

NATURAL RESOURCES CONSERVATION SERVICE  
VIRGINIA CONSERVATION PRACTICE STANDARD

AMENDMENTS FOR TREATMENT OF AGRICULTURAL WASTE

(AU)

CODE 591

**DEFINITION**

The use of chemical or biological additives to change the properties of manure, process wastewater, contaminated storm water runoff and other wastes.

**PURPOSE**

- Facilitate the management, handling and processing of manure and waste
- Reducing risk associated with the spread and contamination from pathogens
- Improve or protect air quality
- Improve or protect water quality
- Improve or protect animal health

**CONDITIONS WHERE PRACTICE APPLIES**

This practice applies where the use of a chemical or biological amendment will alter the physical and chemical characteristics of the waste stream as a part of a planned manure or waste management system. This practice does not include amendments added to the animal feed.

**CRITERIA**

**General Criteria Applicable To All Purposes**

**Laws, Rules and Regulations.** Plan and implement the use of amendments as a part of a manure or waste management system that meets all Federal, state, and local laws, rules and regulations.

**Labeling and Instructions for Use.** The label or accompanying instructions for the use of the amendments shall contain the following information:

- 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.
- The purpose(s) for which the amendment is intended.
- Recommended application rate(s) to achieve the intended purpose(s).
- Application timing and methodology to optimize the effectiveness of the amendment.
- Incorporation requirements (if any).
- Special handling and storage requirements for the amendment.
- 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.** It is the responsibility of the amendment provider to furnish the following documentation to the NRCS.

Provide information from a university or other independent research entity to document the species-specific rate, timing and application methodology of an amendment to achieve a needed level of treatment addressing a specific purpose. Documentation from peer reviewed journals is preferable.

Identify potential adverse impacts of the amendment on the ecosystem in the documentation.

If available, document the effectiveness of the amendment under different climatic factors.

This procedure will be used for new products

and will be completed by the NRCS State Office.

**System Effects.** Limit the use of amendments to situations where adverse impacts on other aspects of the planned manure management system have been addressed in the system design.

Land application of treated manure and other waste must meet the criteria in VA NRCS Conservation Practice Standard *Nutrient Management (Code 590)*.

### CONSIDERATIONS

The use of amendments to reduce ammonia and other emissions from manure in confined spaces may allow altered ventilation strategies at an appreciable energy savings.

Nutrient management plans may need to be revised for the reduction of ammonia emissions as this will also increase the proportion of nitrogen in the manure.

### PLANS AND SPECIFICATIONS

Prepare plans and specifications in accordance with the criteria of this standard and describe the specific purposes for applying the practice, and the requirements for applying the practice to achieve these purposes.

Develop specifications for the use of the amendment in accordance with the label directions and other instructions provided by the vendor. Provide the following information in the plans and specifications:

#### DESIGN DATA

1. Completed Environmental Evaluation and subsequent requirements.
2. Virginia Conservation Practice Job Sheet VA-591-JS, dated October 2013 or later, for poultry waste. For other types of waste treatments, include the following information:
  - a. The name of the amendment, the purposes for its use, and the planned outcomes.
  - b. Application methodology, including rates, timing, mixing instructions, temperature requirements, etc.

- c. Required tests to determine the effectiveness of the amendment as appropriate.
- d. Operation and Maintenance requirements

3. Nutrient Management Plan based on tests of amended waste material and soil tests or Waste Utilization Plan for disposal of litter, as appropriate.

#### CHECK DATA

1. For poultry waste, provide the completed Job Sheet (VA-591-JS). Note any variations from the planned treatment and provide justification.
2. For treatment of other waste, provide a record of the type of treatment(s) applied, quantities, and dates applied. Note any variations from the planned treatment and provide justification.

### OPERATION AND MAINTENANCE

Develop and review a site-specific operation and maintenance (O&M) plan with the operator and owner prior to implementation of the practice. For poultry wastes, this information will be in the Job Sheet (VA-591-JS). Ensure that the O&M plan is consistent with the purposes of the practice, safety considerations, and label directions and other instructions provided by the vendor.

Provide adequate details in the O&M plan as to amendments to be used, application rates and timing, and equipment to be used.

In the O&M plan detail all safety precautions necessary when handling the specific chemicals or biological amendments to be used.

Provide sufficient record keeping guidance in the O&M plan to describe the amendment's use, actual application rates and timing, and any tests performed (including nutrient analysis). Recommend a record keeping outline for the operator to document results and fine tune the manure treatment processes for their operation.

**REFERENCES**

USDA-Natural Resources Conservation Service. National Engineering Handbook – Part 650, Engineering Field Handbook.

USDA-Natural Resources Conservation Service. National Engineering Handbook – Part 651, Agricultural Waste Management Field Handbook.

USDA-Natural Resources Conservation Service. Virginia Electronic Field Office Technical Guide (eFOTG), Section IV. [On-

line]. Available at:

<http://efotg.sc.egov.usda.gov/>.

USDA-Natural Resources Conservation Service. Virginia Engineering Technical Note 591 – Amendments for Treatment of Agricultural Waste. [On-line]. Available at:

<http://efotg.sc.egov.usda.gov/>.

USDA-Natural Resources Conservation Service. Virginia 700 Series Construction Specifications. [On-line]. Available at:

<http://efotg.sc.egov.usda.gov/>.