LITTER forum
by JONES-HAMILTON CO.
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Benefits of Pad Acidification with PLT® Litter Acidifier: A Field Study of 100 Broiler Houses

In the United States, the majority of poultry houses are constructed on top of a dirt pad. Many growers notice that their performance begins to slip as more and more flocks are raised in a house even though the houses are still well-managed. Growers also observe that no matter how thoroughly they clean and disinfect a house after a disease outbreak, the disease challenges tend to linger on. This is because the dirt pad in a poultry house will absorb ammonia increasing pad pH to a pH of 8-10. This high pH is very favorable to bacterial and viral growth and survival. In addition, most disinfectants are very high in pH and are inactivated in the presence of organic material so they are unable to disinfect the dirt pad in the house contributing to these lingering problems.

One way to combat these problems is by using the same litter acidifier you use at brooding in a new way: directly on the dirt pad itself. One hundred broiler houses on 25 farms in five complexes were selected to test the field efficacy of PLT® litter acidifier in reducing pad pH and improving broiler performance (Donald, 2003). Farms were selected that had slipped in performance as the farm aged or had lingering disease challenges even after a complete clean-out orin-house windrowing of litter. After a very thorough cleanout all the way down to the pad, the houses were washed down and disinfected as usual. PLT® was then applied directly to the pad at a rate of 100 lbs./1,000 sq. ft.

The improvements seen on these farms compared to their previous performance was conclusive. Farms saw a 12 point improvement in feed conversion, a 4% improvement in livability, and a cost improvement of $0.0075 per lb (Fig. 1 and Table 1) in the three flocks after treatment compared to the flocks the year prior to treatment. Growers were able to pay for the cost of the PLT® application and make a substantial profit from the improved performance.

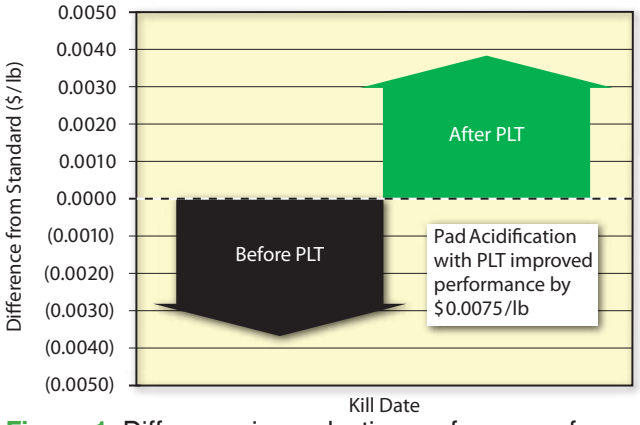

Figure 1. Difference in production performance from standard for the flocks one-year prior to PLT® pad acidification compared to the three flocks after PLT® treatment.

Treatment Group	Feed Conversion	Livability
PLT	1.96	96.3%
Control	2.08	92.24%

Table 1. Performance Improvements with PLT® Pad Acidification

The average pH of the houses before treatment was 7.8 while the average pH after PLT® treatment was 1.8. This low pH makes the dirt pad very hostile to bacterial, viral, and fungal pathogens. In one study completed by the University of Arkansas (Watkins et al, 2003), the use of PLT® for pad acidification reduced the bacterial counts in the dirt pad by six logs, a 99.999% reduction in bacteria (Table 2).

House	Pre-Application	24 Hours Post-Application	48 Hours Post-Application
Control	8,525,000	22,380,000	28,250,000
PLT Treated (100-lbs /1000 sqft)	6,732,500	91	22

Table 2. Bacterial Counts on the floor of a poultry house treated with PLT® Litter Acidifier (Total APC CFU/Sample.)

Proper Steps to Pad Acidification with PLT® Litter Acidifier

1. Wash down or blow down the ceilings and side walls of the house.
2. Spray the ceilings, sidewalls, and equipment with a disinfectant, preferably one that is acidic.
3. Completely clean out all the old litter from the house down to the dirt pad.
4. Remove all litter from the corners and under fans. Sweep around footings if necessary.
5. Make sure that absolutely no litter remains in the house.
6. Be certain to completely remove the tarry, black layer just above the pad prior to acidification. This layer is high in anaerobic pathogens such as Clostridium sp.
7. Apply PLT® evenly to the whole floor at a rate of 100-150 lbs./1,000 sq. ft.
8. Let the PLT® sit for several days before spreading new litter in the house.

References:
Jim Donald and Susan Watkins. Treating Poultry House Floors to Improve Poor Performance. The Poultry Engineering, Economics, and Management Newsletter. Auburn University. Issue 23. May 2003.

SE Watkins et al. Evaluating Effectiveness of Poultry House Sanitation. Proc. 2003 Virginia Poultry Health & Management Seminar. Pp 64-67.

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