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BROILER TIP . . .

TREATING WET LITTER AND FLOORS IN POULTRY HOUSES

Poultry growers at times suffer from wet floors, wet litter, water leaks, and other conditions that may warrant some drying agent to improve the in-house environment. The use of drying agents in agriculture is an age-old practice. Wet floors, even standing water can be “mopped up” through the use of these products.

In general, a drying agent is a product that wicks away or absorbs or transfers the moisture from one material to another. This is done primarily through the porosity of the given material. As an example, a highly porous sponge picks up water from a hard surface that has little or no porosity. The pores in the sponge trap and hold the water. Sponges that have many small pores will hold and retain more water than sponges with fewer, larger pores. These same principles apply to drying agents wherein the porosity of the material will determine its absorbent qualities.

Historically, using lime as a drying agent has been a common practice in agricultural buildings. Recently, several poultry growers have asked: “Can I use lime in my poultry houses to dry up wet litter and floors?”

To answer this question, let’s look at the properties of lime. Lime or limestone is a naturally occurring mineral. Mined from the earth, farmers have been using lime in their fields to help neutralize soil pH and increase fertility for centuries. Lime has also been commonly used as a drying agent. As with many organic materials, limestone is porous and as such, has a potential water holding capacity. Hydrated lime is the most frequently used lime product as a drying agent. Agricultural lime, the lime commonly spread on land to adjust soil pH, is sold as a damp powder since dry lime is very dusty and difficult to handle. The added water in agricultural lime diminishes the potential water holding capacity of the lime making it somewhat self-defeating as a drying agent.

Using lime as a drying agent for wet floors or wet litter in poultry houses has some inherent problems that must be considered. Lime products can be caustic or corrosive. As such, they can

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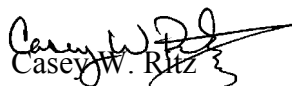
pose a respiratory danger to individuals that apply the product and may potentially damage poultry house equipment. More importantly, lime by nature is highly basic. Lime products raise the pH of the medium to which they are applied, whether it be soil, water, or poultry litter. Ammonia-producing microorganisms flourish in a more neutral or basic environment. When applied to poultry litter or the floor of a poultry house, lime will raise the pH value. As the pH increases, so does the release of ammonia from the litter and house floor. This can result in increased ammonia levels within the poultry house. For this reason, whole floor treatment with lime in poultry houses is not recommended, particularly when the ammonia level in the house is already high. Spot treatment with lime will dry up wet spots in the house. Bear in mind, however, that even with spot treatment, ammonia levels can increase as a result of the rise in litter or floor pH after lime application. Given the aforementioned factors, lime products are generally not recommended for use in poultry houses.

An alternative to using lime as a drying agent in poultry houses is the use of absorbent clays. Clay-based products are particularly well suited to act as drying agents. Major League Baseball parks use clay products to quickly dry the base paths after a rain to resume play in short order. Absorbent clay products have a water holding capacity 5-10 times greater than lime, due to the smaller, more numerous pores found in clay. Reflecting back to our sponge example, the small pore size of the clay holds the water much more readily than does the larger pore size of lime. Some absorbent clays have been more specifically tailored for use in poultry houses and function also as litter treatment products to help control ammonia production. Unlike lime that can be quite caustic and pose hazards with its use to both the grower and poultry house equipment, clay by itself is inert or lacking in biological or chemical reactivity. Given their increased water holding capacity and chemical neutrality, clay-based products are more suited for treating the wet litter and floor of a poultry house than lime.

To correct for wet conditions within the poultry house, use the following recommendations:

1. Check excavation and drainage around the building to ensure that storm water is being diverted away and not causing a seepage issue under the pad.
2. Repair water system leaks, breaks, and drippy conditions. Treating the cause first always helps to prevent reoccurring problems.
3. Use a clay-based drying agent. Some products will also contain ammonia-reducing chemical additives and are marketed as poultry litter treatment products.
4. Adequately ventilate. Given time, ventilation can dry any wet litter condition.
5. When all else fails, clean out and set out to allow enough time for the litter or floor to appropriately dry out.

When using a drying agent, as with all farm chemical products, care should be taken to protect yourself and your equipment during application. Even inert materials can produce dusty conditions that may affect the respiratory health of some individuals. The use of protective clothing, gloves, and goggles is recommended with any agricultural chemical application.



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