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# POULTRY HOUSE AMMONIA CONTROL STUDY

January 2018

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

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## TEST 1



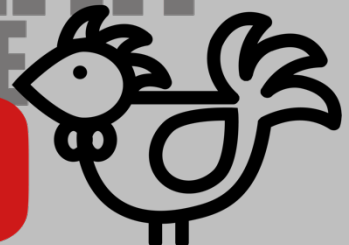
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GREEN SHIELD LABS, INC.  
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POULTRY  
HOUSE

**PRO**



Ammonia Buffer Agent

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# OVERVIEW:

**Location:** Marion, Louisiana

**Testing Period:** January 2, 2018 – February 18, 2018

**Test Duration:** 48 Days

**Target Test:** Ammonia Reduction

**Reason for Testing:** 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 prior to new bedding placement. Applied via fertilizer spreader by corporate contracted applicator at the rate of 100-200 pounds/1000 sq.ft.

**Bedding:** Old litter was removed and replaced with fresh rice hulls.

**Barn 2:** 16,000 sq. ft. open broiler facility, with curtains, utilizing Poultry House Pro Ammonia Buffer for ammonia control applied after bedding placement. Applied via high pressure sprayer by Green Shield Labs technician at the rate of 13.75 gallons/1000 sq.ft.  
*(220 total finished gallons/10:1 - 10 parts water and 1 part PHPAB)*

**Bedding:** Old litter was removed and replaced with clean rice hulls

**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 1/02/18	29/16	40	40
1/09/18	50/45	10	0
1/17/18	30/12	50	20
1/23/18	60/35	50	20
1/30/18	51/28	50	20
2/08/18	59/28	48	19
2/15/18	N/A	No sample taken/cool down process had started	No sample taken/cool down process had started

During the time of this test the area in Marion, Louisiana was experiencing temperatures that was below historical averages. Ventilation of facilities was limited during this test period due to the extremely low temperatures. Even under such conditions Poultry House Pro Ammonia Buffer continued to maintain lower ammonia levels below industry acceptable limits. 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.

Green Shield Labs technician had made some observations regarding the appearance of the broilers and watering lines, which should be noted. The broilers appeared to have wider breast and were taller in the PHPAB treated barn compared to the PLT treated barn. Watering lines in the PHPAB treated barn was raised off the floor 2-3 inches higher in weeks 4 and 5. After the broilers were removed the litter was considerably dryer with less caking in the PHPAB treated house compared to control house treated with PLT.

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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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