

Manure Storage and Field Records

AE-1189, February 2000

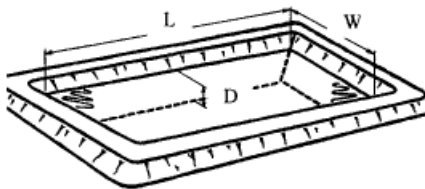
Estimating the Volume to be Spread

Method 1. Estimate based on last year's volume.

Use the "Actual Volume Spread" ([Worksheet 1](#), Column 9) from last year as a basis for this year's estimate. Account for any changes in the feeding operation. For example, if animal numbers increased by 20%, increase the volume spread last year by 20% to use for this year's estimate. If the information was not recorded, refer to the previous year's "Manure Application Log Book" (AE-1188).

Method 2. Measurement of volume in storage.

For liquid/slurry storage ponds:



$$V = (W \times L \times D) - [(S \times D^2) \times (W + L)] + (4/3 \times S^2 \times D^3)$$

Where: V = volume, cubic feet

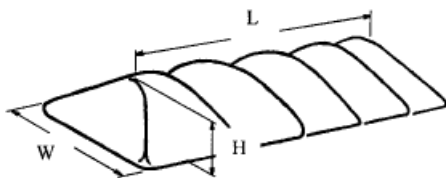
W = liquid length, feet

L = liquid width, feet

D = liquid depth, feet

S = sideslope (length of run per foot of fall)

For manure stockpiles:



$$V = (W \times H \times L) \times 2$$

Where: V = approximate volume, cubic feet

W = width of base of stockpile, feet

H = height of stockpile, feet

L = crest length of stockpile, feet

Method 3. Estimate based on typical data.

This method is the least accurate way to estimate the volume to be spread. Methods 1 and 2 are preferable.

Table 1. Typical "as-collected" manure production estimates.

Livestock Species and Handling System	Volume	Notes
Beef, open lot ^a	1 to 2 ton per head per year	
Sheep, open lot ^b	0.5 ton per head per year	100 lb liveweight, manure 62% m.c.
Dairy, storage pond, no bedding	4600 to 6000 gallons per head per year	1400 lb liveweight
Dairy, storage pond, with bedding	6800 to 8300 gallons per head per year	1400 lb liveweight
Swine, farrow to finish, storage pond	4900 gallons per sow per year	Based on 16 hogs sold per sow per year
Swine, farrow to feeder, storage pond	1300 gallons per sow per year	Feeder pig sold at 50 lb
Swine, finishing only, storage pond	220 gallons per finished hog per year	Hogs grown from 50 to 220 lb

Source: MWPS unless otherwise noted.

^aRange reported in various sources.

^bNorth Carolina State University.

Table 2. Commonly required conversions.

To convert from:	To:	Multiply by:
cubic feet	pounds	40 to 55
pounds	cubic feet	0.018 to 0.025
cubic feet	gallons	7.48
gallons	cubic feet	0.134
bushels	cubic feet	1.24

Worksheet 1. Manure source details.

[Click here for a printable Adobe Acrobat file of this worksheet.](#) (4KB pdf file)

Worksheet 2. Field records.

[Click here for a printable Adobe Acrobat file of this worksheet.](#) (3KB pdf file)

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