

AMENDMENTS FOR THE TREATMENT OF AGRICULTURAL WASTE
CONSERVATION PRACTICE JOB SHEET

The use of amendments to suppress ammonia volatilization from litter will reduce emissions from poultry production facilities. In these confined spaces, poultry litter amendments can improve air quality for poultry living in the houses, as well as humans working in this environment. Additionally, certain amendments suppress bacterial pathogens in litter and may improve poultry health. With the reduction of ammonia in houses, the need for ventilation may be reduced, resulting in potential energy savings.

The reduction of ammonia emissions will also increase the proportion of nitrogen in the litter, making the litter a more economically valuable and balanced fertilizer.

Specific litter amendments have been shown to effectively provide multiple benefits for air quality, water quality with products containing aluminum, and poultry health. Preference should be given to amendments with the greatest environmental and economic benefit.

The use of an amendment may alter the composition of the litter. Changes in litter nutrient content and/or consistency need to be identified and addressed in the poultry operation's nutrient management plan and waste management system plan.

A operation and maintenance plan shall be developed and reviewed with the operator and owner prior to implementation of the practice. The O&M plan shall be consistent with the purposes of the practice, safety considerations and label directions and other instructions provided by the vendor.



Photo by Stephen Ausmus, USDA-ARS

The O&M plan shall provide sufficient detail as to amendments to be used, application rates, timing, and equipment to be used. Refer to the Table 1 for a list of acceptable poultry litter amendments. This table addresses the rate, timing, method, and safety concerns for use of the products.

If the use of litter amendments will be cost-shared through federal or state programs, the selection of amendments should be mutually agreed to by all contractual parties and compatible with the intended end use of the litter.

All cost share contracts with litter amendments must treat the whole house at application rates listed in Table 1.



Photo by Anne Lynn – USDA, NRCS

Amendments for the Treatment of Agricultural Waste – Job Sheet

Landowner _____

Planner Certification	
Planner certifies they have reviewed the Operation and Maintenance section of this job sheet with the producer.	
Planner: _____	Date: _____

Implementation of the Plan: Indicate product information below	
Product to be used: _____	
Dates of proposed applications: _____	
Location in the structure: _____	
Planned application rate: _____	
Planned application dates	1. _____ 3. _____ 2. _____ 4. _____
Actual application dates	1. _____ 3. _____ 2. _____ 4. _____
Method of application: _____	

Certification (attach receipts)	
Producer self-certifies that litter amendment has been completed according to plans and specifications.	
Producer: _____	Date: _____

Table 1. Recommendations for Poultry Acidifying Litter Amendments ¹

Product trade name and active ingredient chemistry	PLT Sodium Bisulfate- NaHSO ₄	Poultry Guard Acidified Clay- 46% H ₂ SO ₄	Al ⁺ Clear Dry Alum- Al ₂ (SO ₄) ₃ -14H ₂ O	Liquid Al ⁺ Clear A7 Acid + Liquid Alum- 7% H ₂ SO ₄ + 36% Al ₂ (SO ₄) ₃ - 14H ₂ O	Klasp™ Compounded Iron III Sulfate Hydrate granules - patented formulation based on crystalline Fe ₂ (SO ₄) ₃ •nH ₂ O
Purpose	Decrease litter pH, bind ammonia.	Decrease litter pH, bind ammonia.	Decrease pH, bind ammonia and soluble phosphorus.	Decreases litter pH, bind ammonia and soluble phosphorus	Decreases litter pH, binds ammonia and soluble phosphorus.
Container size	50 lb bag, 2,000 lb super sack.	50 lb bag, 1,000 and 2,000 lb super sacks.	50 lb bag, 2,000 lb super sack, and bulk.	Bulk.	50 lb bag, 2,000 lb super sack.
Rates of application	93 lbs per 1,000 SF	93 lbs per 1,000 SF	100 lbs per 1,000 SF	25 gals per 1,000 SF	100 lbs per 1,000 SF (based on comparative studies to date with Alum)
Time of application in brood and grow-out chambers	Apply to whole house as close to chick placement as possible and not more than 1-day prior. For split applications, apply in off-chamber as close to bird migration as possible. Can be applied in the presence of birds.	Apply as close to chick placement as possible or movement to grow-out chambers and not more than 3 days prior. For split applications, apply one day before movement into off-chamber while birds are separated by curtains.	Apply whole-house 1-7 days before chick placement. Apply 5-7 days for dry litter and consider liquid acid alum for very dry litter.	Apply whole-house 1-5 days before chick placement, 1-2 days if wet litter, 3-5 days if dry litter. Cannot be used when birds are in the house.	Apply to whole house or brood chamber 1-4 days before chick placement or bird movement in off-chamber. Can be applied in the presence of birds.
Method of application	Spinner or drop spreader, no incorporation.	Spinner or drop spreader, no incorporation.	Spinner or drop spreader, incorporate top 1 inch if dry litter.	Certified applicator, no incorporation.	Spinner or drop spreader, no incorporation required.
Safety concerns	Wear gloves, goggles, particle mask, and clothing to protect exposed skin	Wear gloves, goggles, particle mask, and clothing to protect exposed skin.	Wear gloves, goggles, particle mask, and clothing to protect exposed skin.	Wear gloves, goggles, particle mask, and clothing to protect exposed skin.	Wear gloves, goggles, particle mask, and clothing to minimize skin/eye/respiratory contact.
Special handling and storage	Hygroscopic; store in dry location.	Hygroscopic; store in dry location. DOT – HAZMAT.	Hygroscopic; store in dry location.	Requires special equipment and trained applicator. DOT – HAZMAT.	Store in dry location. 2,000 lb super sacks are DOT – HAZMAT.

Notes:

¹Other products with ammonia and/or phosphorus-binding efficacy may be added to this list when scientific documentation becomes available.

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