

Litter Amendments – Why and How?

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Managing litter is a key component in modern poultry production. The days of cleaning out the litter after each flock are gone and recycling bedding sources has become the new normal, particularly as grower's transition to reduced or no antibiotic use and the ever growing emphasis on animal welfare standards. With the recycling of the bedding comes a new set of best management practices for growers to utilize in their operations to get the most bang for their buck. Litter amendments are no longer used just to control the ammonia, we now look to them to provide "more value" to the operation. Before we can talk about how amendments are used, we must understand the importance of managing litter.

The first step is to start with a good bedding source, wood shavings (not hardwoods), being the most popular source – however it is not as readily available as it once was! This is leading integrators and growers to find alternative bedding sources such as rice hulls, peanut hulls and grasses. The key is to use enough material (4-5") to help absorb all the moisture being generated within the house. When farms are brand new or have just cleaned out, minimum ventilation rates are critical as many folks don't see the need to ventilate for ammonia – lack of ventilation early in the flock will only make the challenges of litter management that much harder.

When repurposing/recycling litter, you must understand that it is an ongoing process. What you do during and between flocks will impact subsequent flocks therefore affecting the efficacy of litter amendments. Things worth focusing on are litter depth being adequate, keeping drinker pressure regulated, raising water lines on a regular basis and making sure you run enough minimum ventilation to remove the moisture being added by the birds, approximately 70 - 80% of the drinking water is excreted. A modern poultry house, depending on size, can add anywhere from 50,000 – 100,000 gallons of water to the litter throughout the flock. Improper house management will lead to difficulty removing additional moisture from the house. House conditions during a flock impact not only bird performance but how you will condition litter between flocks. Not removing excess moisture will lead to less effective ammonia control from amendments.

Common practices for between flock litter management include de-caking the poultry house, windrowing or removing all litter from the house, pulverizing the house as the sole litter management is not recommended. De-caking a house removes large chunks of litter, therefore removing particles which can cause additional caking and high levels of ammonia. Windrowing requires all litter to be piled up and goes through a heat cycle which will help reduce pathogen numbers and dry out the litter with proper temperatures. Total cleanout removes all litter from the house/barn and requires a new bedding source to be added. When pulverizing, the larger chunks are beat up and broken down in size, but the moisture is never removed from the house and there is more surface area for the ammonia to be released – this is why pulverizing is not recommended as a sole means of litter management.

Amendments, initially utilized for ammonia control on built up litter during cold weather, now have a broader purpose. Today we look for amendments to provide not only ammonia control but more value year round such as animal welfare standards, pH reduction, binding phosphorus and drier floors. There are various types of amendments on the market today, most common being acidifiers. As a result, we will focus on strictly acidifiers. All acidifier amendments "work" when applied – longevity of the

products is highly dependent on house conditions at time of application and how house is managed post application. Product failures are most common when ventilation of house ammonia is not managed per manufacturer's recommendations.

The two most common amendments being used in non-organic poultry production are aluminum sulfate and sodium bisulfate. Each product comes with positive and negative attributes. Both products control ammonia; however, the best management practices are completely different. When using the products, following manufacturers guidelines will only enhance the effectiveness of the amendment. The main commonality between the products is that litter preparation will significantly impact the efficacy of the products.

In today's poultry production value added amendments are the key to grower and integrator successes. The movement toward reduced or no use of antibiotics has put a new emphasis on best management practices. Whole house applications are becoming the new normal in our industry. Finding products which can be applied with birds in the house when hiccups occur is also critical as we move forward. Mid flock applications can not only reduce ammonia levels but can drop the litter pH to slow down bacterial overloads which could cause mortalities. Some farms have been able to reduce the severity of dermatitis by applying amendments when the outbreak occurs.

Litter amendments enhance our business every day and the value of them is becoming greater as each day passes. Understanding why you are using them and how to get the most benefit from them will only enhance your operation and improve your flock performance.