

## Using Manure, Including Chicken Manure, as Compost

**See Fact Sheet #12 Compost for detailed information on making a compost pile and bin.**

Fresh animal manures sometimes contain human pathogens such as *Salmonella* sp. or *E. coli* O157:H7, or parasites, such as *Cryptosporidium parvum*. These pathogens are not taken up into plants, but they can be present in soil that adheres to the surfaces of roots or low-growing leaves and fruits. Peeling or careful washing with detergent will remove most of the pathogens responsible for disease, but some risk remains. Alternatively, thorough cooking will effectively kill pathogens carried on garden crops. If no fresh manure is used in the garden, the risk is minimized.

The greatest risk from manure-borne pathogens is for root crops such as carrots, leaf crops such as lettuce, and fruit crops such as strawberries. The edible part of these crops may become contaminated with soil, the crops are difficult to wash, and they are often eaten raw.

Pathogens in fresh manure typically die off in the environment over time, especially when the manure dries or is exposed to freezing and thawing. The rate of pathogen die-off depends on the type of pathogen and manure, and on environmental conditions such as temperature, moisture, and sunlight. Thorough, high-temperature composting kills pathogens, but it is difficult to maintain these conditions in a backyard compost pile. Before using fresh manure (not advised) that has not been thoroughly composted at high temperature, or aged for at least one year, wait at least 120 days from the time of applying manure to the time of harvest of high-risk crops (those where the edible part is in contact with the soil, such as root and leaf crops, and fruit) if those crops are not to be cooked. Wait at least 90 days for other crops.

It is best to keep dog, cat, and pig manure out of your compost pile and garden. Some of the parasites found in these manures may survive for long periods in compost or in the soil and remain infectious to people.

### **Composting Chicken Manure**

A 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. 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

As with other manures, chicken manure is too strong to be used raw on your flowers or vegetables, but 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

- **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.
- **Carbon to Nitrogen Balance.** A combination of 30 parts Carbon (referred to as browns) to 1 part Nitrogen (greens) creates the ideal environment for microbes to break down organic material to produce compost. Carbons are your coop bedding, and the nitrogen is the manure. When combining coop bedding and chicken manure how do you achieve the ideal C: N ratio? Since different types of bedding each has its 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.

**Safety Tips.** Fresh manure may contain disease organisms that could contaminate root crops and low-growing leaves and fruit, so DO NOT spread uncomposted manure on the soil in your vegetable garden.

- 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.