

POULTRY WASTE STORAGE STRUCTURE SIZING WORKSHEET

Sheet 1 of 2

Operator's Name: _____

Date: _____

Designed By: _____

Instructions for use of worksheet:

This worksheet will provide quantities for total litter production, litter and cake removed per year, total cleanout, storage size, and total annual manure generated. Use the nutrient and waste management plans to determine storage needs based on frequency of field application. Auxiliary storage beyond the roofed structure may be necessary for the portion of the total cleanout in excess of roofed storage capacity.

These calculations are based on Bud Malone's January 1994 recommendations. All storage facilities should be designed for broilers even if the grower is presently raising roasters or Cornish hens.

The minimum length calculated is based upon the SCS standard drawing MD-84-02, "Roofed Animal Waste Structure", revised 6/87.

The number of cakeouts to be used shall be obtained from the following table:

NUMBER OF CAKEOUTS

<u>Days of Storage</u>	<u>Cakeouts</u>
up to 90	2
up to 120	3
up to 150	3
up to 180	4
up to 210	4
up to 240	5
up to 270	5
up to 300	6
up to 330	6
up to 360	7

POULTRY WASTE STORAGE STRUCTURE SIZING WORKSHEET

Sheet 2 of 2

INPUT DATA

- | | |
|--|------------|
| 1. Number of birds | N = _____ |
| 2. Number of days per flock | DA = _____ |
| 3. Number of flocks per year | FL = _____ |
| 4. Brood chamber size as percent of house, | PC = _____ |
| 5. Years between total cleanouts, | YR = _____ |
| 6. Required days storage period, | ST = _____ |
| 7. Number of brood chamber cleanouts, | BR = _____ |
| 8. Number of cakeouts, | NC = _____ |

TOTAL LITTER PRODUCTION

$$TP = .00002 N [\{FL \times DA \times YR\} + \{ (YR - 1) \times PC \} + 100]$$

$$TP = .00002 \text{ _____ } [\{ \text{_____} \times \text{_____} \times \text{_____} \} + \{ (\text{_____} - 1) \times \text{_____} \} + 100]$$

$$TP = \text{_____} \text{ tons / cycle}$$

LITTER AND CAKE REMOVED PER YEAR

$$\text{Brood} = B = TP \times .29 / YR$$

$$\text{Cake} = C = N \times FL \times .0004$$

$$B = \text{_____} \times .29 / \text{_____}$$

$$C = \text{_____} \times \text{_____} \times .0004$$

$$B = \text{_____} \text{ tons/yr}$$

$$C = \text{_____} \text{ tons/yr}$$

TOTAL CLEANOUT

$$TC = [TP - \{B(YR - 1)\} - \{C \times YR\}] / .018$$

$$TC = \text{_____} \text{ Ft}^3$$

STORAGE SIZE

$$\text{Storage} = ([NC \times C/FL] / .0165) + (B \times BR / .015)$$

$$\text{Storage} = ([\text{_____} \times \text{_____} / \text{_____}] / .0165) + (\text{_____} \times \text{_____} / .015)$$

$$\text{Storage} = \text{_____} \text{ Ft}^3$$

$$\text{Min. Length of Std. Roofed Structure} = \text{_____} / 200 \text{ Ft}^3 / \text{ft} = \text{_____} \text{ ft}$$

storage

AUXILIARY STORAGE VOLUME

$$\text{Auxiliary} = \text{Total cleanout} - \text{storage}$$

$$\text{Auxiliary} = \text{_____} - \text{_____} = \text{_____} \text{ Ft}^3$$

TOTAL ANNUAL MANURE GENERATED

$$\text{Annual amount} = (C / .0165) + (B / .015) + TC / YR$$

$$\text{Annual amount} = (\text{_____} / .0165) + (\text{_____} / .015) + (\text{_____} / \text{_____})$$

$$\text{Annual amount} = \text{_____} \text{ Ft}^3$$