

# **There's one more reason to strive for dry litter — chicken paws**

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We frequently encourage producers to pay close attention to the condition of the litter in their poultry houses because wet litter produces ammonia, which can increase the incidence of disease in the flock. But, ammonia also can cause damage to the birds' feet; and that can interfere with a valuable source of income.

Integrators in the U.S. are increasingly realizing that chicken feet have value. Where once the chicken feet were sent to a rendering plant as offal, now integrators are exporting the paws to countries where they are considered a delicacy. Chicken paws are quickly becoming a significant business. (The poultry industry differentiates chicken paws from chicken feet. Chicken feet include the shank portion of the leg. Chicken paws are the feet cut off at the ankle.) However, paws that are damaged by ammonia in the litter have no or little value. Therefore, excessive ammonia, caused primarily by wet litter conditions reduces a producer's potential income.

In the first 11 months of 2008, U.S. integrators exported 484,584 metric tons of chicken paws at a value of more than \$248 million, according to the USA Poultry & Egg Export Council. That is an increase of 23 percent over the tonnage exported for the same period in 2007 and a 29 percent increase in value. Most USDA-inspected paws go to China, either directly or through Hong Kong.

The Chinese have long considered chicken paws a delicacy, and the dish frequently shows up at dim sum buffets. There are a variety of ways to prepare them: the most popular include boiling or deep-frying.

However, for a company to sell the paws the feet must be in good shape; and that means no footpad dermatitis, a burn like condition.

Georgia produces about 20 percent of the chicken paws exported from the U.S. Dermatitis and other conditions that downgrade the feet results in an estimated loss of about \$100 million to the Georgia poultry industry, according to the University of Georgia College of Agriculture and Environmental Sciences. Other recent university studies have demonstrated ammonia concentrations above 25 ppm have an impact on a grower's settlement check.

Footpad dermatitis and other foot conditions are the result of excess ammonia. Ammonia is the natural by-product of the chemical reaction between manure in the litter and moisture. The wetter the litter, the more ammonia is produced. Moisture in the poultry house can have any number of sources, ranging from the natural humidity in the air, to foggers and evaporative cooling pads, to the watering system. You can control some, but not all, of these sources.

You can manage ammonia levels by paying close attention to litter conditions. If the litter is too wet, it's time to do some detective work and find the source of the moisture. The best way to quickly determine litter condition is to grab a handful near a drinker and squeeze. If the litter clumps together in a ball, it is too wet. If the litter falls apart immediately, it is too dry, creating dusty conditions that can harm production. If the litter clumps briefly and then crumbles apart, it has the correct moisture content — about 20 to 25 percent.

The consequences of wet litter and high ammonia levels cannot be over emphasized. People usually can detect ammonia at around 15 parts per million (ppm). However, prolonged exposure desensitizes the nose. Some growers who have worked in the poultry house environment for years cannot detect ammonia at 50 ppm, a level considered threatening. The U.S. Environmental Protection

Agency says humans should not be exposed to 25 ppm for eight hours or longer and exposure to 35 ppm should not exceed 15 minutes.

Ammonia and wet litter also foster disease in the flock. Even at a level of 5 ppm (undetectable to the human nose), ammonia can irritate the protective lining of a chick's respiratory system, making it more susceptible to disease. And, the wet litter conditions encourage pathogens to grow. Among the more serious diseases fostered by wet litter are avian influenza, exotic Newcastle disease, gumboro, botulism, E. coli and salmonella. Wet litter also encourages coccidiosis.

There are several things producers can do to reduce ammonia levels:

- Most importantly, operate the watering system at the lowest possible pressure that will provide the birds with all the water they need to thrive but not more that will wet the litter. Ziggity recommends determining water pressure through litter readings.
- Maintain adequate ventilation in the house, even in winter. During cold weather, many growers will reduce ventilation to save on heating costs. The loss of income because of the ammonia can rapidly outpace any savings on heat.
- Immediately remove any wet spots that develop and replace with dry litter.
- Ensure there is adequate drainage around the house to prevent surface water from getting in.
- Remove all caked litter after each flock and ventilate the house well to dry the litter.

Wet litter and ammonia pose very real threats to your poultry flocks and to your settlement checks. A little extra management work can ensure your flocks are healthy and their paws are worthy of export.