



Poultry Litter Management, Bird Health and S-Carb®

Maintaining litter quality is an ongoing management challenge for poultry producers. The optimum litter moisture has been cited as between 35-30% by weight. (Bland & Ghazikhanian, 1998). Litter quality is well documented to have potential effects on flock performance. Problems with dry litter can lead to dust, and subsequent respiratory challenging. Wet litter however, can be a more significant problem. Primary causes for wet litter are:

- Leaking waterers or water lines
- Improperly adjusted foggers
- Nutritional imbalances
- Excessive bird density
- Poor ventilation
- Disease agents

Wet litter may promote bacterial growth, and subsequent organic matter decomposition that is associated with high ammonia levels. Ammonia levels have consistently been associated with contact dermatitis, foot, hock and breast burns, potential leg problems, and respiratory disease. (Estevez, 2002). Wet litter can also enhance the growth of coccidiosis by providing an ideal environment for oocyst growth. (Lacy, 2003). All of these challenges can result in downgrades and reduced performance.

Nutritional imbalances that may lead to wet litter are diets that contain excessive protein, diets high in fat – particularly when the fat is poorly digestible, and diets high in salt. When evaluating dietary salt levels it is important to remember that both sodium and chloride are involved. Research on dietary electrolyte balance (DEB) has shown that the balance of sodium, potassium and chloride can affect performance, and water intake. It has been shown that proper balance of these electrolytes can be an important tool in addressing wet litter problems.

Several researchers have evaluated the replacement of salt with sodium bicarbonate or sodium sesquicarbonate (S-Carb®). In these research diets, up to 6 pounds of salt was replaced with S-Carb or sodium bicarbonate, thus reducing the dietary Chloride, while maintaining adequate dietary sodium. This research supports the conclusion that it is high chloride and not sodium, which is associated with wet litter. Research published by McNaughton (2003) using broilers showed the replacement of 4 lbs salt with S-Carb resulted in 4% drier litter and the replacement of 6 lbs of salt with S-Carb resulted in a 6% drier litter than control birds at 49 days. Similar results were reported turkeys by Hooge (2003) showing the replacement of 6 lbs salt with S-Carb resulting in a 2% drier litter at 21 days.



Although it would be ideal to replace litter completely between flocks, this is not always a possibility. It is important therefore; to take steps to maintain litter quality throughout its usage. Some key points for maintaining litter quality are:

- Maintain adequate ventilation to allow for air drying
- Utilize quality litter, and store it properly before use.
- Adjust foggers and waters to optimum levels
- Properly balance the diet to improve litter quality
 - Balance protein levels
 - Maintain high quality fat ingredients.
 - Adjust dietary electrolyte levels of sodium and chloride
 - Replace 4-6 lbs of salt with S-Carb

REFERENCES:

Bland, M.C. and Ghazikhanian, 1998. Litter Management and Poultry Health; Poultry News, Summer.

Butcher, G.D. and Miles, R.D.. 1996 Causes and Prevention of Wet Litter in Broiler Houses. Univ. Florida, Extension Fact Sheet VM99.

Estevez, I; 2002. Ammonia and Poultry Welfare, Univ. of Maryland, Poultry Perspectives Vol. 4, Issue 1.

Hooge, D. Sodium Supplements for Turkeys, 2003. e-Digest Volume 2, Number 7

Hooge, D.M., Cummings, and McNaughton; 1999. Evaluation of Sodium Bicarbonate, chloride, or Sulfate with Coccidiostat in Corn-Soy or Corn-Soy-Meat Diets for Broiler Chickens. Poultry Sci. 78:1300-1306.

Hooge, D., (2003) Influence of Dietary Electrolytes and Their Interaction with Ionophore Coccidiostats on Broiler and Turkey Performance, Arkansas Nutrition Conference.

Lacy, M.P.; (2003) Litter Quality and Broiler Performance, Univ. of Georgia College of Ag and Environmental Sciences – December.

McNaughton, J.L and Plocher, W.; (2003) Effect of Sodium Sesquicarbonate, S-Carb, and Sodium Bicarbonate on Performance of Growing Broilers and Processing Factors. Arkansas Nutrition Conference

Sperber, R. (2000). In Poultry Production, Better ventilation can reduce Salmonella and E.coli, Meat and Poultry Online