEDIATELY IF ACCIDENTAL HUMAN INJECTION OCCURS.

1. If it is desired to vaccinate birds during lay, a drop in egg production may occur.
2. Do not administer this vaccine during the critical egg laying period from onset until after peak production.
3. Vaccinate market chickens by subcutaneous route only.
4. Injection of inactivated vaccine into breast muscle may create processing plant problems under certain conditions.
5. Do not vaccinate chickens within 42 days before slaughter.
6. Do not mix this vaccine with any other substances.
7. Use entire contents when first opened.
8. Ensure that vaccination equipment is clean and sterile before use.
9. Do not use vaccination equipment with rubber parts, as the oil emulsion may attack certain types of rubber.

This vaccine has undergone rigid potency, safety and purity tests, and meets Merck Animal Health and USDA requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens, and the degree of field exposure. Therefore, directions should be followed carefully.

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Notice

Keep a record of vaccine, quantity, serial number, expiration date, place of purchase; the date and time of vaccination; the number, age, breed, and locations of chickens; names of operators performing the vaccination and any observed reactions.

STORE VACCINE BETWEEN 2 AND 7°C (35 AND 45°F). DO NOT FREEZE.

Contact our sales or technical services representatives to help design a custom vaccination program.

US/BRD/0916/0001

MERCK Animal Health

4.0 SPECIALTY & TURKEY VACCINES

PRODUCT BULLETIN

AVA-POX® CE

Fowl Pox Vaccine

(Live Virus, Chicken Embryo Origin)

For vaccination of healthy chickens and turkeys between 8 and 18 weeks of age as an aid in the prevention of fowl pox.

ADVANTAGES:

- Able to induce good takes and strong immunity
- Long duration of immunity
- Safe for chickens and turkeys

Ava-Pox® CE is a live virus vaccine of chick embryo origin containing a fowl pox virus selected for its ability to stimulate strong protection against fowl pox. This product is for use in chickens (via wing-web application) and turkeys (thigh-stab application) between 8 and 18 weeks of age.

10 x 1,000 doses

MERCK Animal Health

PRODUCT BULLETIN

AVA-POX®CE

Fowl Pox Vaccine

(Live Virus, Chicken Embryo Origin)

For Animal Use Only.

Description

Fowl pox vaccine is prepared from a strain of fowl pox virus that has the ability to give good takes and immunity in chickens and turkeys 8-18 weeks of age when applied by the wing-web method in chickens and thigh-stab application in turkeys. This pox vaccine is the one of choice for vaccinating birds to be kept for laying purposes. The vial of dried virus material contains stabilized fowl pox virus blended and ready for use according to the following directions.

Indications for Use

This vaccine is recommended for the wing-web vaccination of healthy chickens and thigh-stab vaccination of healthy turkeys at 8-18 weeks of age as an aid in the prevention of fowl pox.

Your Vaccination Program

Many factors must be considered in determining the proper vaccination program for a particular farm or poultry operation. To be fully effective, the vaccine must be administered to healthy receptive birds held in a proper environment under good management. In addition, the response may be modified by the age of the birds and their immune status. Seldom does 1 vaccination under field conditions produce complete protection for all individuals in a given flock. The amount of protection required will vary with the type of operation and the degree of exposure that a flock is likely to encounter.

Precautions

Consult your poultry pathologist for further recommendations based on conditions existing in your area at any given time. Birds should not be placed on contaminated premises. Exposure should be avoided immediately following vaccination, because it takes up to 10 days to develop resistance. All susceptible birds on the premises should be vaccinated at the same time. If this is not possible, then strict isolation and separate caretakers should be employed for non-vaccinated units. Efforts should be taken to reduce stress conditions at the time the vaccine is administered.

Rehydration of the Vaccine

DO NOT OPEN AND MIX THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE VACCINE IMMEDIATELY AFTER MIXING.

1. Tear off the aluminum seal from the vial containing the dried vaccine.
2. Lift off the rubber stopper.
3. Remove the aluminum seal from the vial of diluent.
4. Pour a small amount of diluent in the vial of dried vaccine.
5. Put back the rubber stopper and shake.
6. Pour the partly dissolved vaccine into the bottle containing the rest of the diluent.
7. Replace the rubber stopper and shake vigorously until all material is dissolved.

The vaccine is now ready for use by the following vaccination methods.

WING-WEB APPLICATION IN CHICKENS

1. Rehydrate the vaccine as directed above. Do not break off any of the needles on the applicator.
2. Hold the chicken and spread the underside of one wing outward.
3. Dip the applicator into the vaccine bottle, wetting both needles.
4. Pierce the web of the exposed wing with the charged applicator.
5. Re-dip the applicator in the vaccine vial and proceed to the next chicken.
6. Avoid hitting blood vessels, bones and the wing muscle.
7. Be careful not to touch any part of the bird with the vaccine except the area to be inoculated.
8. Examine and record takes (a small bump at the site of vaccination) 7-10 days following vaccination. Takes generally disappear 2 weeks following vaccination.

THIGH-STAB APPLICATION IN TURKEYS

1. Rehydrate the vaccine as directed above. Do not break off any of the needles on the applicator.
2. As an assistant holds the legs of the turkey with one hand and holds the bird's head downward with its back toward him, he then passes his other hand downward on the outside of one thigh, turning the feathers back and exposing a bare spot.
3. The vaccinator dips the applicator into the vaccine bottle and stabs into the thigh muscles.
4. Be careful not to pierce the tendons but go deep enough to break skin and deliver the vaccine.
5. Re-dip the applicator in the vaccine vial and proceed to the next bird.
6. Be careful not to touch any part of the bird with the vaccine except the area to be inoculated.
7. Examine and record takes (a small bump at the site of vaccination) 7–10 days following vaccination. Takes generally disappear 2 weeks following vaccination.

Notice

All Merck Animal Health vaccines released for sale meet the requirements of the licensing authority (U.S. Department of Agriculture) in regard to safety, purity, potency and the capacity to immunize normal, susceptible chickens and turkeys. This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Caution

The capacity of this vaccine to produce satisfactory results depends on many factors including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of individual animals and degree of field exposure. Therefore, directions for use should be followed carefully.

The use of this vaccine is subject to applicable state and federal laws and regulations.

Contact our sales or technical services representatives to help design a custom vaccination program.

US/AVP/0916/0001

MERCK Animal Health

PRODUCT BULLETIN

PP-VAC™

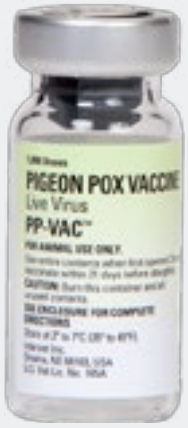
Pigeon Pox Vaccine

(Live Virus)

For vaccination of healthy chickens between 6 and 18 weeks of age as an aid in preventing fowl pox.

ADVANTAGES:*

- Mild pox vaccine for use in young birds
- Research has demonstrated that pigeon pox induces greater protection against variant pox viruses
- Has the ability to induce good takes and strong immunity



PP-VAC™ is a live virus vaccine of chicken embryo origin containing a special pigeon pox virus selected for its mild characteristics, as well as its ability to stimulate protection against fowl pox in chickens. This product is administered to chickens between 6 and 18 weeks of age via wing-web application.

10 x 1,000 doses

*Data on file, Merck Animal Health

MERCK Animal Health

PRODUCT BULLETIN

PP-VAC™

Pigeon Pox Vaccine

(Live Virus)

For Animal Use Only.

Description

This live virus vaccine is prepared from a proven strain of pigeon pox virus which was selected for its mildness and its protective characteristics against fowl pox in chickens. The virus has been propagated in specific-pathogen-free (SPF) substrates. The immunizing capability of this vaccine has also been proven by the Master Seed Immunogenicity Test.

Indications for Use

For vaccination of healthy chickens between 6 and 18 weeks of age by wing-web administration as an aid in the prevention of fowl pox.

Vaccination Programs

Many factors must be considered in determining the proper vaccination program for a particular farm or poultry operation. To be fully effective, the vaccine must be administered to healthy receptive chickens held in a proper environment under good management. In addition, the response may be modified by the age of the chickens and their immune status. Seldom does 1 vaccination under field conditions produce complete protection for all individuals in a given flock. The amount of protection required will vary with the type of operation and the degree of exposure that a flock is likely to encounter. For these reasons a program of periodic revaccination may be required.

Rehydration of the Vaccine

DO NOT OPEN AND MIX THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE VACCINE IMMEDIATELY AFTER MIXING.

1. Remove the tear-off seal and stopper from the vial containing vaccine and vial.
2. Remove the seal and stopper from the vial of 10 ml diluent.
3. Pour 1/2 of diluent from diluent vial into vial of vaccine. Insert the rubber stopper and shake until resuspended.
4. Pour resuspended vaccine into diluent vial. Add rubber stopper and shake well. Vaccine is now ready for use.

Wing-Web Administration

FOR CHICKENS BETWEEN 6 AND 18 WEEKS OF AGE

1. Vaccine is applied to the web of the wing. Use the enclosed 2-pronged applicator.
2. A dose of 0.01 ml should be administered to each bird by dipping the applicator in the vaccine mixture, allowing the applicator grooves to fill with liquid, and stabbing the webbed portion of the wing from beneath. Avoid feathered areas of the web.
3. At about 7 to 10 days after vaccination, a few birds should be examined for takes. A good take reaction, indicating that a satisfactory vaccination job was done, shows swelling in the skin at the point of vaccination with scab formation. The scabs will fall off about 2 to 3 weeks following vaccination. Good immunity is established 2 to 3 weeks after vaccination.

Caution

Consult your poultry pathologist for further recommendations based on conditions existing in your area at any given time.

1. VACCINATE ONLY HEALTHY CHICKENS. Although disease may not be evident, other disease conditions may cause complications or reduce immunity.
2. All susceptible chickens on the same premises should be vaccinated at the same time.
3. Use entire contents when first opened.
4. Do not vaccinate within 21 days before slaughter or 28 days prior to onset and during egg production.
5. Store at 2° to 7° C (35° to 45° F).
6. Burn containers and all unused contents.
7. This vaccine contains gentamicin as a preservative.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Intervet Inc., U.S. and local requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of individual chickens and the degree of field exposure. Therefore, directions should be followed carefully.

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine, quantity, serial number, expiration date and place of purchase; the date and time of vaccination; the number, age, breed and locations of chickens; names of operators performing the vaccination and any observed reactions.

Contact our sales or technical services representatives to help design a custom vaccination program.

US/PGP/0916/0001

MERCK Animal Health

PRODUCT BULLETIN

TREMVAC®-FP

Avian Encephalomyelitis - Fowl Pox Vaccine

(Live Virus)

For the immunization of chickens at 8 to 17 weeks of age against avian encephalomyelitis (AE) and fowl pox.

ADVANTAGES:*

- Protection against infection with AE and fowl pox viruses
- Both the AE virus and fowl pox virus are back passed in SPF chickens to ensure maximum potency
- The Calnek strain of AE provides dependable immune response with consistent antibody titer
- Demonstrable efficacy with reliable development of "takes" at 7 days post-vaccination
- Combined product reduces vaccination costs

Tremvac®-FP is a lyophilized live vaccine for use in breeder pullets and egg layers to protect against clinical disease due to AE and fowl pox. It is approved for wing-web inoculation.

10 x 1,000 doses

*Data on file, Merck Animal Health

MERCK Animal Health

PRODUCT BULLETIN

TREMVAC®-FP

Avian Encephalomyelitis - Fowl Pox Vaccine

(Live Virus)

For Animal Use Only.

Description

The avian encephalomyelitis (AE) portion of this vaccine is prepared from the tested and proven Calnek strain of AE virus which was back passaged through specific-pathogen-free (SPF) chickens to assure its full potential. The fowl pox portion of this vaccine is prepared from a proven strain of fowl pox virus which was back passed through SPF chickens to assure its full potential. The immunizing capability of this vaccine has been proven by the Master Seed Immunogenicity Test.

Indications for Use

This combination vaccine is indicated for the immunization of commercial layers, commercial layer breeders and broiler breeders against AE and fowl pox. This combination vaccine is indicated for immunization of chickens 8-17 weeks of age against AE and Fowl Pox via wing-web stick method.

Preparation of Vaccine

DO NOT OPEN AND MIX THE VACCINE UNTIL READY TO BEGIN VACCINATION. USE VACCINE IMMEDIATELY AFTER MIXING.

1. Remove the tear-off seal and stopper from the vaccine vial.
2. Remove the seal and stopper from the vial of 10 mL diluent.
3. Pour 1/2 of diluent from diluent vial into vial of vaccine. Insert the rubber stopper and shake until resuspended.
4. Pour resuspended vaccine into diluent vial. Add rubber stopper and shake well. Vaccine is now ready for use.

Wing-Web Administration

FOR CHICKENS FROM 8-17 WEEKS OF AGE

1. Vaccine is applied to the web of the wing. Use the enclosed 2-pronged applicator.
2. Vaccinate by dipping the applicator in the vaccine mixture and stabbing the webbed portion of the wing from beneath. Avoid feathered areas of the web.
3. At about 7 to 10 days after vaccination, a few birds should be examined for takes. A good take reaction, indicating that a satisfactory vaccination job was done, shows swelling in the skin at the point of vaccination with scab formation. The scabs will fall off about 2 to 3 weeks following vaccination. Good immunity is established 2 to 3 weeks after vaccination.

Caution

1. Do not vaccinate within 21 days of slaughter or 35 days prior to onset and during egg production.
2. VACCINATE ONLY HEALTHY CHICKENS. Although disease may not be evident, concurrent disease conditions may cause complications or reduce immunity.
3. All susceptible birds on the same premises should be vaccinated at the same time.
4. Efforts should be taken to reduce stress conditions at the time of vaccination.
5. Do not spill or splash the vaccine.
6. Do not use less than 1 dose per bird.
7. Use entire contents when first opened.
8. Burn containers and all unused contents.
9. This vaccine contains gentamicin as a preservative.

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Merck Animal Health and USDA requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of the individual chickens and the degree of field exposure. Therefore, directions should be followed carefully.

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

US/TRM/0916/0001

PRODUCT BULLETIN

M-NINEVAX®-C

Pasteurella multocida Vaccine

(Avian Isolate, Avirulent Live Culture)

For vaccination of healthy breeder and layer chickens and turkey breeders as an aid in the prevention of fowl cholera due to *Pasteurella multocida.*

ADVANTAGES:

- Strong protection against *P. multocida* serotype 1 (chickens) and serotype 3 (turkeys)
- Mild reactions for minimal stress
- **SAFE**. Avirulent live culture will not revert to virulence; will not cause mortality
- Specially formulated diluent provides excellent reconstitution stability

M-Ninevax®-C vaccine is a live bacterial vaccine containing the mild avirulent M-9 strain of *P. multocida*, Heddleston type 3-4 cross, in a freeze-dried preparation sealed under vacuum.

This vaccine strain has been shown to offer protection as an aid in the prevention of fowl cholera in chickens and turkeys. The seed culture used to make this vaccine has been laboratory tested for protection in chickens against challenge with *P. multocida* serotype 1 and in turkeys against challenge with *P. multocida* serotype 3.

10 x 1,000 doses

MERCK Animal Health

MERCK Animal Health

US/MNC/1116/0001

PRODUCT BULLETIN

M-NINEVAX®-C

Pasteurella multocida Vaccine

(Avian Isolate, Avirulent Live Culture)

For Animal Use Only.

Description

M-Ninevax®-C vaccine is a live bacterial vaccine containing the mild avirulent M-9 strain of *Pasteurella multocida*, Heddleston type 3-4 cross, in a freeze dried preparation sealed under vacuum. This vaccine strain has been shown to offer protection as an aid in the prevention of fowl cholera in chickens and turkeys. The seed culture used to make this vaccine has been laboratory tested for protection in chickens against challenge with the X-73 (type 1) strain of *P. multocida* and in turkeys against challenge with the P1059 (type 3) strain of *P. multocida*.

When to Vaccinate

BY WING-WEB

Chickens: Use by wing-web stab to vaccinate chickens 10-12 weeks of age and again at 18-20 weeks of age as an aid in the prevention of pasteurellosis (fowl cholera) due to *P. multocida* type 1. There should be at least 6 weeks and not more than 10 weeks between vaccinations.
Turkeys: Use by wing-web stab to vaccinate turkey breeders 15 weeks of age or older as an aid in the prevention of pasteurellosis (fowl cholera) due to *P. multocida* type 3. Birds should initially be wing-web vaccinated at 15-18 weeks of age and again 8 weeks later. Turkey breeders must be vaccinated at least twice with live fowl cholera vaccine via oral route prior to wing-web vaccination. The interval between the last oral vaccination and the first wing-web vaccination should not exceed 6 weeks. Additional wing-web vaccination every 6-8 weeks throughout the life of the bird may be required in areas of endemic exposure to fowl cholera.

BY DRINKING WATER

Turkeys: Best results are obtained when vaccine is administered initially to turkeys 6 to 8 weeks of age, followed by a booster dose 3 weeks later, and repeated every 4 to 6 weeks thereafter as necessary according to exposure conditions.

Your Vaccination Program

The development of a durable, strong protection to this disease depends upon the use of an effective vaccination program as well as many circumstances such as administration techniques, environment and flock health at the time of vaccination. Also, the immune response to 1 vaccination under field conditions is seldom complete for all animals within a given flock. Even when vaccination is successful, the protection stimulated in individual animals against different diseases may not be lifelong. Therefore, a program of periodic revaccination may be necessary.

Contraindications

FOR WING-WEB VACCINATION

Chickens: Initial vaccination in chickens over 12 weeks of age may be undesirable because larger granulomas may develop at the site of inoculation and this may result in downgrading of carcasses at slaughter.

Turkeys: Use of this vaccine in turkeys which have not been orally revaccinated may cause severe post-vaccination reactions, including lameness and death.

FOR DRINKING WATER VACCINATION

Turkeys: Must be healthy and free of environmental or physical stress at the time of vaccination. Initial vaccination with this vaccine should not be conducted in turkeys older than 12 weeks of age. Do not use this vaccine within 2 weeks before or 2 weeks after vaccinating turkeys with live virus Newcastle vaccine.

Preparation of Vaccine

FOR WING-WEB ROUTE OF ADMINISTRATION

1. Do not open and mix the vaccine until ready for use.
2. Mix only 1 vial at a time and use entire contents within 2 hours.
3. Remove the tear-off aluminum seal and stopper from vial containing the dried vaccine.
4. Remove the tear-off aluminum seal and stopper from the bottle containing the diluent.
5. Hold the diluent bottle firmly in an upright position and insert the shorter end of the transfer tube. Still holding the diluent bottle in an upright position, insert the neck of the vaccine vial over the longer end of the transfer tube. The vaccine vial should snap into position, connecting the 2 vials securely.
6. Invert the 2 containers so that the vaccine vial is on the bottom and allow the diluent to flow into the vaccine vial. If the diluent does not flow freely, squeeze the diluent bottle gently and the diluent will flow into the vaccine vial. The vaccine vial should be completely filled with diluent to prevent excess foaming.
7. Hold the joined containers by the ends; shake vigorously until the vaccine plug is completely dissolved.
8. Return the joined containers to their original position (diluent bottle on the bottom). Allow the vaccine to flow into the diluent bottle. If the vaccine does not flow into the diluent bottle, tap or squeeze the diluent bottle gently and release to draw the vaccine into the diluent bottle. Be sure all the product is removed from the vaccine vial.
9. Remove the vaccine vial and transfer tube from the neck of the diluent bottle.
10. The vaccine is now ready to use.
11. Wash hands thoroughly after mixing the vaccine.

FOR DRINKING WATER ROUTE OF ADMINISTRATION

1. Assemble the vaccine and equipment needed to vaccinate the entire flock at one time.
2. Do not open and rehydrate the vaccine until ready for use.
3. Remove the tear-off aluminum seal and stopper from vial containing the dried vaccine.
4 Use cool, clean, non-chlorinated tap water to which powdered milk has been added as directed under HOW TO VACCINATE.
5. Remove the rubber stopper from the vaccine vial and rehydrate the vaccine by filling the vial about half-full with tap water (milk added).
6. Reseat the stopper and shake to thoroughly dissolve the vaccine.

How to Vaccinate

BY WING-WEB METHOD

Vaccination is accomplished by dipping the needle applicator into the mixed vaccine and piercing the webbed portion of the underside of the wing. Avoid piercing through feathers which may wipe off the vaccine, and avoid hitting the wing muscle or bone to minimize reaction. The applicator is designed to pick up the proper amount of vaccine on the needles, which is deposited in the tissues when the wing is pierced. Re-dip the applicator in the vaccine before each application. Excess vaccine adhering to the applicator should be removed by touching the applicator to the inside of the vial.

BY DRINKING WATER METHOD

Do not mix the vaccine into the drinking water until ready for use. Drinking water for vaccination should be mixed with powdered milk to prevent inactivation from chlorine or other water additives and also to stabilize the vaccine bacteria. The powdered milk should be added to the water at the rate of 3 grams per 11 liters (1 heaped teaspoon per 3 U.S. gallons); or 87 grams per 190 liters (1 heaped cupful per 50 U.S. gallons). Use only clean waterers and equipment free of disinfectants or sanitizers. All water must be withheld for at least 2 hours prior to vaccination to assure that all turkeys drink.

Mix the rehydrated vaccine in the quantity of drinking water (milk added) which will be consumed by thirsty turkeys in approximately 2 hours. The following schedule is a general guideline for the amount of water to use with the vaccine. These amounts will vary depending upon the individual management conditions, climate, age and sex of the birds.

Amount of Water for Each 1000 Doses

Age	Sex	Climate	Liters	US gal
6-8 wks.	Toms	Hot	95	25
6-8 wks.	Hens	Hot	76	20
6-8 wks.	Toms	Cold	49	13
6-8 wks.	Hens	Cold	38	10
10-14 wks.	Toms	Hot	133	35
10-14 wks.	Hens	Hot	103	27
10-14 wks.	Toms	Cold	68	18
10-14 wks.	Hens	Cold	53	14

Reactions: Examination for Takes

FOR WING-WEB VACCINATION

Normally, no overall clinical reaction is observed. At 5 to 10 days following vaccination, a swelling of the skin (subcutaneous granuloma) will develop on the wing-web at the point of inoculation. The absence of this local reaction may mean that improper vaccination methods were used. Examination for these "takes" at 7 days post-vaccination may be used to assure that proper vaccination has been conducted. Protection will normally develop within 14 days after vaccination.

Caution

1. For use in chickens and turkeys only.
2. Vaccinate only healthy birds. Although disease may not be evident, disease conditions may cause serious complications or reduce protection.
3. Avoid vaccinating birds during weather-induced stress periods and 7 days prior to and 7 days after moving and handling. To avoid interference with development of protection, birds to be vaccinated should not be given any antibiotic and/or sulfonamide medication used in the prevention or treatment of fowl cholera for 3 days before and 5 days after vaccination.
4. All birds within a flock should be vaccinated on the same day. Isolate other susceptible birds on the premises from the birds being vaccinated.
5. In outbreak situations, vaccinate healthy birds first, progressing toward outbreak areas in order to vaccinate diseased birds last.
6. Do not spill or spatter the vaccine. Use entire contents of vial when first opened. Burn empty bottles, caps and all unused vaccine and accessories.
7. Avoid contact of open wounds or inoculation of vaccinating personnel with the vaccine since this might cause a bacterial infection. If this occurs, consult a physician immediately to obtain proper treatment. The vaccine organism, as with any *Pasteurella multocida* strain, may accidentally act as a human pathogen and precaution should be taken to avoid exposure.
8. Wash hands thoroughly after using the vaccine.
9. Do not dilute the vaccine or otherwise stretch the dosage.
10. Store at 2° to 7° C (35° to 45° F).
11. Do not vaccinate within 21 days before slaughter.

Notice

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine type, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and location of the birds; names of operators performing the vaccination and any observed reactions.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

PM-ONEVAX®-C

Pasteurella multocida Vaccine

(Avirulent Live Culture, Avian Isolate)

For vaccination of healthy broiler breeder and layer chickens and turkey breeders as an aid in prevention of fowl cholera due to *Pasteurella multocida.*

ADVANTAGES:

- A temperature sensitive mutant of the CU strain that produces stronger takes than the M-9 strain, but less than the CU strain
- Offers protection against naturally occurring field strains of *P. multocida*
- Easy wing-web administration in broiler breeders, layers and turkey breeders

PM-Onevax®-C vaccine. The seed culture used to make this vaccine has been laboratory tested for protection of chickens against challenge with the X-73 type 1 strain of *P. multocida* and in turkeys against challenge with the P1059 type 3 strain of *P. multocida*.

10 x 1,000 doses

MERCK Animal Health

MERCK Animal Health

US-PMP-201100001

PRODUCT BULLETIN

PM-ONEVAX®-C

Pasteurella multocida Vaccine

(Avirulent Live Culture, Avian Isolate)

For Animal Use Only.

Description

PM-Onevax®-C vaccine is a live bacterial vaccine containing the mild avirulent PM-1 strain of *Pasteurella multocida* in a freeze-dried preparation sealed under vacuum. The vaccine strain has been shown to offer protection as an aid in the prevention of fowl cholera in chickens and turkeys. The seed culture used to make this vaccine has been laboratory tested for protection in chickens against challenge with the X-73 (type 1) strain of *P. multocida* and in turkeys against challenge with the P1059 (type 3) strain of *P. multocida*.

When to Vaccinate

CHICKENS: Use by wing-web stab to vaccinate chickens 10-12 weeks of age and again at 18-20 weeks of age as an aid in the prevention of pasteurellosis (fowl cholera) due to *P. multocida* type 1. There should be at least 6 weeks and not more than 10 weeks between vaccinations.

TURKEYS: Use by wing-web stab to vaccinate turkey breeders 15 weeks of age or older as an aid in the prevention of pasteurellosis (fowl cholera) due to *P. multocida* type 3. Birds should initially be wing-web vaccinated at 15-18 weeks of age and again 8 weeks later. Turkey breeders must be vaccinated at least twice with live fowl cholera vaccine via oral route prior to wing-web vaccination. The interval between the last oral vaccination and the first wing-web vaccination should not exceed 6 weeks. Additional wing-web vaccination every 6-8 weeks throughout the life of the bird may be required in areas of endemic exposure to fowl cholera.

Your Vaccination Program

The development of a durable, strong protection to this disease depends upon the use of an effective vaccination program as well as many circumstances such as administration techniques, environment and flock health at the time of vaccination. Also, the immune response to 1 vaccination under field conditions is seldom complete for all animals within a given flock. Even when vaccination is successful, the protection stimulated in individual animals against different diseases may not be lifelong. Therefore, a program of periodic revaccination may be necessary.

Contraindications

CHICKENS: Initial vaccination in chickens over 12 weeks of age may be undesirable because larger granulomas may develop at the site of inoculation and this may result in downgrading of carcasses at slaughter.

TURKEYS: Use of this vaccine in turkeys which have not been orally prevaccinated may cause severe post vaccination reactions, including lameness and death.

Preparation of the Vaccine

1. Do not open and mix the vaccine until ready for use.
2. Mix only 1 vial at a time and use entire contents within 2 hours.
3. Remove the tear-off aluminum seal and stopper from vial containing the dried vaccine.
4. Remove the tear-off aluminum seal and stopper from the bottle containing the diluent.
5. Hold the diluent bottle firmly in an upright position and insert the shorter end of the transfer tube. Still holding the diluent bottle in an upright position, insert the neck of the vaccine vial over the longer end of the transfer tube. The vaccine vial should snap into position, connecting the 2 vials securely.
6. Invert the 2 containers so that the vaccine vial is on the bottom and allow the diluent to flow into the vaccine vial. If the diluent does not flow freely, squeeze the diluent bottle gently and the diluent will flow into the vaccine vial. The vaccine vial should be completely filled with diluent to prevent excess foaming.
7. Hold the joined containers by the ends; shake vigorously until the vaccine plug is completely dissolved.
6. Invert the 2 containers so that the vaccine vial is on the bottom and allow the diluent to flow into the vaccine vial. If the diluent does not flow freely, squeeze the diluent bottle gently and the diluent will flow into the vaccine vial. The vaccine vial should be completely filled with diluent to prevent excess foaming.
7. Hold the joined containers by the ends; shake vigorously until the vaccine plug is completely dissolved.
8. Return the joined containers to their original position (diluent bottle on the bottom). Allow the vaccine to flow into the diluent bottle. If the vaccine does not flow into the diluent bottle, tap or squeeze the diluent bottle gently and release to draw the vaccine into the diluent bottle. Be sure all the product is removed from the vaccine vial.
9. Remove the vaccine vial and transfer tube from the neck of the diluent bottle.
10. The vaccine is now ready to use.
11. Wash hands thoroughly after mixing the vaccine.

How to Vaccinate

Vaccination is accomplished by dipping the needle applicator into the mixed vaccine and piercing the webbed portion of the underside of the wing. Avoid piercing through feathers which may wipe off the vaccine, and avoid hitting the wing muscle or bone to minimize reaction. The applicator is designed to pick up the proper amount of vaccine on the needles, which is deposited in the tissues when the wing is pierced. Redip the applicator in the vaccine before each application. Excess vaccine adhering to the applicator should be removed by touching the applicator to the inside of the vial.

Reactions: Examination for Takes

Normally, no overall clinical reaction is observed. At 5 to 10 days following vaccination, a swelling of the skin (subcutaneous granuloma) will develop on the wing-web at the point of inoculation. The absence of this local reaction may mean that improper vaccination methods were used. Examination for these "takes" at 7 days post-vaccination may be used to assure that proper vaccination has been conducted. Protection will normally develop within 14 days after vaccination.

Caution

1. Vaccinate only healthy birds. Although disease may not be evident, disease conditions may cause serious complications or reduce protection.
2. Avoid vaccinating birds during weather-induced stress periods and 7 days prior to and 7 days after moving and handling. To avoid interference with development of protection, birds to be vaccinated should not be given any antibiotic and/or sulfonamide medication used in the prevention or treatment of fowl cholera for 3 days before and 5 days after vaccination.
3. All birds within a flock should be vaccinated on the same day. Isolate other susceptible birds on the premises from the birds being vaccinated.
4. In outbreak situations, vaccinate healthy birds first, progressing toward outbreak areas in order to vaccinate affected birds last.
5. Do not spill or spatter the vaccine. Use entire contents of vial when first opened. Burn empty bottles, caps and all unused vaccine and accessories.
6. Avoid contact of open wounds or inoculation of vaccinating personnel with the vaccine since this might cause a bacterial infection. If this occurs, consult a physician immediately to obtain proper treatment. The vaccine organism, as with any *Pasteurella multocida* strain, may accidentally act as a human pathogen and precaution should be taken to avoid exposure.
7. Wash hands thoroughly after using the vaccine.
8. Do not dilute the vaccine or otherwise stretch the dosage.
9. Store at 2° to 7° C (35° to 45° F).
10. Do not vaccinate within 21 days before slaughter.

Notice

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine type, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and location of the birds; names of operators performing the vaccination and any observed reactions.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

CORVAC-3®

Coryza Vaccine

Avibacterium paragallinarum (Serotypes A, B, and C)

This product has been shown to be effective for the vaccination of healthy chickens 5 weeks of age or older against disease caused by *Avibacterium paragallinarum* (CORYZA, serotypes A, B or C).

ADVANTAGES:

- Broad-spectrum protection against infectious coryza
- Optimum antigen content
- Dependable development of immunity

CORVAC-3® is an inactivated oil adjuvant emulsion bacterin. It is approved for use in chickens five weeks of age or older via subcutaneous injection.

1 x 1,000 doses

MERCK Animal Health

PRODUCT BULLETIN

CORVAC-3®

Coryza Vaccine

Avibacterium paragallinarum (Serotypes A,B, and C)

For Animal Use Only.

Description

This vaccine is prepared from three inactivated strains of *Avibacterium paragallinarum* belonging to serotypes A, B, and C (Page classification scheme), and suspended in the aqueous phase of an oil adjuvant emulsion.

Indications

This product has been shown to be effective for the vaccination of healthy chickens 5 weeks of age or older against disease caused by *Avibacterium paragallinarum* (CORYZA). Duration of immunity has not been established. For more information regarding efficacy and safety data, see - productdata.usda.aphis.gov.

Administration

Allow the vaccine to reach ambient temperature, 16° to 27°C (60° to 80°F), shake well before use and periodically during use. Inject 0.5 ml subcutaneously in chickens in the back of the neck midway between the head and body in a direction away from the head using an 18-gauge needle. Do not inject into muscle tissue or neck vertebrae. Vaccinate healthy chickens at least 5 weeks of age. A second vaccination is recommended a minimum of 4 weeks following initial vaccination and 3-4 weeks prior to the onset of lay. The use of any inactivated vaccine may cause false positive results on Mycoplasma plate tests. Avoid Mycoplasma testing prior to ten weeks post-vaccination.

Vaccination Reaction

Clinical reactions may occur as a result of transient swelling in the neck region following vaccination. These reactions may be aggravated by improper vaccination technique. If shock is observed, this must usually be ascribed to stress by handling.

Cautions

1. **TO AVOID HUMAN INJECTION, EXTREME CAUTION SHOULD BE USED WHEN INJECTING ANY OIL EMULSION VACCINE. ACCIDENTAL HUMAN INJECTION MAY CAUSE SERIOUS LOCAL REACTIONS. CONTACT A PHYSICIAN IMMEDIATELY IF ACCIDENTAL HUMAN INJECTION OCCURS.**
2. Do not administer this vaccine during the critical egg laying period from onset until after peak production. Administration of this product during the lay period may result in a drop in egg production.
3. Injection of inactivated vaccine into breast muscle may create processing plant problems under certain conditions.
4. Ensure that vaccination equipment is clean and sterile before use.
5. Do not use vaccination equipment with rubber parts, as the oil emulsion may attack certain types of rubber.
6. Use entire contents when first opened.
7. Do not vaccinate chickens within 42 days before slaughter.
8. Store at 2° to 8°C (35° to 46°F) in the dark.
9. Do not mix with other products.
10. In case of human exposure, contact a physician.
11. Contains thimerosal as a preservative.
12. FOR ANIMAL USE ONLY

Notice

This vaccine has undergone rigid potency, safety and purity tests, and meets Merck Animal Health, U.S. and local requirements. It is designed to stimulate effective immunity when used as directed, but the user must be advised that the response to the product depends upon many factors, including, but not limited to, conditions of storage and handling by the user, administration of the vaccine, health and responsiveness of individual chickens and the degree of field exposure. Therefore, directions should be followed carefully.

Records

Keep a record of vaccine, quantity, serial number, expiration date and place of purchase; the date and time of vaccination; the number, age, breed and locations of chickens; names of operators performing the vaccination and any observed reactions.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

US-COR-220700001

PRODUCT BULLETIN

ART VAX®

Bordetella avium Vaccine

(Avirulent Live Culture)

For vaccination of healthy turkeys as an aid in the prevention of rhinotracheitis (turkey coryza) caused by *Bordetella avium*.

ADVANTAGES:

- Approved for spray administration at 1 day of age followed by drinking water at 2 weeks of age
- Proven efficacy in preventing coryza in turkeys
- Time proven, this vaccine strain has been used effectively in the field for over 20 years
- Mild reaction
- Freeze dried product of proven quality and stability

ART VAX® vaccine is a live bacterial vaccine containing a chemically induced mutant of *Bordetella avium,* which is immunogenic for turkeys when vaccinated by spray cabinet at 1 day of age; then revaccinated in the drinking water at 2 weeks of age.

10 x 1,000 doses

MERCK Animal Health

MERCK Animal Health

US/ART/0916/0001

PRODUCT BULLETIN

ART VAX®

Bordetella avium Vaccine

(Avirulent Live Culture)

For Animal Use Only.

Description

ART VAX® vaccine is a live bacterial vaccine containing a chemically induced mutant of *Bordetella avium* which is immunogenic for turkeys when given by spray at 1 day of age, then in the drinking water at 2 weeks of age. For use in turkeys as an aid in preventing *B. avium* rhinotracheitis (turkey coryza) through vaccination by spray application and in the drinking water.

When to Vaccinate

Vaccinate by spray at 1 day of age, then in the drinking water at 2 weeks of age. Revaccinate every 4 to 6 weeks thereafter as necessary according to exposure conditions. Good management practices must be followed to reduce exposure of birds to virulent *B. avium* during the first several weeks of life. Vaccination after infection with a field strain of *B. avium* is ineffective.

Your Vaccination Programs

The development of a durable, strong protection to this disease depends upon the use of an effective vaccination program as well as many circumstances such as administration techniques, environment and flock health at the time of vaccination. Also, the immune response to one vaccination under field conditions is seldom complete for all animals within a given flock. Even when vaccination is successful, the protection stimulated in individual animals against different diseases may not be lifelong. Therefore, a program of periodic revaccination may be necessary.

Contraindications

Turkeys must be healthy and free of environmental or physical stress at the time of vaccination. Do not use this vaccine within 10 days before or 10 days after vaccinating turkeys with live virus or live bacterial vaccines.

Preparation of the Vaccine

FOR DRINKING WATER:

1. Assemble the vaccine and equipment needed to vaccinate the entire flock at one time.
2. Do not open and rehydrate the vaccine until ready for use.
3. Remove the tear-off aluminum seal from the vaccine vial without disturbing the rubber stopper.
4. Use cool, clean, non-chlorinated tap water to which powdered milk has been added as directed under HOW TO VACCINATE.
5. Remove the rubber stopper from the vaccine vial and rehydrate the vaccine by filling the vial about 1/2 full with tap water (milk added).
6. Reseat the stopper and shake to thoroughly dissolve the vaccine.

FOR SPRAY:

Rehydrate each 1000 doses of vaccine to 140 mL using sterile water as diluent.

How to Vaccinate

BY SPRAY: Use this method for 1 day of age vaccination. Proper coarse spray application of this vaccine is best accomplished through use of a clean spray cabinet, which delivers 7 ml per shot. Spray each poult box twice for a total of 14 ml of vaccine per 100 poults.

BY DRINKING WATER: Do not mix the vaccine into the drinking water until ready for use. Drinking water for vaccination should be mixed with powdered milk to prevent inactivation from chlorine or other water additives and also to stabilize the vaccine bacteria. The powdered milk should be added to the water at the rate of 3 grams per 11 liters (1 heaped teaspoon per 3 U.S. gallons); or 87 grams per 190 liters (1 heaped cupful per 50 U.S. gallons). Use only clean waterers and equipment free of disinfectants or sanitizers. All water must be withheld for at least 2 hours prior to vaccination to assure that all turkeys drink. Mix the rehydrated vaccine in the quantity of drinking water (milk added) which will be consumed by thirsty turkeys in approximately 2 hours.

The following schedule is a general guideline for the amount of water to use with the vaccine. These amounts will vary depending upon the individual management conditions, climate, age and sex of the birds.

Each 1000 Birds	U.S. Gallons	Metric Liters
2 Weeks	8	30
3 Weeks	12	45
4 Weeks	16	61
5 Weeks	20	76
6 Weeks	26	99
7 Weeks	32	121
8 Weeks	40	152
9 Weeks	48	182

Another helpful guideline for daily water consumption is 3.8 liters (one U.S. gallon) of water per week of age per 100 poults; figure 40% of this amount. This 40% is about a 3-hour supply for the flock.

Distribute 1,000 doses of vaccine in water as used by 1,000 turkeys. Provide ample water space so that all turkeys can drink easily. Do not administer through water lines with a proportioner or medication tank.

Caution

READ FULL DIRECTIONS CAREFULLY.
USE ENTIRE CONTENTS WHEN FIRST OPENED.
DO NOT VACCINATE WITHIN 21 DAYS BEFORE SLAUGHTER.
STORE VACCINE IN REFRIGERATOR 35° TO 45°F (2° TO 7°C).
CAUTION: BURN CONTAINERS AND ALL UNUSED CONTENTS.

1. To avoid interference with development of protection, turkeys to be water vaccinated should not be given any antibiotic and/or sulfonamide medication used in the prevention or treatment of *B. avium* rhinotracheitis for 3 days before and 5 days after vaccination.
2. Vaccinate only healthy birds. Coccidiosis, respiratory disease, mycoplasma infection, or other disease conditions may cause serious complications or reduce protection. Avoid exposing birds other than turkeys to this vaccine.
3. All birds within a flock should be vaccinated on the same day. Isolate other susceptible birds on the premises from the birds being vaccinated.
4. In outbreak situations, vaccinate houses of healthy birds first progressing toward houses of affected birds. Vaccination of affected houses of birds is not recommended. Under these conditions, use an effective treatment.
5. Do not spill or spatter the vaccine. Burn empty bottles, caps and all unused vaccine and accessories. Use entire contents of vial when first opened.
6. Wash hands thoroughly after using the vaccine.
7. Do not dilute the vaccine or otherwise stretch the dosage.
8. Store at 2° to 7° C (35° to 45° F).
9. Do not vaccinate within 21 days of slaughter.

Records

Keep a record of vaccine type, quantity, serial number, expiration date and place of purchase; the date and time of vaccination; the number, age, breed and location of the birds; names of operators performing the vaccination and any observed reactions. This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Contact our sales or technical services representatives to help design a custom vaccination program.

MERCK Animal Health

PRODUCT BULLETIN

ORALVAX HE®

Hemorrhagic Enteritis Vaccine

(Live Virus)

For vaccination of healthy turkeys 6 weeks of age or older as an aid in the prevention of *hemorrhagic enteritis*.

ADVANTAGES:

- Safe and efficacious: produced with a stable and avirulent strain of type II avian adenovirus of pheasant origin
- Produced under federal quality control standards, ensuring purity and sterility
- Consistent high potency titers to ensure protection of vaccinated birds, flock after flock
- Recommended administration at 6 weeks of age or older helps assure no maternal antibody interference

Oralvax HE® vaccine is a high titer vaccine that safely protects turkeys 6 weeks of age or older against the immuno-suppressive effects and death losses caused by *hemorrhagic enteritis*.

10 x 2,000 doses
10 x 5,000 doses

MERCK Animal Health

PRODUCT BULLETIN

ORALVAX HE®

Hemorrhagic Enteritis Vaccine

(Live Virus)

For Animal Use Only.

Description

Oralvax HE® vaccine is a live virus vaccine containing a turkey avirulent Type II avian adenovirus of pheasant origin. The virus is grown in the RP-19 cell line and freeze-dried and sealed under vacuum. It is recommended for use in healthy turkeys 6 weeks of age or older as an aid in the prevention of *hemorrhagic enteritis* through vaccination by the drinking water method.

When to Vaccinate

Vaccinate at 6 weeks of age or older.

Preparation of the Vaccine

1. Assemble the vaccine and equipment needed to vaccinate the entire flock at one time.
2. Do not open and rehydrate the vaccine until ready for use.
3. Remove the tear-off aluminum seal from the vaccine vial without disturbing the rubber stopper.
4. Use cool, clean, non-chlorinated tap water to which powdered milk has been added as directed under HOW TO VACCINATE.
5. Remove the rubber stopper from the vaccine vial and rehydrate the vaccine by filling the vial about half-full with tap water (milk added).
6. Reseat the stopper and shake to thoroughly dissolve the vaccine.

How to Vaccinate

Do not mix the vaccine into the drinking water until ready for use. Drinking water for vaccination should be mixed with powdered milk to prevent possible inactivation from chlorine or other water additives and also to stabilize the vaccine virus. The powdered milk should be added to the water at the rate of 3 grams per 11 liters (1 heaped teaspoon per 3 U.S. gallons); or 87 grams per 190 liters (1 heaped cupful per 50 U.S. gallons).

Use only clean waterers and equipment free of disinfectants or sanitizers. All water must be withheld for at least 2 hours prior to vaccination to assure that all turkeys drink. Mix the rehydrated vaccine in the quantity of drinking water (milk added) which will be consumed by thirsty turkeys in approximately 2 hours.

The following schedule is a general guideline for the amount of water to use with the vaccine. These amounts will vary depending upon the individual management conditions, climate, age and sex of the birds.

Amount of Water for Each 1000 Doses

Age	Liters	U.S. gal.
6 Wks	92	24
7 Wks	106	28
8 Wks	122	32
9 Wks	136	36
10 Wks	152	40

Distribute 2000 doses of vaccine in water as used by 2000 turkeys and 5000 doses of vaccine in water as used by 5000 turkeys. Provide ample water space so that all turkeys can drink easily. Do not administer through water lines with a proportioner or medication tank.

Caution

1. Vaccinate only healthy birds.
2. Avoid exposing birds other than turkeys to this vaccine.
3. All birds within a flock should be vaccinated on the same day.
4. In outbreak situations, vaccinate healthy birds first progressing toward outbreak areas in order to vaccinate affected birds last.
5. Do not spill or spatter the vaccine. Burn empty bottles, caps and all unused vaccine and accessories. Use entire contents of vial when first opened.
6. Do not use to vaccinate pheasants.
7. Wash hands thoroughly after using the vaccine.
8. Do not dilute the vaccine or otherwise stretch the dosage.
9. Store at 2° to 7° C (35° to 45° F).
10. Do not vaccinate within 21 days of slaughter.

Notice

This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Records

Keep a record of vaccine type, quantity, serial number, expiration date, and place of purchase; the date and time of vaccination; the number, age, breed, and location of the birds; names of operators performing the vaccination; and any observed reactions.

Contact our sales or technical services representatives to help design a custom vaccination program.

US/OVH/0916/0001

MERCK Animal Health

5.0 SPECIALTY PHARMACEUTICALS®

PRODUCT BULLETIN

GARASOL®

(gentamicin injection)

For the prevention of early mortality in day-old chickens caused by *Escherichia coli*, *Salmonella typhimurium*, and *Pseudomonas aeruginosa* susceptible to gentamicin sulfate. As an aid in the prevention of early mortality in 1- to 3-day-old turkeys associated with *Arizona paracolon* infections susceptible to gentamicin sulfate.

ADVANTAGES:

- Significantly reduces early chick and poult mortality
- Bactericidal at low levels
- Safe for crews to handle
- No side effects observed when used as directed

Garasol® (gentamicin injection) is one of the broadest-spectrum antibodies available in the animal health market. Efficacy and safety has been demonstrated by extensive field trials. No adverse effects were noted, and Garasol Injection is safe for crews to handle.

Residue Warnings:

For use in day-old chickens and 1- to 3-day-old turkeys only. Chickens injected with Garasol Injection must not be slaughtered for food at least 5 weeks following treatment. Turkeys injected with Garasol Injection must not be slaughtered for food for at least 9 weeks following treatment.

100 mg/100 mL vials

MERCK Animal Health

PRODUCT BULLETIN

GARASOL®

(gentamicin injection)

For Animal Use Only.
Approved by FDA under NADA # 101-862

Injection — 100 mg/mL
Anti-Infective for
Day-Old Chickens and
One- to Three-Day-Old
Turkeys

Description
Each milliliter of GARASOL Injection contains 100 mg gentamicin base (equivalent to 156 mg gentamicin sulfate); 3.2 mg sodium bisulfite; 0.1 mg edetate disodium; 4.5 mg sodium acetate, anhydrous; 3.0 mg glacial acetic acid; 0.8 mg methylparaben and 0.1 mg propylparaben as preservatives; water for injection q.s.

Chemistry
Gentamicin is a bactericidal aminoglycoside antibiotic derived from *Micromonospora purpurea* of the Actinomycetes group. It is a powder, readily soluble in water and basic in nature. Gentamicin aqueous solutions do not require refrigeration and are stable overa wide range of temperatures and pH.

Indications
DAY-OLD CHICKENS – GARASOL Injection is recommended for the prevention of early mortality associated with *Escherichia coli, Salmonella typhimurium*, and *Pseudomonas aeruginosa* susceptible to gentamicin sulfate.
TURKEYS – As an aid in the prevention of early mortality of 1- to 3-day-old turkeys associated with *Arizona paracolon* infections susceptible to gentamicin sulfate.

Dosage and Administration
CHICKENS: Each day-old chicken should be aseptically injected subcutaneously in the neck with GARASOL Injection diluted with sterile, physiologic saline solution to provide 0.2 mg gentamicin in a 0.2-mL dose. This concentration can be provided by diluting GARASOL Injection as follows:

Garasol mL	Sterile Saline mL	# Doses	Dose/ Chicken mL
1	99	500	0.2
2	198	1000	0.2
4	396	2000	0.2
10	990	5000	0.2
100 (1 bottle)	9900	50000	0.2

TURKEYS: Each 1- to 3-day-old turkey should be aseptically injected subcutaneously in the neck with GARASOL Injection diluted with sterile, physiologic saline solution to provide 1 mg gentamicin in a 0.2-mL dose. The dose should be injected under the loose skin on top of the neck, halfway between the head and base of the neck. This concentration can be provided by diluting GARASOL Injection as follows:

Garasol mL	Sterile Saline mL	# Doses	Dose/ Turkey mL
1	19	100	0.2
2	38	200	0.2
4	76	400	0.2
10	190	1000	0.2
100 (1 bottle)	1900	10000	0.2

Clean and sterilize needles and syringes by boiling in water for 15 minutes prior to use. Disinfect the injection site and top of the bottle with a suitable disinfectant, such as 70% isopropyl alcohol. Use all precautions to prevent contamination of vial contents.

Residue Warnings
For use in day-old chickens and 1- to 3-day-old turkeys only. Chickens injected with GARASOL Injection must not be slaughtered for food for at least 5 weeks following treatment. Turkeys injected with GARASOL Injection must not be slaughtered for food for at least 9 weeks following treatment.

How Supplied
GARASOL Injection, 100 mg/mL, is available in 100-mL multiple-dose vials, NDC 0061-0134-01.

STORE BETWEEN 2° AND 30°C (36° AND 86°F). USE WITHIN 28 DAYS OF FIRST PUNCTURE AND PUNCTURE A MAXIMUM OF 10 TIMES.

Intervet Inc. (d/b/a Merck Animal Health)
Madison, NJ 07940.

Gentamicin sulfate (active ingred.) made in China.
Formulated in Germany.
Rev. 12/19

Contact our sales or technical services representatives to help design a custom vaccination program.

US-GRS-1116-0001

MERCK Animal Health

PRODUCT BULLETIN

SAFE-GUARD®

(fenbendazole)

20% Type A Medicated Article

For the removal and control of gastrointestinal worms: round worms, adults and larvae (*Ascaridia dissimilis*), cecal worms, adults and larvae (*Heterakis gallinarum*), an important vector of *Histomonas meleagridis* (Blackhead) in growing turkeys.

ADVANTAGES:

- Proven safety
- The only in-feed dewormer approved for use in turkeys
- Excellent efficacy against both larval and adult roundworms[1]
- No pre-slaughter withdrawal required. May be used until day of slaughter.[2]

Consult your veterinarian for assistance in the diagnosis, treatment, and control of parasitism.

Safe-Guard® is an anthelminthic type A medicated premix containing 20% fenbendazole for use in growing turkeys.

Net Weight: 25 lb (11.34 kg)

[1] Data on file. Merck Animal Health

[2] Safe-Guard SAFE-GUARD® Type "A" Medicated article (Premix) [prescribing information]; 1991

MERCK Animal Health

PRODUCT BULLETIN

SAFE-GUARD®

(fenbendazole)

20% Type A Medicated Article

For Animal Use Only.

Description

An anthelminthic feed additive for the control of gastrointestinal worms in growing turkeys.
Active ingredient: Fenbendazole 200 grams per kilogram (90.7 grams per pound) Inert ingredients: roughage products or roughage products and calcium carbonate; and mineral oil or soybean oil.

Indications for Use

For the removal and control of gastrointestinal worms: round worms, adults and larvae (*Ascaridia dissimilis*), cecal worms, adults and larvae (*Heterakis gallinarum*), an important vector of *Histomonas melagridis* (Blackhead) in growing turkeys.

Important

Must be thoroughly mixed into turkey feed before use.

Directions for Mixing

Thoroughly mix 72.5 grams (0.16 lb) of Safe-Guard (fenbendazole) 20% Type A Medicated Article into each ton of complete feed to provide 16 ppm fenbendazole (use level).

It is recommended that an intermediate mix containing 1 part Safe-Guard 20% Type A Medicated Article and not less that 9 parts appropriate feed ingredients be thoroughly mixed before incorporation into the final feed.
The working premix is then blended with the complete feed mixture. Thoroughly mix both working premix and complete feed to assure complete and uniform distribution of the Safe-Guard 20% Type A Medicated Article.

Directions for Use

Fenbendazole is added to turkey feed at a concentration of 16 ppm (14.5 g/ton). The resultant complete turkey feed containing fenbendazole is then fed as the sole ration for 6 consecutive days.

Warning

KEEP THIS AND ALL DRUGS OUT OF THE REACH OF CHILDREN. NOT FOR USE IN HUMANS.
This product is not hazardous when used according to directions supplied. A safety data sheet (SDS) is available upon request. This and any other consumer information can be obtained by calling Merck Animal Health Customer Service at 1-800-211-3573.

Residue Warning

There is no pre-slaughter withdrawal period as Safe-Guard 20% Type A Medicated Article can be fed to day of slaughter.

Ask your Merck Animal Health sales or technical services representative to design a custom gastrointestinal worm control program to meet your needs.

MERCK Animal Health

US-SFG-1116-0006

PRODUCT BULLETIN

SAFE-GUARD® AQUASOL®

(Fenbendazole oral suspension)

Innovative manufacturing process enables easy, effective deworming for broilers, breeders, pullets and laying hens through oral administration via drinking water.

NEW PRODUCTION TECHNOLOGY[1]

- Now approved for laying hens and replacement chickens intended to become laying hens
- Proprietary, innovative wet-milling technique produces highly stable suspension in drinking water
- Smaller particle size helps prevent sedimentation and clogged pipes, filters or nipple drinkers
- Easily administered by medicators or proportioners

APPROVED FOR MAJOR INTESTINAL PARASITES[2]

- *Ascaridia galli* (adult stage roundworms)
- *Heterakis gallinarum* (adult stage cecal worms)

EFFECTIVE[2]

- 98.8% efficacy against *A. galli* in 4 US field studies (100% in broilers)
- 92.1% efficacy against *H. gallinarum* (long lived birds)

CONVENIENT WATER FORMULATION

- Short, 5 day treatment
- No pre-slaughter withdrawal period when used as directed
- Shelf life of 3 years unopened, 6 months after opening — multi-use container reduces waste

SAFE[2]

- Proven safe when used as directed
- No adverse effects on egg production, hatchability or progeny of breeders
- No impact on water or feed intake compared to unmedicated controls

Safe-Guard® AquaSol is available in 1 liter and 1 gallon presentations.

[1]Data on file, Merck Animal Health
[2]Freedom of Information Summary, NADA 141-449

MERCK Animal Health

PRODUCT BULLETIN

SAFE-GUARD® AQUASOL®

(Fenbendazole oral suspension)

For Animal Use Only.

Description
Safe-Guard® AquaSol is a suspension concentrate containing fenbendazole, an antiparasitic. Each mL of Safe-Guard AquaSol contains 200 mg of fenbendazole.

Indications for Use
Safe-Guard AquaSol is indicated for the treatment and control of adult *Ascaridia galli* in broiler chickens and replacement chickens and for the treatment and control of adult *A. galli* and *Heterakis gallinarum* in breeding chickens and laying hens.

Dosage and Administration
Safe-Guard AquaSol must be administered orally to chickens via the drinking water at a daily dose of 1.0 mg/kg BW (0.454 mg/lb) for 5 consecutive days.

Consult your veterinarian for assistance in the diagnosis, treatment, and control of parasitism.

Residue Warning
No withdrawal period is required when used according to labeling.

Storage Information
Store at room temperature 30ºC (86°F). Once opened, do not store the container above 25 ºC (77°F). Do not freeze.

Use within 6 months after opening. Use the medicated water within 24 hours.

For customer service, adverse effects reporting, and/or a copy of the SDS, call 1-800-211-3573

MERCK Animal Health

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US-MVC-220900001

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