

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

WASTE UTILIZATION

(Acre)

CODE 633

DEFINITION

Using agricultural wastes such as manure and wastewater or other organic residues.

PURPOSES

- Protect water quality
- Provide fertility for crop, forage, fiber production and forest products
- Improve or maintain soil structure;
- Provide feedstock for livestock
- Provide a source of energy

CONDITIONS WHERE PRACTICE APPLIES

This practice applies where agricultural wastes including animal manure and contaminated water from livestock and poultry operations; solids and wastewater from municipal treatment plants; and agricultural processing residues are generated, and/or utilized.

CRITERIA

General Criteria Applicable To All Purposes

All federal, state and local laws, rules and regulations governing waste management, pollution abatement, health and safety shall be strictly adhered to. The owner or operator shall be responsible for securing all required permits or approvals related to waste utilization, and for operating and maintaining any components in accordance with applicable laws and regulations.

Use of agricultural wastes shall be based on at least one analysis of the material during the time it is to be used. In the case of daily spreading, the waste shall be sampled and analyzed at least once each year. As a minimum, the waste analysis should identify nutrient and specific ion concentrations. Where the metal content of municipal wastewater, sludge, septage, and other agricultural waste is of a concern, the analysis shall also include determining the concentration of metals in the material.

[Use of residuals such as food processing wastes, sludge and septage and other non-agricultural residuals \(i.e. woodash and compost\) will follow all requirements set in the Vermont Solid Waste Management Rules, any Solid Waste Management Certification issued by the Department of Environmental Conservation for a specific project, and the Indirect Discharge Rules and the Vermont Guidelines for the Land Application of Dairy Processing Wastes, if applicable.](#)

Where agricultural wastes are to be spread on land not owned or controlled by the producer, the waste management plan, as a minimum, shall document the amount of waste to be transferred and who will be responsible for the environmentally acceptable use of the waste.

Records of the use of wastes shall be kept a minimum of five years as discussed in OPERATION AND MAINTENANCE, below.

<p>Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.</p>
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Additional Criteria To Protect Water Quality

All agricultural waste shall be utilized in a manner that minimizes the opportunity for contamination of surface and ground water supplies.

Agricultural waste shall not be land-applied on soils that are frequently flooded, as defined by the National Cooperative Soil Survey, during the period when flooding is expected.

Agricultural wastes applied on frequently flooded soils must be incorporated within 48 hours. Do not spread agricultural wastes over bedrock outcrops. When liquid wastes are applied, the application rate and amounts applied shall not be at rates which result in runoff. Consult the Soil Survey for infiltration/permeability rates and water holding capacity for the soil(s) receiving the application. Wastes shall not be applied to frozen or snow-covered ground. The Vermont AAP's impose a manure spreading ban between December 15 - April 1. Some wastes may be spread in the winter dependent upon permit conditions.

To protect surface and ground water (private and public wells) from runoff and leaching water management controls such as vegetative buffers and/or nutrient application setbacks shall be installed on fields that receive nutrients. The type of well, whether public or private, or whether drilled or shallow well or spring, shall be considered in establishing setbacks or buffers around wells. The Vermont Water Supply Division and the Vermont Department of Health recommend a 100' isolation zone from private wells. The Water Supply Rule - Chapter 21 - states that the source isolation zone shall be a water system controlled 200' radius around the proposed source unless approved otherwise. The location of sensitive areas and the setbacks or buffers to protect them shall be discussed with the producer during the development of the plan and documented in the plan. The plan shall document the rationale for the established numerical setback or buffer.

Agricultural wastes shall not be applied within intermittent watercourses (intermittent streams, waterways, diversions, and other ditches.) Where overland flow exits into a perennial waterway adjacent to the crop field, a 25-foot

vegetative buffer will be maintained. Where concentrated flow exits into a perennial waterbody, a 50-foot vegetative buffer will be maintained at the outlet of the area of concentrated flow. These vegetative buffers can be harvested. In addition, this standard requires that fertilizer be limited to the use of commercial fertilizer applied during the growing season according to soil test recommendations.

Sludge and septage shall not be applied within the setbacks required by the Vermont Solid Waste Management Rules. Food Processing Wastes will be applied according to the "Vermont Guidelines for the Land Application of Dairy Processing Wastes."

When liquid wastes are applied, the application rate shall not exceed the infiltration rate of the soil, and the amount of waste applied shall not exceed the moisture holding capacity of the soil profile at the time of application. Wastes shall not be applied to frozen, snow-covered, or saturated soil if the potential risk for runoff exists. The basis for the decision to apply waste under these conditions shall be documented in the waste management plan.

Additional Criteria For Providing Fertility For Crop, Forage And Fiber Production And Forest Products

Where agricultural wastes are utilized to provide fertility for crop, forage, fiber production, and forest products, the practice standard Nutrient Management (590) shall be followed.

Where dairy wash water, whey, municipal wastewater and solids are applied to agricultural lands as a nutrient source, the single application or lifetime limits of heavy metals shall not be exceeded. Use of these materials will follow all federal, state and local requirements and practice standard 590 – Nutrient Management. The concentration of salts shall not exceed the level that will impair seed germination or plant growth.

Additional Criteria For Improving Or Maintaining Soil Structure

Wastes shall be applied at rates not to exceed the crop nutrient requirements or salt concentrations as stated above, and shall be applied at times the waste material can be incorporated by appropriate means into the soil within 72 hours of application. [Agricultural wastes, sludge or septage applied on frequently flooded soils must be incorporated within 48 hours.](#)

Additional Criteria For Providing Feedstock For Livestock

Agricultural wastes to be used for feedstock shall be handled in a manner to minimize contamination and preserve its feed value. Chicken litter stored for this purpose shall be covered. A qualified animal nutritionist shall develop rations that utilize wastes.

Additional Criteria For Providing A Source Of Energy

Use of agricultural waste for energy production shall be an integral part of the overall waste management system.

All energy producing components of the system shall be included in the waste management plan and provisions for utilization of residues of energy production identified.

Where the residues of energy production are to be land-applied for crop nutrient use or soil conditioning, the criteria listed above shall apply.

CONSIDERATIONS

The effect of Waste Utilization on the water budget should be considered, particularly where a shallow ground water table is present or in areas prone to runoff. Limit waste application to the volume of liquid that can be stored in the root zone.

[Land application of animal waste often generates the most complaints from the community. Minimize the impact of odors of land-applied wastes by:](#)

1. [Applying wastes at times when temperatures are cool. Spread manure in the morning when the air rises instead of trapping it close to the earth and avoid weekends and holidays when neighbors may be outside.](#)
2. [Incorporate or inject manure immediately after spreading on row cropland and consider banding on grassland.](#)
3. [Avoid spreading when the wind is directed towards a populated area.](#)
4. [Adjust manure spreaders and sprayers to apply at low pressure with little agitation.](#)
5. [Clean all road spills immediately.](#)
6. [Address complaints swiftly and with a cooperative attitude.](#)

Agricultural wastes contain pathogens and other disease-causing organisms. Wastes should be utilized in a manner that minimizes their disease potential.

Priority areas for land application of wastes should be on gentle slopes located as far as possible from waterways. When wastes are applied on more sloping land or land adjacent to waterways, other conservation practices should be installed to reduce the potential for offsite transport of waste.

It is preferable to apply wastes on pastures and hayland soon after cutting or grazing before re-growth has occurred.

Reduce nitrogen volatilization losses associated with the land application of some waste by incorporation within 24 hours.

Minimize environmental impact of land-applied waste by limiting the quantity of waste applied to the rates determined using the practice standard Nutrient Management (590) for all waste utilization.

PLANS AND SPECIFICATIONS

Plans and specifications for Waste Utilization shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. The waste management plan is to account for the utilization or other disposal of all animal wastes produced, and all waste application areas shall be clearly indicated on a plan map.

OPERATION AND MAINTENANCE

Records shall be kept for a period of five years or longer, and include when appropriate:

- Quantity of manure and other agricultural waste produced and their nutrient content
- Soil test results
- Dates and amounts of waste application where land applied, and the dates and amounts of waste removed from the system due to feeding, energy production, or export from the operation
- Waste application methods
- Crops grown and yields (both yield goals and measured yield)
- Other tests, such as determining the nutrient content of the harvested product
- Calibration of application equipment.

The operation and maintenance plan shall include the dates of periodic inspections and maintenance of equipment and facilities used in waste utilization. The plan should include what is to be inspected or maintained, and a general time frame for making necessary repairs.