A Guide to Composting Manure

Many small acreage landowners enjoy the ability to own livestock for personal enjoyment. Unfortunately, managing manure generated by livestock can be a problem for these landowners. One of the best manure management tools is composting. Composted manure can become an amazing fertilizer that can be used to improve pasture quality as well as soil enhancement for home gardens. Composting can reduce the overall volume of generated manure, kill pathogens, reduce fly infestation, minimize impact to surface/ground water and improve soil health and fertility if applied to pastureland correctly.

How to compost your manure

Converting manure into a useable product can be as simple as getting your "poop in a pile" or a complex science project. These guidelines will provide a simple and efficient process to establish your own composted manure in a cost-effective manner.

Layout and construction:

When establishing your manure compost system (poop in a pile) consider the following:

1. Picking a site for your compost pile:

When choosing a site, make sure that your "pile" will be in a location that won't generate runoff into surface water or drainage. Flat level ground is ideal with proximity to a domestic water source such as a frost-free hydrant or hose spigot.

2. Select a method for storing your compost.

Options include constructing a compost bin (bay) or designating a dedicated area for your pile. When establishing the compost site factors to consider are the amount of manure generated, the ability to turn the pile, and the volume of manure you intend to compost. If the quantity of manure is substantial, constructing multiple bays or forming wind rows is recommended.

If constructing a bay, make sure the dimensions will handle any equipment you may have for placing manure in the bay and removing the composted material (tractor, skid steer).

Windrow piles are arranged in rows rather than stacked vertically, resulting in gentler slopes that are easier to turn over. However, this method will require more space.

Creating the manure pile:

When creating the compost pile, you should incorporate additional organics into manure to improve bacteria growth for decomposition. Suggested organics include straw, leaves, cardboard, or add in vegetable food scrapes (excluding all citrus fruits). Once you have all your manure and other organic items gathered, mix the manure and organic matter. The mix ratio should be 2-4 parts organic to one part manure. This mix will ensure the manure will break down. A manure pile should be allowed to compost for at least a month to increase effectiveness, longer if possible.

Management:

1. Heating stage:

Now that you have your compost pile established, it is important to keep your pile nice and wet. Use a hose or sprinkler to add moisture to the pile as needed to keep moist. The pile should be wet enough that when you grab a clump and squeeze it, no water comes out, but the manure is damp. It is also important to turn your pile(s) over every 2-4 weeks for about 1-2 months depending on how long it takes for your manure to break down. This process should generate a lot of heat which is important to kill weed seeds and pathogens. If higher heat needs to be established, cover the pile with a tarp. Turn the pile occasionally to increase air flow during decomposition. Be careful when turning the piles because manure piles have been regularly known to heat up to 150 degrees. **Effective heat is ideal when it is higher than 130 degrees for 3 or more days.**

The management stage is the most time-consuming step when composting manure. However, it is the most important because this step creates the needed environment to kill weed seeds and pathogens and creates optimal conditions for bacteria to thrive and break down manure. Keeping the pile moist and warm is vital for success.

2. Cooling stage:

When the manure is mostly decomposed, stop watering it and let it dry and cure. Curing cools the compost, making it safe to use. Turning the pile occasionally may speed up the drying process.

Use of the compost:

You can apply it directly to pastures with a manure spreader or some type of broadcasting method. Never apply manure compost during frozen conditions, to wet pastures or prior to large, forecasted storm events. Compost will also benefit vegetable gardens; just remember not to add more than a one-to-two-inch layer on existing beds.

Notes:

It is critical to wash your hands after handling all compost products because of pathogen risk.

Works cited:

Keena, Mary A. *Composting Animal Manures: A Guide to the Process and Management of Animal Manure Compost*. Revised Feb. 2022. Carrington Research Extension Center, North Dakota State University.

Resource Links:

https://www.youtube.com/watch?v=_6KfRMYp58M

https://www.youtube.com/watch?v=bNJIovXmBaM

https://www.youtube.com/watch?v=AmjvmRX5jHI