



FACT SHEET 5.5

ANIMAL MANURE COMPOSTING

Hobby farms that support animals find that efficient manure management is essential to upholding a healthy farm environment, protecting water quality and maintaining good neighbor relations. One of the most challenging steps to manure management can be disposal. Many hobby farmers find that composting is a good way to safely and efficiently reduce and recycle animal manure.

WHY COMPOST MANURE?

Composting animal manure can save money and time and generate a nutrient rich material that you may be able to use in other areas of your farm such as your pastures or in your vegetable gardens.

WHAT IS COMPOSTING?

Most organic matter, including manure, will naturally decompose. The process of composting speeds up this decomposition process by providing an ideal environment for microorganisms to break down manure and create a nutrient rich soil mixture. Compost can be a highly sought-after nutrient source and soil amendment for gardens and pastures since it generally is organic in nature and can build soil structure for plant growth.

Composting manure can:

- Reduce and recycle animal manure
- Reduce animal manure disposal costs
- Decrease your manure pile size and storage area
- Help keep nutrients out of waterways
- Kill disease causing pathogens
- Create a valuable soil fertilizer/amendment
- Enrich soil structure that can increase water retention and reduce soil erosion
- Decrease fertilizer amounts and costs



WHAT TYPE OF MANURE CAN I COMPOST?

Many types of animal manure are suitable for composting on a hobby farm, but not all. Manure from farm animals such as horses, cows, poultry, and llamas/alpacas along with bedding material such as straw, sawdust, wood shavings, and hay are all good composting material. Do not compost dog, cat or human waste as this material requires very high temperatures for a sustained amount of time to rid the material of harmful pathogens.

CAUTION!

DO NOT COMPOST dog/cat manure or human waste; manure from diseased animals; or meat or animal products.

WHERE CAN I PUT MY COMPOSTING OPERATION AND DO I NEED A SPECIAL COMPOST CONTAINER?

Although there are many commercial compost containers on the market, these are often more suitable to compost kitchen scraps and small amounts of yard waste. If your hobby farm has one or more larger animals you will need a space big enough to handle multiple compost piles. Your compost pile should be on an impervious surface such as a concrete pad or tarp and located away from edible gardens, groundwater wells, surface waters, storm drains and any place that may flood. A flat, well-drained, covered area with easy access is an ideal location. A grassed buffer around your compost area is recommended so that any runoff can filter through this vegetated area, reducing the potential for containments to reach surface waters.

Compost systems should be sized to meet your specific hobby farm needs. The kind of system you choose will depend on the type and number of animals you have and how much space you can dedicate to manure composting. It is recommended that a multi-bin system be used so that when one bin fills another one can be started. If, for example, a 3-bin system is used, the goal is to have finished compost in the first bin before the third bin is filled with fresh manure. The finished compost can be removed and the first bin becomes available when the third bin is full. Compost bins can be any size or shape and easily be made out of new or recycled materials such as wooden pallets, cinder blocks, wire mesh, chicken wire, fence sections, window screens or any other material that will enclose your manure. If your design doesn't have a roof, a secured tarp can be used to cover your compost.

IDEALLY, YOUR COMPOST AREA SHOULD BE LARGE ENOUGH TO HOLD 6-MONTHS OF MANURE. HOWEVER, MANY HOBBY FARMERS HAVE LIMITED SPACE, SO CONSIDER ANY AMOUNT OF MANURE COMPOSTING, NO MATTER HOW SMALL, TO BE A BENEFIT TO YOUR HOBBY FARM.



PLAN AHEAD

One large animal can generate as much as 50 pounds of manure every day! This requires a storage area of about 12 feet on each side, with a depth of about 5 feet for one year, per animal.





WATER QUALITY BENEFIT

Composting manure not only helps to prevent it from potentially reaching nearby waterways, but creates a valuable soil amendment and organic nutrient source that when applied to crops and fields is recycled back into the earth.

A RECIPE FOR COMPOSTING SUCCESS

Microorganisms that assist in the composting of manure need what many living organisms require: food, water and air.

- **Food (Nitrogen and Carbon)** – How fast your manure decomposes relies heavily on the carbon to nitrogen (C:N) nutrient ratio in your pile. Most animal manure alone generally has an ideal C:N ratio. However, if you have bedding mixed in you may need to add an additional source of nitrogen such as grass clippings, blood meal or chicken manure.
- **Air** – Microorganisms need oxygen to survive and break down manure. Periodically turning your compost to introduce air or incorporating simple perforated PVC pipes into your compost pile can provide the oxygen needed to support these microorganisms.
- **Temperature** – Decomposition creates heat which is important to support the microorganisms you want in your compost and in your finished soil structure. Heat created in your compost pile is also needed to kill any pathogens, weed seeds and/or fly larvae you may have in your manure. Compost piles generally should be turned periodically to maintain an internal temperature of 140-150°F. This can be measured with a compost thermometer (similar to a meat thermometer but with a longer probe).
- **Water** – Compost piles need moisture to support the decomposition process. Your compost pile should be wet but not soaked. Since heat plays a major role in the process it can quickly evaporate moisture, so plan to add water to your compost pile on a regular basis to keep it moist but not to the point where you are creating runoff.

COLLECT WATER FROM THE ROOF OR COVER OF YOUR COMPOST BIN SYSTEM WITH A RAINBARREL AND USE THIS RECYCLED WATER TO ADD MOISTURE TO YOUR COMPOST WHEN NEEDED.

The length of time it will take to make any type of compost will depend on the size of your compost pile, time of year, contents, and how you manage it. Typically, it will take approximately 3 to 6 months to complete a batch of compost.

HELPFUL LINKS

www.mass.gov/eea/agencies/massdep/water/watersheds/horsekeeping-and-water-quality.html
www.ag.umass.edu/crops-dairy-livestock-equine/fact-sheets/composting-horse-manure
www.ag.umass.edu/sites/ag.umass.edu/files/fact-sheets/pdf/manure_composting_for_small_livestock_operation_17_03.pdf

