



Organically Controlling Insects, Ammonia, and Hydrogen Sulfide in Poultry

Alpha Omega BioRemediation (AOB) designed a comprehensive management plan using our proven Manure Management Program® (MMP) to control production of ammonia, and other contaminants in a conventional egg-laying house. An environment with high ammonia levels and related contaminants also contributed to extensive insect infestations such as darkling beetles and flies. In addition, a method of natural insect control was becoming an increasing necessity as they were carrying disease and 'bothering' the chickens, hindering egg production.



The facility treated was a 50' x 750' high rise with an 8' high ceiling. The existing manure piles were 40-45 weeks of age and averaged approximately four feet in height. A second untreated control facility of the same size was carefully monitored and evaluated for comparison purposes.

Scope This project was specifically designed to (1) control ammonia and odors in the egg-laying facility, creating an environment where beetles and fly populations lacked the natural resources they needed to thrive; and (2) create a program that could be maintained without requiring extensive time on the part of operating personnel while limiting both workers' and animals' exposure to pesticides.

Reducing Ammonia and Hydrogen Sulfide. MMP® is a microbial consortia intended for the degradation of ammonia. MMP balances pH, reduces ammonia and hydrogen sulfide content in manure, ultimately reducing odor levels while providing a healthier environment for the animals and the workers. The table and the graph on the next page clearly show the magnitude of the decrease in the concentration of Ammonia in Parts per Million (PPM) for a treated as compared to an untreated facility. The substantial difference in NH₃ concentration is readily evident – and achieved in a short timeframe.

Days	Treated House 1	Untreated House 2	% Decrease
1	44	44	0%
3	42	42	0%
5	38	48	21%
7	30	40	25%
9	30	40	25%
10	26	39	33%
15	20	38	47%
20	14	41	66%
25	11	42	74%
30	9	36	75%

BENEFITS

Key Results

- All Natural Materials – NO Genetically Engineered Organisms or Chemicals
- Significantly Reduces Ammonia (NH₃) and Hydrogen Sulfide (H₂S) Concentrations
- Substantially Reduces the Instance/Population of Flies, Darkling Beetles and Other Insects
- Reduces Stress on the Pullets
- Fixes Nitrogen in the Manure
- Minimizes Waste Water Issues in Run-off and Retention Ponds

Producer Benefits

- Results in Increased Bird Weight
- Increases Egg Production
- Improves Quality and Effectiveness of Manure as a Soil Treatment
- Simple Application
- Replaces Costly Chemical Fogging Treatments

Environmental Benefits

- Neighboring Properties Experience Lower Odors
- Anaerobic Process = No Sludge
- Lower NH₃ and H₂S Concentrations Improve Work Environment

For Additional Information Contact:

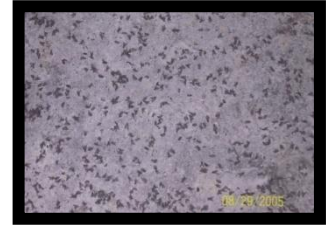
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Nitrogen Retention MMP NR is a blend of bacteria that will not only retain the nitrogen levels found in the manure but in many cases will increase nitrogen levels.

Barn Environment. In addition to lowering ammonia and hydrogen sulfide levels, our MMP® program reduces insect populations by significantly diminishing the resources that sustain them. Naturally controlling pH, levels of ammonia and odor causes insect pests to migrate away as the manure piles no longer provide a natural food source. MMP transforms a once hostile environment into a sustainable healthy environment that promotes healthier livestock and increased egg production. Insect reduction is merely a by-product of a healthy balanced barn environment.



Beetles had been originally introduced to the manure pits as a pest control device by farm management to feed on fly larvae and maggots drawn to the manure. However, they were beginning to eat their way into the wood frame of the poultry house, potentially causing major damage. Insects thrive in manure that has high ammonia levels and contaminants that they can use as food.

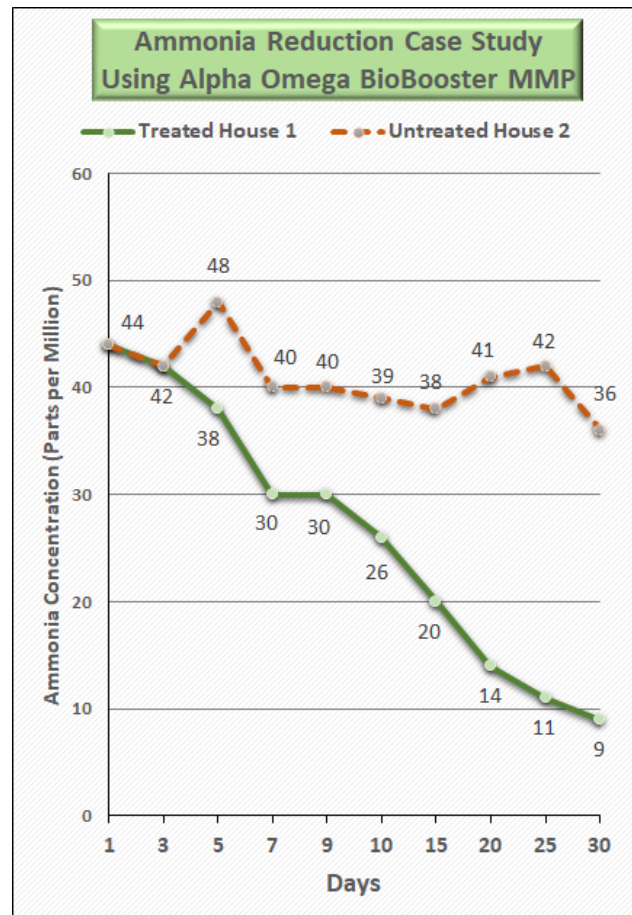
Dead flies and beetles were noticeable on the floors, which were very dense on the manure piles just days after in initial application of MMP®, an all-natural microbial consortia.

Empirical Results

- 5 days after the initial application, darkling beetle activity was noticeably reduced.
- 8 days after the initial application, the beetle and fly larvae were "drawn" away from other areas of the facility and to the manure pile surface in an effort to find dwindling resources.
- **13 days after the initial application, the larvae were gone.**
- Fly and beetle control has been maintained consistently since the initial application process began.
- Ammonia levels, with moisture control and Manure Management Plus, were contained to under 15 ppm.

Alpha Omega Bio-Booster® Alpha Bio-Booster is safe for use on poultry and livestock. It is safe for wildlife, birds, dogs, cats, and other domestic animals and pets. Farms with crop fertilizer, pesticide, and herbicide run-off and/or livestock manure on soil, storage ponds and open-air lagoons can all be treated with AOB all natural bio consortia.

About Alpha Omega BioRemediation Alpha Omega BioRemediation utilizes consortia of living organisms consisting of bacteria, fungus, algae, and protozoa to rebalance contaminated sites. In 1994, AOB began research on microbes that could clean and balance the environment. AOB's processes incorporate, exclusively, naturally occurring and proprietary microbes and use **NO GENETICALLY ENGINEERED ORGANISMS**. AOB provides specialized remedy teams which bring 80+ years of expertise to each and every project it undertakes. AOB processes and our team of thought-leading experts is the key component to AOB's 100% Bioremediation success rate for more than **20 years**.



For more information about the Results and our Products visit Alpha Omega BioRemediation on the Web
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