

# Horse Environmental Awareness Program

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CONNECTICUT

## Composting -- Recycling the Feed You Have Paid For

As Connecticut horse owner Tom Elliot points out in HEAP's *Good Horse Keeping* video, you've paid good money for your horse waste (in the form of purchased hay, grain, and bedding). Throwing it away may be foolish. It is a valuable resource for you or for someone you know. Composting your horse waste is a way to increase its value.

### Benefits of Composting

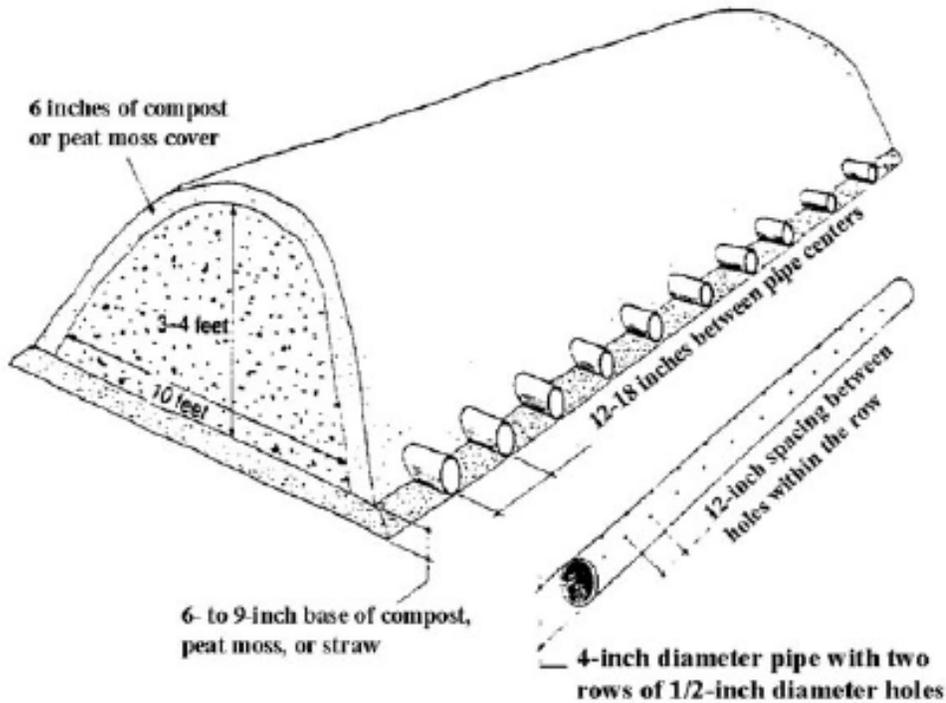
- The composting process kills parasites and weed seeds in horse waste
- Finished compost improves the soil quality of the fields to which it is applied
- Since compost is already broken down, it does not cause nitrogen depletion in the soil. Nitrogen depletion can occur when un-composted horse wastes are spread on fields
- Finished compost contains plant nutrients in a stable form which slowly deliver some fertility to the plants and crops that receive it

### Composting Basics

1. **Oxygen is necessary to maintain the proper temperature range for the composting process.**
  - Actively turned (mixed on a regular basis) piles compost relatively quickly. Turning may be done on a weekly basis, or may be based on the measured temperature of the pile. Frequent turning accelerates the composting process, yielding a finished product in as little as three months.
  - Passively aerated static piles are not turned, but receive some aeration from perforated pipes that are placed in the pile. The total time it takes to compost a passively aerated static pile will be somewhat shorter than that of a non-aerated (static) pile, but will be slower than that of an actively turned pile.
2. **Internal temperatures** should be maintained at about 140 degrees F. A compost thermometer may be purchased from a garden supply dealer. To maintain an active composting process, piles should be turned when temperatures fall to 110 degrees F, or when they rise above 140 degrees. A minimum pile size of 4 feet X 4 feet X 4 feet is needed to achieve composting temperature. On smaller farms, a 3 bin system may be used to contain waste at different stages of the composting process. Larger facilities may create long free-standing piles, called *windrows*. The base width of a pile or a windrow should be twice its height. A 5 foot high pile will be 10 feet wide and can be formed into a windrow of any length.
3. **Moisture content** should be that of a wrung-out sponge. Excessive moisture (too much rain) or dryness (lack of moisture and/or too much sun exposure) will hinder the process
  - Water may be added to the pile as needed
  - Covering the pile will help to maintain the proper moisture level. Covering will also prevent rain water from leaching contaminants from the pile and creating a pollution hazard, as well as reduce fly breeding habitat.
4. **Carbon: Nitrogen Ratio** will affect the speed of the composting process. The ideal ratio is 20:1 to 40:1. Straight horse manure (without bedding) is approximately 25:1. This is the ideal ratio, but the physical characteristics of straight manure make it difficult to keep aerated. Wood shavings, our most popular bedding material, provides physical structure which facilitates the aeration of horse manure. Unfortunately, the C:N ratio for wood products is in the range of 500:1. Large quantities of bedding in horse waste can significantly slow the composting process. More frequent turning and/or the addition of Nitrogen (in the form of manure or urea) to the compost "recipe" is sometimes necessary for faster results.
5. **Finished compost** will not heat up anymore, has an earthy smell, and has a crumbly, soil-like texture. Producers of high quality compost will allow the pile to sit and "cure" for at least one month after composting is complete.

## 6. Location of compost piles

- Composting activities should be located as far away from watercourses as possible. A separation distance of 200 feet or more is desirable. The proximity to surface and ground water is just as critical for compost piles as it is for manure storage facilities.
- Use water diversions to prevent storm water from running onto your compost site.
- Be prepared for the possible occurrence of combustion fires. Locate piles away from buildings, and have a convenient water source for such emergencies. The water source may also be needed for maintaining the proper moisture content of the pile.



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