Delaware Nutrient Management Program

DELAWARE CONSERVATION PRACTICE STANDARD

FEED RELATED AMENDMENTS

(Reported as Pounds of Amendment per Pound of Feed and AU's affected)

DEFINITION

The addition of chemicals and compounds to animal feeds to improve the health and feed conversion characteristics of the animal, or to modify the characteristics of the waste to reduce nutrient excretion.

PURPOSES

For purposes of this standard, additives are used to alter the chemical characteristics of the waste as part of a nutrient and waste management plan to:

1. Improve or protect animal health, and enhance animal feed conversion rates thus reducing the total quantity of manure produced.
2. Alter the nutrient content of the manure to reduce total nutrient loading to fields receiving animal wastes based on nutrient management plans.
3. To improve farm profitability by feeding nutrients more efficiently.

Common feed additives used in poultry diets include antimicrobials, antioxidants, emulsifiers, binders, pH control agents and enzymes (Phytase).

CONDITIONS WHERE PRACTICE APPLIES

This practice applies where the use of a chemical amendment(s) to animal feed will:

1. Improve the overall on-farm nutrient balance so that nutrients produced in the manure do not exceed the nutrients exported or land applied as fertilizers.
2. Reduce total manure and nutrients produced by improving feed conversion rates.
3. Alter the physical and chemical characteristics of the waste as a part of a planned nutrient and waste management plan.

CONSIDERATIONS

The use of an amendment will alter the nutrient composition of the waste. Some amendments have been shown to effectively impact multiple purposes of this standard and other aspects of a livestock production operation. Preference should be given to amendments with the greatest environmental and economic benefit.

One of the most effective feed amendments for poultry and swine is Phytase which lowers the amount of supplemental phosphorus required in the diet. Because of improved dietary phosphorus utilization, less phosphorus is excreted in the manure.

The selection of amendments should be mutually agreed upon by all contractual parties and compatible with the intended end use of the manure or litter.

Consider using management practices described in the NRCS Feed Management Technical Notes for the specific animal species.

CRITERIA

General Criteria Applicable to All Purposes

The diets for specific species of animals shall be developed in accordance with the following recommendations:

- Standards outlined in the most current recommendations of the National Research Council (NRC);
- Recommendations of a land grant university;
- Standards developed by the professional nutritionists of livestock and poultry production companies, feed companies, and/or feed suppliers, and/or other qualified professionals.

Laws, Rules, and Regulations. Use of amendments as a part of a waste management system shall be planned and implemented to meet all federal, state, and local laws, rules, and regulations.

Labeling and Instructions for Use. Products to be used as amendments to alter manure characteristics shall be labeled or accompanied by instructions containing the following information as a minimum:

1. Active ingredients and their percentage of the whole. Proprietary terminology may be used as long as the actual chemical and/or biological names are included.
2. The purpose(s) for which the amendment is intended.
3. Recommended application rate(s) to achieve the intended purpose(s).
4. Application timing and methodology to optimize the effectiveness of the amendment.
5. Incorporation requirements.
6. Special handling and storage requirements for the amendment. Note that Phytase is susceptible to degradation during extended storage periods.
7. Any safety concerns relating to the use of the amendment and recommended measures to overcome the safety concern, including any required personal protective equipment.

Validation of Product. The specific rate, timing, and application methodology of an amendment to achieve a needed level of treatment addressing a specific purpose must be documented by the University of Delaware animal specialist or other independent research entity acceptable to the NRCS. Documentation from peer-reviewed journals is preferable. Potential adverse impacts of the amendment on the ecosystem shall also be identified in the documentation.

PLANS AND SPECIFICATIONS

Plans and specifications for this practice shall be prepared in accordance with the previously listed criteria. Plans and specifications shall contain sufficient detail to ensure successful implementation of this practice. Documentation shall be in accordance with the section "Supporting Data and Documentation" in this standard.

The following components shall be included in the feed management plan:

1. Diets and feed management strategies to be used for the species of livestock or poultry produced.
2. Laboratory analysis of the formulated diet or of the feed ingredients used to formulate the diet, to determine its nutrient and nutritional contents.
3. The feed analysis must be conducted by a laboratory whose tests are accepted by the University of Delaware Cooperative Extension.
4. Estimated impact of feed management to maintain or improve livestock or poultry productivity.
5. Where nutrient content of manure is a concern, the measured nutrient content of the manure prior to the implementation of feed management on the operation, and the estimated impact that feed management will have on manure nutrient content.
6. Statement advising how often the feed management plan needs to be reviewed and revised by a professional feed management specialist.
7. Identification of the qualified feed management specialist who developed the plan.

OPERATION AND MAINTENANCE

A site-specific operation and maintenance (O&M) plan shall be developed and reviewed with the operator and owner of the farming operation 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.

The O&M plan shall provide sufficient detail as to amendments to be used, application rates, timing, and equipment to be used.

The O&M plan shall detail all safety precautions necessary when handling the specific chemical amendments to be used.

The O&M plan shall provide for record keeping in sufficient detail to document the product used, the date, location, rate, method of application, and any tests performed (including nutrient analysis).

SUPPORTING DATA AND DOCUMENTATION

The following is a list of the minimum data and documentation to be recorded in the case file:

1. A Feed Management Plan.
2. Location of the practice on the conservation map.
3. The name of the amendment, the purpose(s) for its use, the application rate or concentration, and the form.
4. Application methodology, including timing, equipment mixing, instructions, etc.
5. Results from manure laboratory analysis to determine the nutrient content of the manure.

REFERENCES

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