



Why Use Built-Up Litter for AZOMITE® Broiler Studies?

Several pathogenic microorganisms, such as *Salmonella typhimurium*, *Escherichia coli*, *Campylobacter* species, and *Clostridium botulinum* may be present in poultry litter. The presence of any of these pathogens challenges baby chicks. Some microbial strains can even cause death to chicks placed on “green litter” (no aging after bird removal). The poultry producer is aware that the green litter may also contain various coccidial species and viral pathogens such as L-T and Newcastle disease. Additionally, the pH of green litter may approach pH 8.5 due to the presence of high levels of ammonia that are being generated hourly by microbial action on protein from chicken manure. These conditions are not ideal when placing a batch of young birds, if one expects them to live and thrive until harvest.

The poultry industry has adopted a standard practice that helps to reduce the impact of the microbial and viral pathogens and the undesirable amount of ammonia that is released from the green litter. This practice requires the green litter to be “aged” for 10-14 days (“built-up litter”) before placing a new batch of baby chicks on it. In this procedure, water is prevented from contaminating the litter material, and the farm manager may add an inch or two of new wood shavings to the top of the used built-up litter. Over the 10-14 day period of aging, the pH of the litter slowly drops as the ammonia degasses itself from the litter. The aging generally leads to partial inactivation of the microbial and viral pathogens through the slow composting process.

After thorough composting, litter is well suited for further utilization. It was observed as early as a few decades ago that litter could be composted in the house if it could be left unattended for several months. As few producers could afford to leave a production house empty for several months, various government organizations have developed procedures to be used to insure that the litter is free of potential pathogens before it is sold to the consuming public; e.g., for fertilizer or as ruminant feed. [see USPEA Final Report; J.S. Jeffrey, University of California, Inactivation of Bacteria in Stacked Poultry Litter, presented at the 50th Western Poultry Disease Conference, March 2001. In the latter study, the investigators placed packets of pathogens at different depths in stacks of composting litter and removed them at various times to measure the percentage surviving the procedure. This revealed the kinetics of the killing

process, primarily due to the development of internal temperatures above 160 F and to the low pH of the litter.] These procedures recommend piling litter in deep piles, windrows, etc. where the composting (inactivation) process can occur more rapidly.

In conclusion, placing baby chicks on 10-14 day aged built-up litter actually exposes them to a wide variety of microbial and immunological challenges. Testing AZOMITE® or any other product that has been shown to act on the immune system of the birds will be affected by whether or not the birds are exposed to a challenge. If the litter has completely composted over a period of many months, then the challenge will be far less than placing them on built-up litter. As indicated above, industry experience indicates that leaving litter setting in a house for about a year is sufficient to totally inactivate these microbes and produce litter acceptable for sales. Time is the ultimate sterilizer and sterilized litter does not present a typical industry challenge to the baby chicks.