

pH MATTERS

by JONES-HAMILTON CO



EXCESS AMMONIA IN WINDROWED LITTER: WHAT IS A SUFFICIENT RATE OF PLT®?

Over time, windrowing can reduce litter quality as it degrades into very small particles, which reduces its absorbent capacity and increases surface area, thereby raising ammonia levels. Windrowed houses have some of the highest ammonia readings in the field, commonly reaching 200-500 PPM+ especially on large-bird programs. Ammonia levels on windrowed litter are rarely below the 25 PPM needed to maintain tracheal health. If the high levels of ammonia are not neutralized, flock health can suffer.

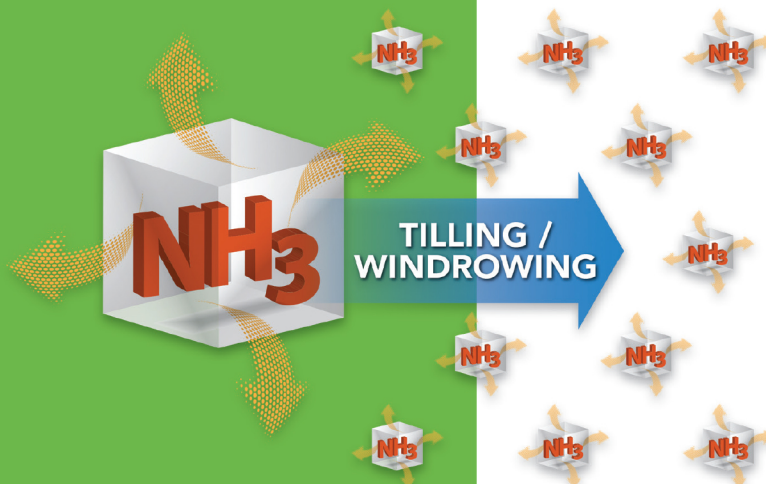
WINDROWED LITTER AND PLT® APPLICATION RATES

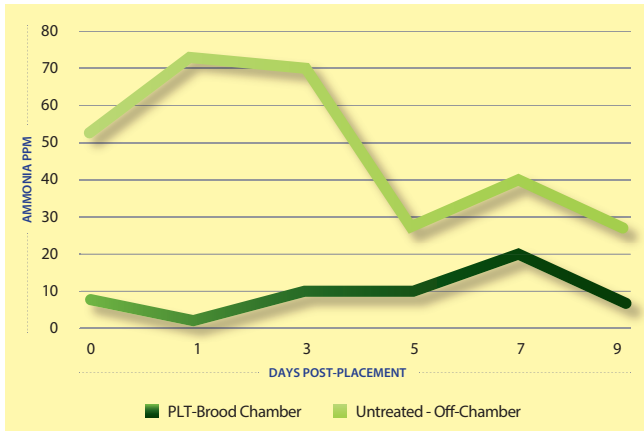
At the standard rate of application in conditions typical for windrowed litter, all litter amendments will be quickly overcome by the increased ammonia challenge.

A study was conducted on two commercial broiler farms on a large-bird program with litter that had been continuously windrowed over an extended period of time (9 years) with the goal of determining how much PLT® was needed for ammonia control and pH reduction.

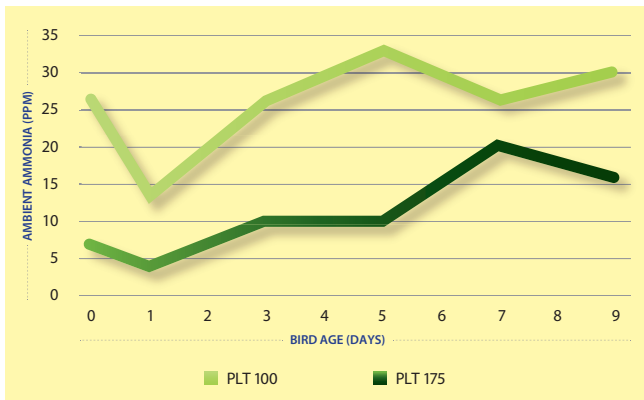
Six houses at each farm were pre-heated for 48 to 72 hours prior to chick placement in order to reach the target surface and core temperatures of 90°F. Ammonia was then exhausted from each house 15 minutes prior to PLT® application in accordance with standard application procedures.

Deep litter ammonia readings (two inches below litter surface) were taken to determine the appropriate rate of PLT® application to neutralize the ammonia challenge in the litter on these farms. Because readings maxed out the ammonia sensing equipment at over 520 PPM, a rate of 175-lbs./1,000 sq. ft. of PLT® was chosen. This was compared to our standard minimum rate of 100-lbs./1,000 sq. ft. which is usually used when deep litter readings are less than 150 PPM ammonia.

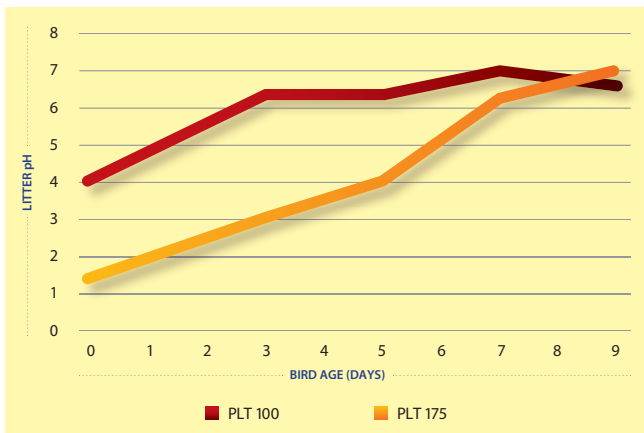




Once chicks were placed, the extreme ammonia challenge of the litter was verified by the difference in bird-level ammonia readings between the warm brood chamber and the cold off-chamber.



As expected, houses with the lowest ambient ammonia concentrations for the longest period of time (for the duration of the study period) had the highest PLT® application rate (175 lbs./1,000 sq. ft.).



The 175 lbs./1,000 sq. ft. rate was also able to maintain a litter pH below 4 for up to five days. In comparison, pH on litter using the lower application rates exceeded a pH of 4 by day three, another indicator that the rate was too low for the extreme ammonia challenge that windrowed litter presents.

Due to the high-ammonia challenge, windrowed litter requires increased PLT® application rates to achieve low ammonia and litter pH during the brooding period.



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