

## Commonly Asked Questions/Answers

What measures do you take to manage your composting process?

- Measure temperature
- Evaluate moisture content
- Turn the pile regularly (on a time schedule rather than measuring conditions)

What are your composting goals?

- Create a stable product
- Because you think that is what you are suppose to do
- Create a fertilizer
- Sell a product
- Kill weed seeds
- Because everyone else is doing it
- Reduce bulk and weight of material and make better use of manure for a small spreadable land base
- Increase soil quality of farm by spreading compost versus raw manure
- Reduce odors and flies
- Achieve uniform nutrient application on the field
- Because it's fun!

What is the recommended maximum height of outdoor pile of horse manure compost?

- For a small operation – 3 ft

How long does it typically take horse manure to be fully composted?

- 4 to 6 months
- Can take as little as 2 months with excellent management and turning during warm outdoor temps

Approximately how often should you turn the compost pile (general rule of thumb)?

- 1 week

What is bulk density and why is it important?

- Bulk density should not exceed 1,000 pounds per cubic yard to meet the basic aeration and moisture needs of composting microbes. Higher bulk densities are a signal that the mix may be too wet or contain materials that are too dense. In either case, compaction and poor aeration will result. Typical bulk density of horse manure/bedding mix is between 1,200 and 1,700 pounds per cubic yard.
- To determine bulk density
  - Weigh an empty 5 gallon bucket and fill it with fresh compost mix and weigh it again
  - Subtract empty weight of the bucket from the full weight and record this number

- Multiply the recorded number by 40.5 to find the bulk density of the compost mix in pounds per cubic yard. (Rule of thumb: if the weight of the compost mix in your 5 gallon bucket exceeds 25 pounds, then your compost mix is probably too dense).
- How to decrease bulk density?
  - Incorporate dry material to even out the distribution of excess moisture
  - Add straw/hay, chipped wood, sawdust or wood shavings (bulking agent) that will increase porosity (making the material less dense)

What is likely the most critical factor in composting and why?

- Porosity – porosity has to do with availability to hold moisture and move air through the pile

What do you do when you smell foul odors coming from you composting pile?

- Test moisture content?
- Turn the pile?

How do you know when to turn the pile and when the pile is ready to be cured?

- When you turn the pile and the temperature stays constant and all other variables are in good balance: moisture, pH, porosity, C:N ratio
- You can also thoroughly wet a small sample of the compost, seal it in a plastic bag, and store the bag at room temperature. If the compost does not emit a foul odor after one week in the bag, it can be considered stable enough for curing.

Are you familiar with DEQ rules/regs regarding storage of manure even on small farms?  
[http://arcweb.sos.state.or.us/rules/OARs\\_300/OAR\\_340/340\\_051.html](http://arcweb.sos.state.or.us/rules/OARs_300/OAR_340/340_051.html)

What do windbreaks do for you?

- Keep people from “visualizing odors”
- Take odors out of the “odor zone” (the place were people and their noses are located)

What does it mean to inoculate a compost pile?

- Add some freshly cured compost to new composting process in order to kick-start the microbe activity

Do you need to inoculate a compost pile?

- Not usually but could come in handy in certain circumstances

Are aerobic or anaerobic conditions better for composting, why?

- Aerobic. An anaerobic composting process generally has foul odors and does not produce a friable, dark in color compost product.
- Small anaerobic pockets are still likely to form in aerobic piles and the odors generated by the anaerobic piles are generally filtered through the aerobic portion and are not significant contributors of odors.

What is a good temperature of the warm-up phase of the pile?

- Up to 105 degrees

What is the range of temperature of the hottest phase of composting?

- 110-150 degrees
- Why do you want it to get this temperature?
  - To kill pathogens and weed seeds

Why are larger piles (12 feet high) of manure subject to spontaneous combustion?

- The heat can't escape and continues to build up until the pile is so dry and so hot that it catches fire.

Will food byproducts such as vegetables and fruit generally make the pile more acidic or basic and why is this good or bad?

- More acidic
- Microbes need a neutral pH environment to flourish and grow. At pH levels of 4.5 or less, aerobic microbes die, equipment corrodes, and odors occur. Low pH and odor are good indicators that more oxygen is needed. In order to increase flow of oxygen, check to see if the pile is too wet or poorly mixed.

Common reasons and solutions for compost piles that are generating odors:

- Aerobic decomposition generates ammonia if the C:N ration is less than about 20:1 (nitrogen rich)
- A pile of pH greater than 6.0 promotes hydrogen sulfide and mercaptan (created when food scraps are incorporated) generate. A high pH indicates oxygen is deficient. Aerobic decomposition reduces these sulfides to odorless sulfates.
- Under aerobic conditions, the Volatile Organic Acids (VOAs) are oxidized quickly to carbon dioxide and water. Under anaerobic conditions, VOAs do not decompose rapidly. Their smell has been described as similar to "old vomit".
- Wet, nitrogen rich materials should be composted as soon as possible to reduce the risk of odorous anaerobic conditions. Examples of material with low C:N rations include:
  - Slaughter waste (15-18)
  - Ditch scrapings (10-15)
  - Vegetable waste (13)
  - Hog manure (5-7)