

DEAD BIRD COMPOSTER SIZING WORKSHEET

Conservation District: _____ Field Office: _____

Cooperator: _____ Location: _____

Identification No.: _____ Field No.: _____

B = No. of birds on farm = _____

M = Anticipated mortality for flock, as decimal (NOTE: Mortality may range from 3-5% for broilers, up to 18% for breeders. Use actual data or refer to Table 10-7 in AWMFH, Part 651.)

W_s = Weight of birds near maturity, lbs. (ex.: 5.5 lbs for broilers)

T = Life of flock, days (ex.: 50 days for broilers).

W_T = Weight of daily loss on day T

$$\begin{array}{ccccccc} \mathbf{B} & \times & \mathbf{M} & \times & \mathbf{W}_s & / & \mathbf{T} & = & \mathbf{W}_T \\ \text{_____} & \times & \text{_____} & \times & \text{_____} & / & \text{_____} & = & \text{_____} \text{ lbs/day} \end{array}$$

For Stage 1 of a 2 stage composter, allow 2.5 ft³ composter volume per lb. of weight loss per day at maturity. For single stage composter, allow 3.75 ft³ of composter volume per lb. weight loss per day.

1st STAGE:

$$\text{Volume} = V_1 = 2.5 \text{ (or 3.75)} \times W_T$$

$$= V_1 = \text{_____} \times \text{_____} = \text{_____} \text{ ft}^3$$

Determine type of composter (circle one): (A) Standard Bins (B) Deep Bins (C) Linear Stack

A. Dimensions of Standard Bins:

h = height of bin (4 to 5 ft.) = _____ ft.

Y₁ = depth of bin (varies) = _____ ft.

Y₂ = width (front) of bin (8 to 10 ft.) = _____ ft.

V_B = individual bin volume = **h** x **Y₁** x **Y₂**

$$V_B = \text{_____} \times \text{_____} \times \text{_____} = \text{_____} \text{ ft}^3$$

$$\text{No. of bins} = V_1 / V_B = \text{_____} / \text{_____} = \text{_____} \text{ bins}$$

Recommended number of bins: _____

Number of bins in Stage 1: _____

B. Dimensions of Deep Bins:

h = height of bin (4 to 5 ft.) = _____ ft.

Y₁ = depth of bin minus set back (7.5 ft.) = _____ ft.

Y₂ = width (front) of bin (8 to 10 ft.) = _____ ft.

Z = Side slopes (If Z is not known, use 1.5) = _____

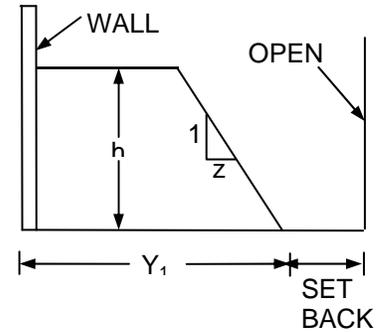
V_B = individual bin volume = $[(h \times Y_1) - (Zh^2 / 2)] \times Y_2$

V_B = $[(\text{_____} \times \text{_____}) - (\text{_____} \times \text{_____}^2 / 2)] \times \text{_____} = \text{_____} \text{ ft}^3$

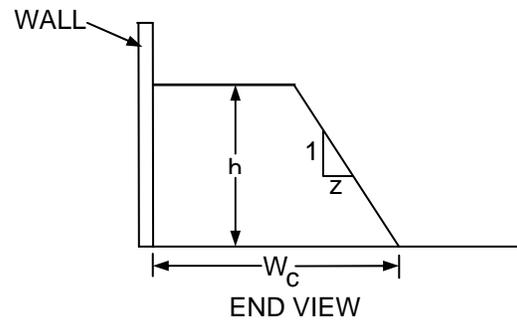
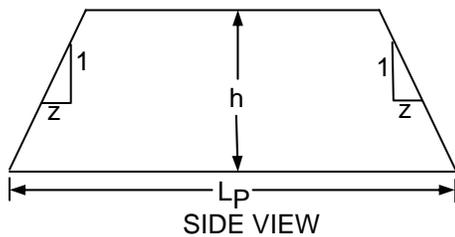
No. of bins = $V_1 / V_B = \text{_____} / \text{_____} = \text{_____}$ bins

Recommended number of bins: _____

Number of bins in Stage 1: _____



C. Dimensions of Linear Stack Bins:



V₁ = Volume of composter

h = height of compost (4 to 5 ft.) = _____ ft.

W_c = bottom width of compost pile, ft. = _____ ft.

Z = Side slopes = _____ (If Z is not known, use 1.5)

L_p = bottom length of compost pile, ft. (calculate below).

A_x = Cross sectional area of pile, $\text{ft}^2 = (W_c \times h) - (Z / 2 \times h^2)$

A_x = $(\text{_____} \times \text{_____}) - ((\text{_____} / 2) \times (\text{_____}^2)) = \text{_____} \text{ ft}^2$

L_p = $(V_1 / A_x) + (Z \times h) = (\text{_____} / \text{_____}) + (\text{_____} \times \text{_____}) = \text{_____} \text{ ft}$

2nd STAGE: Volume shall equal or exceed **V₁**. In sizing width of bin(s), consider width of front end loader.

Size and number of 2nd Stage bins: _____

Designed by: _____ Date: _____

Checked by: _____ Date: _____

Approved by: _____ Date: _____