

Ammonia in the Chesapeake Bay from Poultry Houses Could Soon be Gone

New Technology Developed by AviHome, University Researchers Eliminates Ammonia

Salisbury-based AviHome LLC and researchers from the University of Maryland Eastern Shore (UMES) have conducted successful trials on a new type of flooring for poultry houses developed by AviHome that dramatically reduces ammonia emissions and promotes faster-growing and healthier chickens. The project received funding from MIPS through the Maryland Department of Natural Resources.

Chicken house floors are typically covered with litter (wood shavings and sawdust), which serves as bedding and absorbs moisture spilled from the waterlines and/or excreted through the birds. When the level of moisture is not managed properly it is conducive to the bacteria and chemical reaction that produces ammonia.

AviHome engineers developed a patent-pending plenum flooring system with tiny holes in it that dries the area underneath the chickens, eliminates the need for litter, and reduces ammonia emissions.

Through several trials with more than 33,000 chickens, ammonia emissions were not just reduced but virtually eliminated.

The trials, conducted by Jeannine M. Harter-Dennis, an associate professor at UMES, found that the ammonia-producing bacteria need a basic pH (potentiometric hydrogen ion concentration, a measure of the acidity or alkalinity of a substance) to thrive, and AviHome's flooring prevented pH

from ever even going above seven (the neutral line between an acid or base), which prevented the production of ammonia.

"When you put litter into a chicken house it becomes a compost pile," says Harter-Dennis. "The reused litter is a breeding ground for ammonia-producing bacteria if the pH is basic. This system prevents a basic pH from developing, which then prevents the ammonia-producing bacteria from doing their job."

The chickens also grew 5-20 percent faster and were heavier; in fact, chickens in some of the trials weighed a pound more than the average birds during the same time frame.

"Our flooring appears to increase general bird health," says Felipe Correa, former operations manager for AviTech, which spun off AviHome to develop this flooring. "Whether attributed to improved air quality or the

lower bacterial load challenge, we are growing a healthier heavier bird faster; we are taking genetic potential to new levels-naturally."

Additional funding for the AviHome/University of Maryland Eastern Shore trials came from the Maryland Department of Natural Resources, the Maryland Department of Business and Economic Development, the U.S. Department of Agriculture, the University of Maryland Eastern Shore, the Maryland Hawk Corporation and the Rural Development Fund.

