

# Composting Chicken Manure

**Chickens Produce Eggs and Manure.** Your chicken produces an egg every 24 hours and it is wonderful to have your own home-produced fresh eggs. Your average size hen also produces 1 cubic foot of manure every six months. What are you doing with this? Manure simply can't continue to accumulate in your coop. It stinks, attracts rodents and flies, and the ammonia is not healthy for your chickens to breathe.

**Benefits of Chicken Manure.** Don't despair; manure can be one of the greatest assets for a home gardener! Although chicken manure is too strong to be used raw on your flowers or vegetables, it can be composted and converted to "black gold". If used without composting it could damage roots and possibly kill your plants, however, once it is composted chicken manure is:

- A good soil amendment, chicken manure adds organic matter and increases the water holding capacity and beneficial biota in soil.
- A good fertilizer; chicken manure provides Nitrogen, Phosphorus and Potassium to your plants (more than horse, cow or steer manure).

**Composting Chicken Manure.** If you are not familiar with composting and need to learn how, contact the Seattle Tilth Garden Hotline at 206-633-0224. Hotline staff will provide you with information about the components of composting: Carbon (*browns* - your coop bedding), Nitrogen (*greens* - your chicken manure), air, moisture, volume, and temperature. Here are some recommendations to get you started using chicken manure in your compost pile:

- **Collect manure and bedding.** Chicken owners normally use bedding such as shavings, sawdust, dry leaves, or straw to provide a dry cushion for chickens and to control odor and pests. The coop bedding can be collected with the manure and dumped into a composting bin. Some owners prefer to pick manure and soiled bedding out of the coop on a daily basis; others will add new bedding over droppings and collect on a less frequent basis.
- **Carbon to Nitrogen balance.** A combination of 30 parts Carbon to 1 part Nitrogen creates the ideal environment for microbes to break down organic material to produce compost. When combining coop bedding and chicken manure how do you achieve the ideal C: N ratio? Since the different beddings have their own C: N ratio, the proportion of bedding to manure will vary depending on the type of bedding used. To keep things simple most composters follow the general rule of 1 part brown to 2 parts green. However, because chicken manure is so high in Nitrogen you may be more successful using a 1:1 or even a 2:1 mixture.
- **Use a "hot compost" recipe.** By combining the correct ratio of bedding and manure at one time to form a pile, approximately one cubic yard, then adding moisture (material should be about as wet as a well wrung sponge), will produce a hot pile. It is recommended that the compost pile heat to 130-150 degrees F and maintain that temperature for 3 days. Heating is necessary to destroy pathogens but temperatures above 160 degrees F can kill beneficial microorganisms and slow the process. To help you achieve appropriate temperature you can purchase a compost temperature gauge from a local nursery.
- **Repeat the heating process.** Once the center of your compost pile has reached the required temperature for three days it will start to cool. After it cools, pull the center apart and move the core material to the edges and bring the edge material into the center to heat. For 1 cubic yard of material repeat the process of bringing edges into the core at least 3 times.

- **Let it cure.** Monitor the pile and once you are satisfied that the entire contents of your bin has been heated, loosely cover and let cure for 45-60 days before using. It's ready when most material is dark, crumbly and sweet-smelling like soil.
- **Add to garden.** You can add the resulting compost to your vegetable garden or flower bed by spreading it on the surface or by gently working it into existing soil.
- **Composting challenges.** Does your compost pile stink, never decompose, or attract pests? Get advice from the Seattle Tilth Garden Hotline at 206-633-0224.

**Compost Bin.** Your bin should be at least 1 cubic yard in size (3x3x3 feet). If possible, we recommend that you use a 2-bin compost system. One bin will be in the hot compost phase and the other will be in the curing phase. You may also need a storage site for the carbon materials you collect. This can be a 3<sup>rd</sup> bin or it can just be a pile of leaves or bags of shavings stored in a dry area. If you want to add grass clippings or weeds to your bin, you will also need a storage site for this material. The Seattle Tilth or WSU websites listed below under **Resources** provide plans for building a backyard compost bin.

**Manure Safety Tips.** Fresh chicken manure may contain disease organisms that could contaminate root crops (carrots, radishes, beets) and leaves (lettuce, spinach), so DO NOT spread uncomposted manure on the soil in your vegetable garden. The following "Safety Tips" are summarized from the Stewardship Gardening Program provided by Washington State University:

- Apply only aged or composted manure to your soil.
- Always wear gloves when handling livestock manure.
- Thoroughly wash raw vegetables before eating.
- Do not use cat, dog or pig manure in compost piles.
- People who are susceptible to food borne illnesses should avoid eating uncooked vegetables from manured gardens. Those who face risks from food borne illness include pregnant women, very young children, and persons with cancer, kidney failure, liver disease, diabetes or AIDS.

## Resources

-- *Composting Livestock Manure, Using Composted Manure Safely in the Garden.* WSU Cooperative Extension. <http://gardening.wsu.edu/stewardship/compost/manure/manure2.htm>.

-- *Strategies for Livestock Manure Management.* WSU Cooperative Extension. King County, Agriculture and Natural Resources. Fact Sheet #539.

-- The Seattle Tilth 3-Bin Yard Waste Composter plans.

-- The Seattle Tilth Garden Hotline is 206-633-0224.

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