In-Vessel Plug Flow Composter for Animal Mortality

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USDA-NRCS

MN NRCS Practice Standard 316, Animal Mortality Facility (March 2004)

CONDITIONS WERE PRACTICE APPLIES:

"…where on-farm carcass treatment and disposal are permitted by federal, State, and local laws, rules, and regulations……..This practice includes disposal of both normal and catastrophic animal mortality; however, it does not apply to catastrophic mortality resulting from disease."

Criteria Applicable to All Purposes- Normal Mortality

Composters

General

"Design of facilities for composting animal mortality shall conform to conservation practice standard 317, Composting Facility…"

MN NRCS Practice Standard 317, Composting Facility (August 2004)

PURPOSE

"The material for composting may include…dead animal carcasses…"

CRITERIA

Content titles include Carbon-Nitrogen Ratio, Carbon Source, Moisture Level, Temperature of Compost Mix, etc.

PRACTICE STANDARD 316 - ANIMAL MORTALITY FACILITY (no)

Component	Unit	PR/unit	IIUP/unit	Payment Cap
Composting Facility for Dead Animals – Roofed	sq ft of bin	29	34	
Composting Facility for Dead Animals	sq ft of bin	20	25	
In-Vessel Mortality Composter	ea	25,000	37,500	

1. Payment is authorized for animal mortality facilities with the following provision
   a) The dead animals to be composted must be produced by the producer's operation and not purchased or provided by outside sources.
   b) Composting facilities shall be sized for the composting of animal mortalities only.
   c) The measured square foot area is the area of the bins
2. In-Vessel Mechanically Grinding Batch Composters shall meet the following minimum requirements:
   a) Minimum capacity of 1000 lbs per batch.
   b) Have test data showing for a minimum of 3 discrete samples of composted material at the end of the batch process
      - the density of fecal coliform less than 1,000 most probable numbers (MPN) per gram total solids, or
      - the density of *Salmonella* sp. bacteria must be less than 3 MPN per 4 grams of total solids (dry-weight basis).
      - Composter must be capable of this performance for expected range of temperatures in winter.
   c) Additional facilities, meeting MN Board of Animal Health requirements, shall be included to provide an additional secondary composting period in the form of a static pile. This facility shall be sized to accommodate all composted material discharged from the In-Vessel composter. The secondary composting period shall consist of allowing the material to complete a composting temperature cycle, maintaining thermophilic temperatures for a minimum of 1 week.
   d) Must be constructed of materials that will provide an expected life greater than 10 years
3. In-vessel plug flow composters shall meet the following minimum requirements:
   a) Minimum capacity of 2,500 lbs per week
   b) Have test data showing results described in 2.(b) above. Composter must be capable of this performance for expected range of temperatures in winter
   c) If the residence time is less than 1 week, facilities as described in 2.(c) above must be provided to finish the compost.
   d) Must be constructed of materials that will provide an expected life greater than 10 years.
4. A CNMP is **NOT** required for an Animal Mortality Facility (316).
5. All composting systems must meet MN Board of Animal Health requirements. Offices must check with their Area Engineer regarding the eligibility status of In-Vessel Mortality Composters prior to approving any application with this practice.
6. The maximum payment allowable is square feet of bin area based on the current capacity of the existing facility plus up to 25% expansion.

Minnesota Board of Animal Health — *Safeguarding Animal Health* — www.bah.state.mn.us

Conditions of Use for Ecodrum or Dutch Compost System in Minnesota

- Permit required: No person in Minnesota shall use an Ecodrum or Dutch Compost System without first obtaining a permit from the Minnesota Board of Animal Health. The permit will be valid for a period of one year from the issue date and must be renewed annually. A person desiring a permit or renewal of a permit shall call the Board office to make the request.
- Species allowed: Composting using these systems is allowed for poultry, swine, sheep, goats, cattle, and horses.
- Site selection and use: The composter may be used only for mortalities that originate on the premises where the composter is located or, if the operation is a multi-site operation owned and operated by the same entity, the composter may be permitted to receive mortalities from the other locations listed on the permit. Requests to use a composter to handle mortalities that originate from sites owned or operated by a different producer or operator may be made to the Board and will be evaluated on a case by case basis.
- Installation and operation: The composting unit must be installed and operated in accordance with manufacturer's instructions.
- Protocol: The operator of the compost system shall have a written protocol for the operation of the unit and shall instruct and be responsible for making sure that all employees follow the protocol.
- Inspection: The operator of the compost system must contact the Board as soon as the unit is operational to arrange for a field inspection and sample collection.
- Temperature: The temperature must be taken and recorded on site daily. The compost must reach the required temperature and be maintained at that temperature for the length of time specified in manufacturer's guidelines.
- Pest control: Flies, rodents, and vermin must be controlled around the area of the composting system so they are not a health hazard to human or animal populations.
- Transportation to compost site: Carcasses and discarded animal parts that are transported over public roads must be in vehicles or containers that are leakproof and covered.
- Finished product: The finished product must not contain visible pieces of soft tissue and must be handled, stored, and used according to Pollution Control Agency and Department of Agriculture rules.

MN Administrative Rules 1719.4000 Composting

Who is Ecodrum ™ as A Company?

Ecodrum™ is the trade mark product of Tri Form Poly Inc, a composting manufacturer with a plant in Morris, Manitoba, Canada.

We are a member of the US Composting Council, and have an extensive network of dealers to provide producers assistance and service across North America.

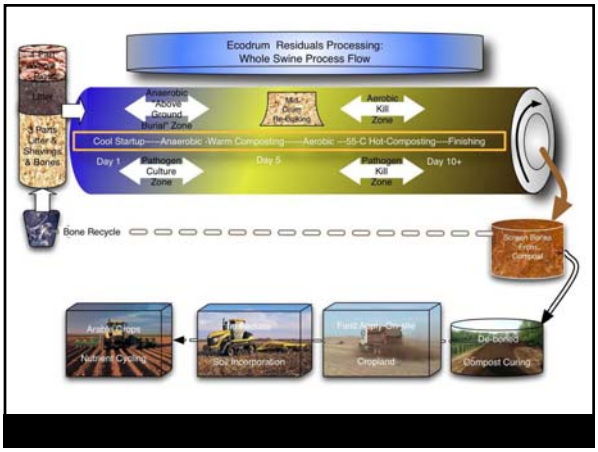
Our beginnings, in the composting industry were with swine mortality; however, we have now worked in poultry, horse and dairy producers assisting them with mortality, hatchery waste, and manure. Ecodrum™ is currently designing a larger capacity drum to service the food waste, institutional, and larger dairy's for manure.

We work extensively with scientist, engineers, programmers, steel fabricators, and control experts to provide true solutions to producers that are essential for making good compost.

Tri Form Poly's mission is to provide an exceptional product, which is a cost-effective environmental solution to the agricultural market.

Ecodrum™'s goal is to be known as leader in the industry for in-vessel composting. We believe this comes with building, designing and understanding the composting industry. We also know that supporting producers and dealers with exceptional service, training, and education will define us as a company.

Ecodrum™ Dealers



Renville Co. Swine Operation

16,000 head, 150# ave., 2.5 cycle/yr., 3% mortality rate = ~3500#/week

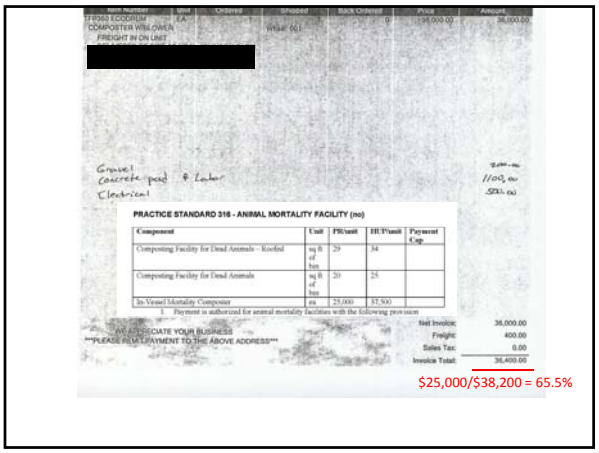
Ecodrum Models and Capacity

There are five models of the ecodrum currently available.

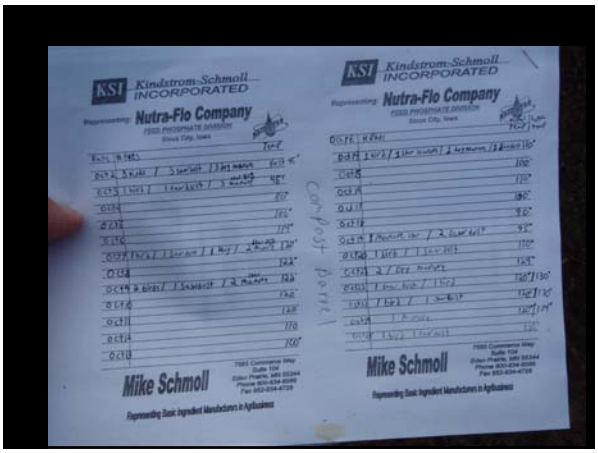
- The 240 **Ecodrum** has 366 actual cubic feet. Daily capacity is 370 lbs. weekly capacity is 2,590 lbs. and yearly capacity is up to 135,000 lbs.
- The 360 **Ecodrum** has 549 actual cubic feet. Daily capacity is 670 lbs. weekly capacity is 4,000 lbs. and yearly capacity is 216,000 lbs.
- The 460 **Ecodrum** has 732 actual cubic feet. Daily capacity is 740 lbs. weekly capacity is 5180 lbs. and yearly capacity is 270,000 lbs.
- The 560 **Ecodrum** has 915 actual cubic feet. Daily capacity is 925 lbs. weekly capacity is 6,476 lbs. and yearly capacity is 337,500 lbs.
- The 660 **Ecodrum** has 1098 actual cubic feet. Daily capacity is 1,140 lbs. weekly capacity is 8,000 lbs. and yearly capacity is 420,000 lbs.

The sizes and capacity of both ecodrum models have been designed based on maximum amount of mortality that can be consistently processed into compost at optimal time.

3/4 HP MOTOR 220 VOLT


Item Number
Unit
Ordered
Shipped
Back Ordered
Price
Amount
COMPOSTER W/BLOWER
FREIGHT IN ON UNIT
[redacted]
Gravel
Concrete pad + Labor
Electrical
PRACTICE STANDARD 316 - ANIMAL MORTALITY FACILITY (no)
Component
Unit
PR/unit
HUF/unit
Payment Cap
Composting Facility for Dead Animals - Roofed
sq ft of bin
29
34
Composting Facility for Dead Animals
sq ft of bin
20
25
In-Vessel Mortality Composter
ea
25,000
37,500
1. Payment is authorized for animal mortality facilities with the following provision
Net Invoice: 36,000.00
Freight: 400.00
Sales Tax: 0.00
Invoice Total: 36,400.00
$25,000/$38,200 = 65.5%


PINE COUNTY NOVEMBER 2009


KSI Kindstrom-Schmoll INCORPORATED
Representing Nutra-Flo Company
FEED PHOSPHATE DIVISION
Sioux City, Iowa
Mike Schmoll
Representing Basic Ingredient Manufacturers in Agribusiness


NOVEMBER 2010 SITE VISIT


ecodrum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