SCHERING-PLOUGH ANIMAL HEALTH
technical service bulletin

Reducing Stress in Poults

Poults undergo the most stress during brooding at 2 times: 0-2 weeks of age, and 6-8 weeks. We'll discuss these 2 periods separately.

The major causes of stress at 0-2 weeks of age include bad poults, bad litter, bad water, bad feed, not having enough feeders or waterers, or not being ready for poult delivery.

1. Bad poults can be reduced by purchasing clean poults appropriately injected with antibiotics, and working with the hatchery to check other problems. Hatchery-performed services should be checked — look for proper debeaking and detoeing. Remember that most hatchery problems show up within the first few days after the poults arrive — after they've been exposed to the house. For this reason, save your DOA's (dead on arrivals) in your freezer until the rings are removed. This way you have a sample ready of poults not exposed to your house-poults with problems only from delivery or the hatchery. Integrated producers may want to work with the hatchery and breeder managers to place poults in rings by breeder flock to check poult performance from the breeders. This can be of great help in detecting both problem poults and problem breeders. Bad poults should be removed by vigorous culling — almost never recover into profitable birds and are more likely to carry disease than healthy poults.

2. Bad litter can be prevented by changing litter after diseased flocks or after every 3-5 flocks. Your chances of carrying a problem over increase every time litter is reused. Thorough formaldehyde treatment of the litter can be helpful in reducing the chance of disease carryover, if done properly. Watch the energy and salt levels in the brooder ration. High energy and high salt diets will make the droppings wetter and irritate the gut. Feeding a starter ration with some oats in it may result in lighter poults at an early age, but they should gain it back on your grower rations, and the blander diet will keep their guts and your litter in better shape. Crusts around feeders and waterers should be removed as frequently as labor will permit. Wet, damp crusts are loaded with bacteria compared to dry litter — removing them will reduce your poults' early exposure to disease, and keep their feet from getting sore.

3. Drinking water can carry both E. coliand Alcaligenes faecalis(the bacteria causing ART or turkey coryza) in large numbers. If the temperature is over 80°F (as it should be in a brooder), these bacteria can double in number every 20-30 minutes. Fill the waters just before the poults arrive so the bacteria don't have time to multiply. Clean fountains daily if at all possible to reduce early exposure to these diseases, both of which can spread with in a flock through the water. Chlorination can help with, but is not a substitute for, this cleaning.

4. Bad feed is usually old or wet. This can lead to trouble with molds, bacteria, or drug residues. Remove old feed, clean all lines and boots, and plug any leaks in the system, both to keep water out and to keep feed in.

5. Provide enough feeder and water space: 1.5-2" of feeder/bird and 0.5-1" of waterer/bird can be used as guides, but the important thing is this – if you receive more poults than before, or place more poults/ring, add a proportionate amount of feeder and water space. Brooding equipment isn't so expensive that a few extras can't be available.

6. Be ready for delivery. Have the building clean and warm, waterers filled and feeders ready to go. Every hour without feed or water (particularly water) increases the chances a poult will die.

Fewer things cause stress at 6-8 weeks, but those few are critical. They include overcrowding, improper ventilation, and the high growth rate of the poults at this age.

1. Causes of overcrowding are simple: Either the house is too small or there are too many birds in it. Measure your houses and make sure the square footage is there that you think. Order and accept the right number of poults.

   Birds begin to grow at a fantastic rate at about 5 weeks of age, which also makes time critical in overcrowding. If you were planning to move them at 6 weeks and get delayed until 8 weeks, they will be severely overcrowded. The effects of overcrowding can be severe. It makes ventilation harder to control — dust, ammonia, and air-borne bacteria all increase. Litter management gets harder, both because of the ventilation problems and because manure output/bird is increasing rapidly. Overcrowding is also hard on equipment and growers, as well as the poults.

   The easiest solution to overcrowding is prevention: Measure your houses and allow about .75 sq. ft/bird at 6 weeks and 1 sq. ft. at 8 weeks. If moving will be delayed, place fewer birds. Once overcrowding occurs, feeders and waterers should be added, and ventilation should be carefully supervised by an experienced grower or serviceman. The tendency should be to overventilate even if it uses more gas. Management should be careful not to criticize energy costs in these cases — let growers and servicemen do their jobs. Management's job should be to prevent overcrowding, not supervise it after it's happened — that takes somebody in the field at least daily with the flock. 5% over-crowding may work sometimes — 10% can lead to trouble.

2. Improper ventilation can be caused by either overventilating or underventilating. Overventilating is fairly uncommon and is usually caused by unusually dry weather, inexperience, or inadequate supervision. Underventilation can be caused by over-enthusiastic energy conservation, incorrect fan or fan motor size, poor maintenance of ventilation equipment, inexperience, or inadequate supervision.

   Improper ventilation can result in wet litter, increased ammonia levels, or increased dust and air-borne bacteria levels – these can lead to bad legs and respiratory disease. Remember that the major causes of respiratory disease are ammonia, dust, low humidity, disease, and overheating, probably in that order. Most people can just barely smell ammonia at 10 ppm in the air — 20 causes respiratory damage and reduced feed efficiency — 50 causes nasal and eye irritation, and will usually lead to disease, most often *E.coli*, infections. It will also make it uncomfortable in the house for your grower, which means the flock will probably be inadequately supervised. Low humidity can also cause some respiratory irritation and may encourage formation and spread of aspergillus spores. Overheating will cause poults to breathe through their mouths, which means they aren't using the very efficient dust and bacteria filters in their nostrils. This means more dust and bacteria will get into their tracheas and airsacs.

   Improper ventilation can be prevented by adding and using fans and heating equipment, sometimes despite energy costs; adding misters or foggers for dust control if necessary, and avoiding overcrowding. In some cases, managers must decide whether to add ventilation equipment, reduce bird numbers, or accept respiratory disease losses, including fowl cholera vaccination reactions. Putting pressure on the grower or serviceman may not be the answer.

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