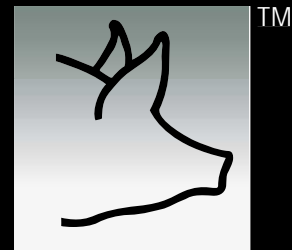


Erysipelothrix Rhusiopathiae- Haemophilus Parasuis-Mycoplasma Hyopneumoniae Bacterin



Myco Silencer® MEH

Para uso en cerdos sanos en la prevención de neumonía causada por *Mycoplasma hyopneumoniae*, erisipelas causada por *Erysipelothrix rhusiopathiae* y poliserositis (enfermedad de Glasser) causada por *Haemophilus parasuis*.

Este producto contiene cultivos inactivados de *Mycoplasma hyopneumoniae*, *Erysipelothrix rhusiopathiae* y dos cepas de *Haemophilus parasuis* en el adyuvante Diluvac Forte®.

DOSIS E INDICACIONES: Agítese bien, asépticamente inyecte intramuscularmente (IM). Aplique una dosis de 2 mL a animales de por lo menos 3 semanas de edad. Revacunar con una dosis de 2 mL, tres semanas después de la primera dosis.

ADVERTENCIAS: Manténgase en un lugar oscuro y a no más de 45-F (7-C). No congelar. No guardar frascos abiertos. Queme los frascos y el contenido no usado. Use solo en animales sanos. No vacunar 21 días antes del sacrificio. Si ocurren reacciones alérgicas, administre epinefrina. Contiene timerosal, gentamicina y polimixina B como conservadores.

Patente U.S. No. 5,650,155, 5,667,784 y 5,968,525

SOLO PARA USO VETERINARIO

Erysipelothrix Rhusiopathiae- Haemophilus Parasuis-Mycoplasma Hyopneumoniae Bacterin



Myco Silencer® MEH*

50 doses 100 mL Code PS-765-50



INTERVET INC., Millsboro, DE 19966
U.S. Veterinary License No. 286

For use in healthy swine as an aid in the prevention of pneumonia caused by *Mycoplasma hyopneumoniae*, erysipelas caused by *Erysipelothrix rhusiopathiae* and polyserositis (Glasser's Disease) caused by *Haemophilus parasuis*.

This product contains inactivated cultures of *Mycoplasma hyopneumoniae*, *Erysipelothrix rhusiopathiae* and two strains *Haemophilus parasuis* in Diluvac Forte® adjuvant.

DOSAGE AND DIRECTIONS: Shake well, aseptically inject intramuscularly (IM). Administer a 2.0 mL dose at 3 weeks of age or older, followed by one 2.0 mL dose 3 weeks later.

CAUTION: Store in the dark at not over 45°F (7°C). Do not freeze. Do not save partial contents. Burn the container and all unused product. Use only in healthy swine. Do not vaccinate within 21 days of slaughter. If allergic reaction occurs, treat with epinephrine. Contains thimerosal, gentamicin and polymyxin B as preservatives.

*U.S. Patent No. 5,650,155, 5,667,784 and 5,968,525

FOR VETERINARY USE ONLY

For the vaccination of healthy swine, three weeks of age or older, against mycoplasmal hypopneumonia, erysipelas and Glasser's Disease.

- Provides broad protection against disease associated with *Mycoplasma hyopneumoniae*, *Erysipelothrix rhusiopathiae*, and *Haemophilus parasuis*.
- Safe, efficacious and convenient administration in a 2 mL dose
- Formulated with 2 strains of *Haemophilus parasuis*.
- 3 antigens in one, saves labor and cost
- Reduces the stress caused from multiple injections
- Emulsified in the patented Diluvac® Forte Adjuvant



For the vaccination of healthy swine, three weeks of age or older, against mycoplasmal hypopneumonia, erysipelas and Glasser's Disease.

Myco Silencer® MEH combines convenience and performance. Formulated with inactivated cultures of *Erysipelothrix rhusiopathiae*, 2 strains of *Haemophilus parasuis* and *Mycoplasma Hypopneumoniae* in the patented Diluvac® Forte Adjuvant, Myco Silencer® MEH is another quality product delivered through research at Intervet.

Product Discussion

DISEASE BACKGROUNDS:

Mycoplasma Pneumonia (M fraction) is considered an important respiratory disease in swine. It is a significant player in the Porcine Respiratory Disease Complex (PRDC) or Finisher Stall-Out in herds of all management types. Infection commonly spreads from an infected sow to her litter or from older infected pigs to younger susceptible pigs as passive maternal protection falls. Segregated early weaning (SEW) and modified medicated early weaning (MMEW) systems have been only partially successful in rearing animals free of mycoplasma. Clinical signs include a persistent hacking cough, slight fever and inappetence at early infection, and mild thumping or rough breathing. The disease slowly spreads through animals in a room. Treatment is usually with antibiotics. Commercial vaccines have been available since 1991 and have grown to be one of the most important swine respiratory vaccines.

Erysipelas (E fraction) is caused by the bacteria, *Erysipelothrix rhusiopathiae*. Erysipelas is considered ubiquitous where swine are raised. Erysipelas exists in the soil and in non-symptomatic carrier swine, turkeys and a few other species. Infection through ingestion or skin abrasions, etc. of susceptible animals leads to rapid body wide infection (septicemia) with high fevers, inappetence and rapid deaths. The more chronic form shows lameness, heart valve fibrosis, and the classic 'diamond skin lesions' caused by septic infarcts in the blood stream blocking regional areas of skin blood flow. Vaccination has been effective in disease prevention for many years. The disease is seldom seen under 100 lb. due to high levels of maternal antibody. Some herds do experience severe challenge where animals are booster vaccinated every 30-60 days up to marketing.

Haemophilus parasuis (H fraction) (Hps), also called "Glasser's Disease" or "polyserositis", persists in most swine populations. Early infection of piglets provides a problem in modern SEW

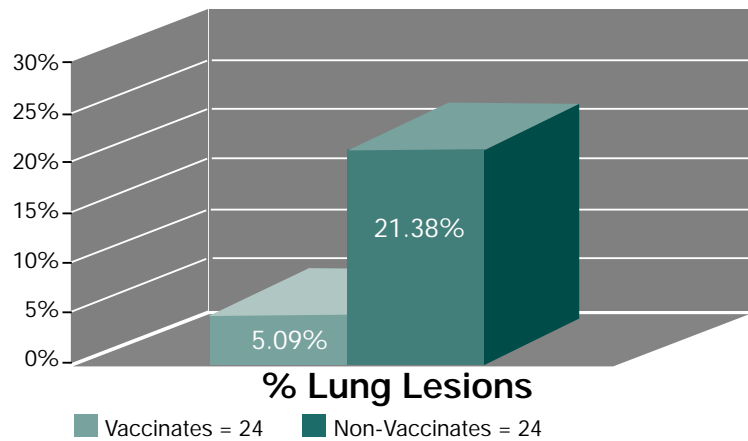
production systems which see disease in the nursery phase, particularly if comingling pigs from different breeding herds. Since Hps penetrates segregated early weaning (SEW) systems, it is a disease of modern high health pig production. Hps infection passes from a sow to her piglets at a very young age, colonizing the tonsils and upper respiratory tract as normal flora. Under stress of weaning further infection and shedding occurs for lateral transmission to pen and room-mates. Those susceptible become infected and may show some early mild signs (often overlooked), such as inappetence and/or a slight cough, followed soon by acute deaths, pneumonia, lameness and poor doers. Like most *Haemophilus* organisms, Hps is sensitive to a broad range of antibiotics. Preventive vaccination of incoming breeding stock, pre-farrow sows and baby pigs is used in problem herds.

Study Results

Mycoplasma Hyopneumoniae Efficacy Study Demonstrated a 76% Reduction of Lung Lesions

Forty-eight *Mycoplasma hyopneumoniae* naive pigs, 3 weeks of age, were equally divided by random selection into 2 groups. One group was vaccinated according to label directions with Myco Silencer® MEH, 2.0 mL intramuscularly. The second group remained unvaccinated. Vaccinates and unvaccinated pigs were challenged 10 days after the second booster dose with 1mL per nostril of live *M. hyopneumoniae* culture via a nebulizer for 3 consecutive days. Pigs were then observed for three weeks and then sacrificed for lung lesion scoring, demonstrating a 76% reduction in lung lesions in vaccinates when compared to non-vaccinates.

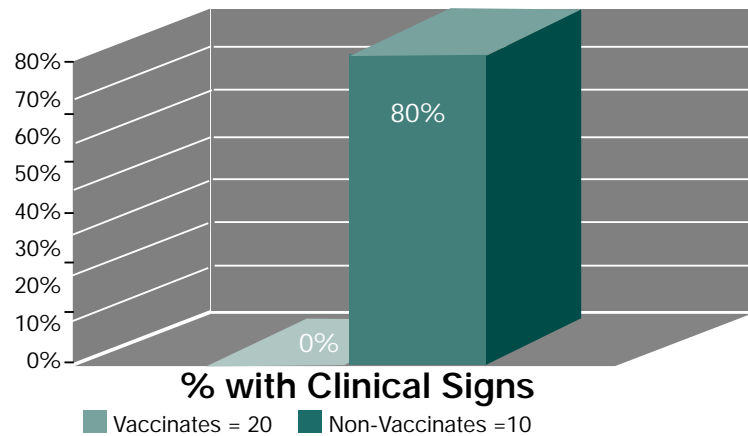
M. hyopneumoniae Challenge Study Results



Efficacy Study Demonstrated 100% Protection Against Erysipelas:

Thirty erysipelas negative pigs, 3 weeks of age, were divided by random selection into 2 groups. One group was vaccinated according to label directions with Myco Silencer® MEH, 2.0 mL intramuscularly. The second group remained unvaccinated. Vaccinates and controls were challenged 15 days after the second booster dose with 2 mL IM live *E. rhusiopathiae* culture. Pigs were then observed for 7 days for fever, clinical signs, septicemia and death. At 7 days any remaining pigs were sacrificed for splenic culture. Results indicated 100% protection against erysipelas challenge.

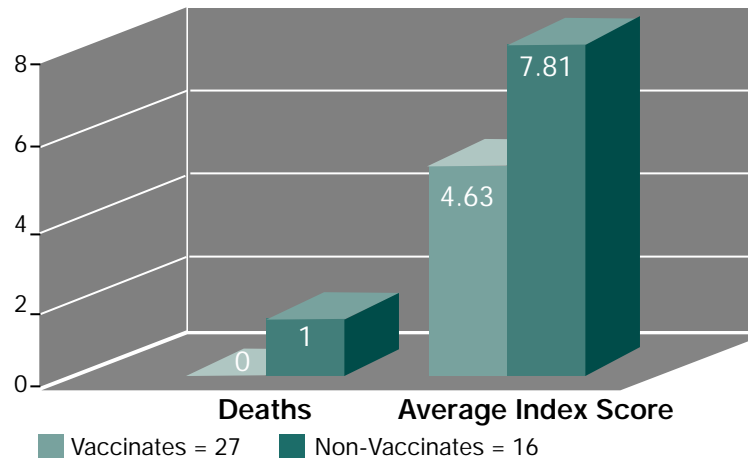
E. Rhusiopathiae Challenge Study Results



Proven Reduction in Clinical Signs of *Haemophilus Parasuis*:

Forty-five *H. parasuis* negative pigs, 3 weeks of age, were divided by random selection into 2 groups. One group was vaccinated according to label directions with Myco Silencer® MEH, 2.0 mL intramuscularly. The second group remained unvaccinated. Vaccinates and controls were challenged 15 days after the second dose with 5 ml intraperitoneal (IP) live virulent *H. parasuis* culture. Pigs were observed daily for 7 days and survivors sacrificed and index scored for polyserositis lesions (ie: peritoneal and thoracic fluid, fibrin, adhesions, pleuritis and peritonitis). Results indicated a significant reduction in clinical signs of Glasser's Disease.

Haemophilus parasuis Challenge Study Results



Myco Silencer MEH demonstrates safety in the field*

Field safety studies were conducted in four states and a total of 3,744 injections were administered to 1,763 pigs. Ninety eight percent of the vaccinates showed no signs of local or systemic reactions.

Diluvac® Forte Adjuvant, an aqueous adjuvant based on dl- α -tocopherol (Vitamin

Vaccination is a useful tool in today's swine industry. Efficacy of vaccines can be linked to several characteristics of the vaccine; one of the most important is the use of adjuvants. Oil based adjuvants have demonstrated excellent immunopotentiating properties. However, water-in-oil adjuvants based on mineral oils can cause serious tissue irritation, inflammation swellings and cysts at the site of administration.

For many years the Intervet Research and Development group worked on developing a new adjuvant, which contained no mineral oil but could stimulate the immune system equally to a water-in-oil adjuvant. The result was Diluvac Forte (Intervet's patented technology); an aqueous oil-in-water emulsion based on dl- α -tocopherol (Vitamin E) that maximizes the immune stimulating characteristics of the three antigen components of Myco Silencer MEH.

Vitamin E mode of action as an adjuvant attracts phagocytes and other immune cells to the site of injection. (e.g. Roitt et. Al., 1985; Celandia and Seiden, 1992). The phagocytes act along with degrading enzymes, peroxides and oxygen radicals to induce inflammation. After performing phagocytic activity the antigen

presenting cells escape to a lymph node to activate lymphocytes and mount an immune response. Vitamin E should provide the cells protection against detrimental effects, therefore, optimizing the condition of the cells which at the site of injection contribute to the immune response, and minimize inflammatory reactions.

Many scientist have studied the effect of Vitamin E on the immune system. Tengerdy (1989) hypothesized "that when Vitamin E is the oil phase of an adjuvant, the attraction of chemotatic cells, polymorphonuclear leucocytes, dendritic cells, macrophages, and lymphocytes to the adjuvanted antigen elicits a local inflammatory reaction and an immune response, which is amplified by the Vitamin E. All the Vitamin E administered in the adjuvant is targeted to the cells contacting the adjuvant; thus, the effective concentration of Vitamin E is much higher than in dietary supplementation." The work of Sheffy and Schultz (1978) and Campell (1974) on the effects of Vitamin E in vitro demonstrated that its immunopotential can be the result of a direct action on the functioning cells. Gebremichael (1984) indicated antigen-presenting macrophages as cells supported by the Vitamin E supplement.

Diluvac Forte is a safe and tissue friendly adjuvant. Studies performed comparing Diluvac Forte with physiological saline demonstrated Diluvac Forte had a lower number of animals with tissue reactions than the physiological saline. Safety of the adjuvant has been demonstrated through extensive testing. Several different antigens adjuvanted with Diluvac Forte were tested in pregnant sows resulting in no systemic reactions and minimal local reactions. Another safety study demonstrated pregnant sows and growing pigs showed no side effects despite receiving multiple administrations (8) in one week.

Diluvac Forte adjuvant ensures an optimal immune response in pigs while minimizing local reactions and providing excellent syringeability even in cold weather.

Product Information

Myco Silencer® MEH*

Erysipelothrix Rhusiopathiae- Haemophilus Parasuis-Mycoplasma Hypopneumoniae Bacterin

Patent No. 5,650,155, 5,667,784 and 5,968,525

INDICATIONS:

For use in healthy swine as an aid in the prevention of erysipelas caused by *E. rhusiopathiae*, pneumonia caused by *M. hypopneumoniae* and polyserositis (Glasser's Disease) caused by *H. parasuis*.

PRODUCT DESCRIPTION:

This product contains inactivated cultures of *Erysipelothrix rhusiopathiae*, 2 strains *Haemophilus parasuis* and *Mycoplasma hypopneumoniae* in the patented Diluvac Forte® adjuvant.

DIRECTIONS FOR USE:

Shake well, aseptically inject intramuscularly (IM). Administer a 2.0 ml dose at 3 weeks of age or older, followed by one 2.0 mL dose 3 weeks later.

CAUTION:

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FOR VETERINARY USE ONLY

READ AND FOLLOW LABEL

*U.S. Patent No. 5,650,155, 5,667,784 and 5,968,525.

For more information about
Intervet Products
call **1-800-835-0541**



INTERVET INC., Millsboro, DE 19966

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20015MAG06/01