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Manure Management for Fairs and Exhibitions- Storage

A guide to developing manure storage at fairs and expos.

#2 in a series of fact sheets for fairs and expos

Manure storage checklist

When storing manure, consider how the location may affect daily task efficiency and ensure appropriate environmental stewardship practices. Additionally, the storage needs to have a practical, easily understood approach that is economically responsible.

Manure management storage location practices should take environmental stewardship into account. For each storage site ask yourself:

- Is the material of the manure storages' base concrete or asphalt?
- Do the storages have walls?
- Do the storages have a small curb on the entrances to keep manure contained and prevent runoff from the piles?
- Are there gutters on the buildings to prevent clean rainwater from entering the manure storages?
- Are the storages equipped with sumps to provide a place for wastewater to collect?

REMEMBER

Kids will be pushing full wheelbarrows. These can be quite heavy and unstable.

For questions about storage location refer to [Manure Management for Fairs and Exhibitions – Planning](#) – the first fact sheet in this series.

To contact an expert in your area, visit extension.msu.edu/experts or call 888-MSUE4MI (888-678-3464)

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Calculating the size of a manure storage

If you plan to build or have an existing manure storage structure, the capacity (volume) of the manure storage can be calculated in cubic feet (ft³).

$$\text{Capacity} = \text{Length} \times \text{Width} \times \text{Height}$$

Refer to Table 1 that shows how much manure can be produced per day. Realistically, consider how manure will be managed. Build a structure to the appropriate (or even excess of 20%) volume carrying capacity.

$$\text{Capacity needed} = \text{Number of each animal species (cubic ft produced)} \times \text{Number of days before removed}$$

Table 1. Manure Production and Characteristics

Animal	Size, lbs.	lb./day	ft ³ /day	Nutrient Content, lbs./day		
				N	P ₂ O ₅	K ₂ O
Lactating cow	88 lb. milk/d	150	2.4	0.990	0.389	0.276
Swine – growing and finishing	154	10	0.167	0.083	0.032	0.044
Horse (average sedentary & exercised)	1,100	57	0.910	0.270	0.117	0.252
Finishing beef	750–1,250	64	1.00	0.350	0.110	0.298
Poultry – broiler	2.6	0.23	0.004	0.0025	0.0017	0.0017
Lamb – feeder	100	1.05	0.060	0.040	0.020	0.040

(Source: American Society of Agricultural and Biological Engineers [ASABE], March 2005, R2014, D384.2) The standard can be obtained by contacting ASABE in St. Joseph, Michigan. Presented as bolded text in the table is from the Midwest Plan Service Publication MWPS–18, Section 1 (2000).

For example, a feeder lamb around 100 lb., will produce 1.05 lb. of manure per day, which means that over the course of seven days, 7.35 lb. total. If we look at the totals for nutrients over the course of seven days, we would see the following: 0.28 lb. of N, 0.14 lb. of P₂O₅, and 0.28 lb. of K₂O. Then think about how these numbers will change when considering all feeder lambs present at fair for one week.

