

Incineration of Animal Mortality **TN316a**

DEFINITION

Incineration of mortalities from poultry, swine, and other small animal operations is a suitable means of on-farm disposal.

WHEN APPLICABLE

Incinerators utilize an energy source such as propane gas, LP gas, or diesel fuel with forced air in a combustion chamber(s) to reduce animal mortalities to ashes. When properly operated, incinerators prevent the emission of objectionable odors and excessive amounts of particulate matter.



Only Type 4 incinerators can be used for animal mortality disposal.

The required minimum incinerator capacity can be determined using the following table or formula methods:

Table		Formula
Animal Type	Daily Loss Factor	If detailed records are available, the following formula can be used to determine the Daily Loss Factor for a specific operation: $\frac{MW \times AM}{L} = \text{Daily Loss Factor}$ Where: MW = Mature weight of the animal (i.e., 4.2 lbs) AM = Average mortality for the life of the animals, as a decimal (i.e., 0.05) L = Life of the animals in days (i.e., 42 Days)
	(lb/day/animal)	
Chickens:		
Broiler (4.2 lbs)	0.0050	
Laying Hens (4.5 lbs)	0.0014	
Breeding Hens (7.5 lbs)	0.0019	
Breeder Male (11 lbs)	0.0082	
Swine:		
Suckling Pigs (5 lbs)	0.04 (per sow)	
Example 1 (using table value):		Example 2 (using formula):
Size of swine unit: 500 sows (total on farm) Average daily weight of dead suckling pigs: $500 \times 0.04 = 20 \text{ lbs/day}$ Incinerator capacity: Minimum 20 lbs per loading capacity		Given: 23,000 broilers 4.2 lb market weight 4% average mortality 42 day flock life $\text{Daily Loss Factor} = \frac{4.2 \times 0.04}{42} \times 23,000 = 92 \text{ lb/day}$ Incinerator capacity: 92 lb/day



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Electrical and gas hook-ups for incinerators are to meet all codes and must be certified by a qualified technician.

Incinerators should be located:

- at least 165 ft. from the nearest property line for a dry waste poultry system
- at least 100 ft. from any drainageway
- at least 200 ft. from any natural water course
- at least 100 ft. from any up gradient well or 300 ft. from any down gradient well
- at least 20 ft. from any combustible building
- on a 4 in. thick concrete slab extending 2 ft. from the incinerator base
- as far from the source of fuel as practical

A roof over the incinerator will extend its useful life. Any combustible roof parts must be at least 6 in. from the incinerator chimney.

OPERATION AND MAINTENANCE

Incinerators are designed to handle normal mortalities on a once a day basis. Heavy mortalities near the end of a grow-out cycle may require loading the incinerator more than once a day. Some operations will require the use of more than one incinerator. Catastrophic loss of animals shall be handled with emergency procedures (see Guide Sheet TN 316, Emergency Disposal of Dead Animals).

The ash produced by the incinerator should be evenly distributed on an actively growing crop in accordance with Tennessee NRCS conservation practice standard Nutrient Management, Code 590.

Example 3: (P₂O₅ annual production from ash)

Given: 100,000 broilers
4.2 lb market weight, 2.1 lb average weight
5% average mortality
6 flocks per year
0.01 lb P₂O₅ per lb of mortality
P₂O₅ production:
 $100,000 \times 2.1 \times 0.05 \times 6 \times 0.01 = 630 \text{ lbs P}_2\text{O}_5/\text{year}$

REFERENCES

TN NRCS Conservation Practice Standard
Code 316 - Animal Mortality Facility
Code 590 - Nutrient Management

TN NRCS Guide Sheets

TN 316 - Emergency Disposal of Dead Animals

TN 590 - Application Distances for Applying Animal Manure and Organic By-Products

February 2006

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