
POULTRY HOUSE AMMONIA CONTROL STUDY

March 2018

Poultry House **Pro**
Ammonia Buffer (PHPAB)

TEST 2

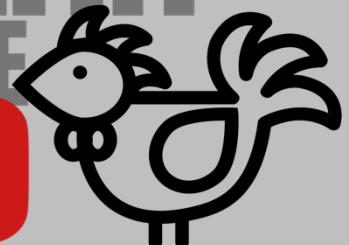


GREEN SHIELD LABS, INC.
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POULTRY
HOUSE

PRO



Ammonia Buffer Agent

OVERVIEW:

Location: Marion, Louisiana

Testing Period: March 3, 2018 – April 18, 2018

Test Duration: 46 Days

Target Test: Ammonia Reduction

Reason for Testing: This is a follow up test to validate ammonia control in a poultry house. Corporate/Commercial Grower was approached by Green Shield Labs, Inc. to perform a test to determine the performance of Poultry House Pro Ammonia Buffer for ammonia reduction. The Corporate/Commercial Grower had interest due to the product being organic and potentially resolve projected compliance issues, to be mandated mid-year 2018 by the Environmental Protection Agency, regarding organic solutions to ammonia controls and other environmental conditions in commercial poultry houses.

Type of Facility & Products Applied: Corporate/Commercial Broiler Farm

Barn 1: 16,000 sq. ft. open broiler facility, with curtains, utilizing Poultry Litter Treatment (PLT) for ammonia control, applied to existing bedding which had been prepared to industry standards. Applied via fertilizer spreader by corporate contracted applicator at the rate of 100-200 pounds per 1000 square feet.

Bedding: Existing litter that had been prepared per industry standards. All cake was removed.

Barn 2: 16,000 sq. ft. open broiler facility, with curtains, utilizing Poultry House Pro Ammonia Buffer for ammonia control, applied to existing bedding, **cake from previous flock not removed, see explanation below.** Applied via high pressure sprayer by Green Shield Labs technician at the rate of 13.63 gallons per 1000 square feet. ***For this test GSL technician lowered concentrate by two fewer gallons than previous test to study the results of lower PHPAB concentrate being applied and compare the affects to previous test. 218 total finished gallons, 12:1 ratio, 12 parts water to 1 part PHPAB.***

Bedding: Existing litter cake was not removed from this test barn due to heavy rains taking place and farmer could not get equipment in facility before new flock arrived without causing too much damage to facility. All existing cake was placed around the interior parameter walls. Control barn had litter cake removed so testing is not equal.

Ventilation: Identical ventilation settings and conditions applied to both barns

Monitoring Performed By: Corporate/Commercial Grower Field Staff and Green Shield Labs Technician.

Monitoring System: Rae Systems plunger with Colorimetric Ammonia Tubes.

Farmer/Grower: 26 years of experience in commercial broiler production.

Ammonia Test Results:

Date of Sample	Exterior Temperatures Hi/Lo °F	Barn 1 - Control Poultry Litter Treatment (PLT) Ammonia PPM	Barn 2 - Test Poultry House Pro Ammonia Buffer Ammonia PPM
Placement 3/03/18	65/39	No Sample Taken	No Sample Taken
3/06/18	69/37	20	25*
3/09/18	71/41	19	10*
3/13/18	62/36	23	12*
3/16/18	79/56	30	11*
3/20/18	63/45	30	20*
3/23/18	79/44	40	19*
3/30/18	69/47	60	20*
4/06/18	74/56	58	28*
4/13/18	79/64	35 Cool down started 2 days prior	20* Cool down started 2 days prior

*Barn 2 had litter cake that remained from previous flock. See bedding description above.

Poultry House Pro Ammonia Buffer continued to maintain lower ammonia levels that were below industry acceptable limits, even though two gallons less PHPAB had been used, compared to previous test, plus having left over litter cake from previous flock. Ammonia controls remained throughout the grow out period compared to barn 1, treated with PLT. Ammonia odors in the PHPAB treated barn had minimal ammonia odors throughout the grow out period, as would be evident by the lower ppm readings.

Testimonial from the farmer where study was conducted:

"After two consecutive tests in my poultry barns the Poultry House Pro Ammonia Buffer has worked better than any other product I have used for ammonia control. Lowest ammonia levels, last the entire grow-out period, dryer litter, considerably less caking, reduced odors, and it's organic. I highly recommend this product to farmers and corporations as THE solution to the ammonia problem we face in the poultry industry."

Green Shield Labs, Inc. is a manufacturer, formulator and distributor of patented and proprietary organic products for various agricultural, pest, lawn, golfing and other industries.



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