



# Choosing Organic Matter for the Home Garden

Guide H-108

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Organic matter is an important soil material. It consists of raw and partially decayed plant and animal residues.

Organic matter binds soil particles, granules and aggregates together. It aids water penetration and aeration of plant roots in clayey soils and increases moisture-holding capacity of sandy soils. It also adds some nutrients for plants and microorganisms.

Organic matter in soil can be depleted. Continued soil productivity depends on replenishing and maintaining of organic matter. Homeowners who know about the importance of organic matter in their soil try to replace it whenever possible.

Two primary sources of organic matter for homeowners are peat moss and animal manures. Each of these materials is useful, and if used properly, reduces soil problems.

Peat moss comes in many weights and types of containers. Most nurseries have it in plastic bags. Peat comes in a variety of physical forms. It usually is reddish brown to black. It will be fibrous or nonfibrous, depending upon its state of decomposition. Water-holding capacity ranges from 150 to 3,000 percent of its weight, and nitrogen content varies from 0.6 to 3.5 percent. Unfortunately, this data usually is not shown on the container, so the homeowner has little choice between brands.

Peat moss usually is available in moist or dry forms. Each form offers certain advantages. The dry form is an economical way to purchase peat moss on a pound basis. Up to 80 percent of a moist peat moss can be moisture. So in a sense, you are purchasing water when you purchase the moist form. On the other hand, dry peat moss should be soaked in water or otherwise moistened before it is used.

If not, it can soak up tremendous quantities of water—perhaps at the expense of your plants. Dry peat moss also can blow away.

Animal manure adds more organic matter and humus to the soil than nutrients, but it provides a certain amount of plant food. Animal manure should not be used as a substitute for commercial fertilizer nor should commercial fertilizers be depended upon for humus.

Animal manures should be dried, aged or composted before being used in garden or flower beds. Topdressing a lawn with manure can cause serious problems because of the resulting organic matter layering effect similar to thatch. The organic matter layer, if serious enough, actually can prevent air and water from entering the soil.

Manure quality varies depending on moisture content, the animal, the animal's diet and the place where the animal is confined. Manure content of trace nutrient elements required by plants, as well as the major nutrients—nitrogen, phosphorus, and potassium—depends on the source of the animal's feed.

Unfortunately, manure contains numerous weed seeds. The disadvantage of weed seeds should be considered before deciding to use animal manure in a garden or flower bed. The weed seeds in treated manures usually are killed, but the treatment adds to the manures retail price. Well-composted manure can be weed-free.

Table 1 shows the average plant nutrient composition of some fresh animal manures. Price per ton of manure should depend on the moisture content. As an example, fresh dairy cow manure is approximately 79 percent moisture. This means that a ton

of this material contains about 1,580 pounds of moisture and the remaining 420 pounds is organic matter. If this same dairy manure were only 25 percent moisture, it would contain only 500 pounds of moisture and 1,500 pounds of organic matter.

**Table 1. Average plant nutrient composition of fresh animal manure.**

Animal	Water percent	Nitrogen	Phosphorus lbs/T	Potassium
Dairy cows	79	11	2	9
Fattening cattle	78	15	4	9
Sheep	64	22	6	22
Horse	59	14	2	13
Swine	74	10	3	8
Hens without litter	76	23	8	8
Hens with dry litter	25	45	23	20

Moisture contents of most manures can be estimated by using table 2. All other factors being equal, a drier manure is worth more per ton than a moist manure.

**Table 2. Visual estimation or moisture content of animal manures.**

Moisture content	Description
0-30%	Dusty to slightly dusty
30-50%	No dust, but crumbly
50-70%	Crumbly to sticky
70%	Wet, sticky and possibly caked

Mulching materials, such as bark and sawdust, decompose. But it is a slow process and may require added nitrogen.

Other sources of organic matter are available to the homeowner. Many gardeners prefer to “spade under” plant residue and some compost all of their leaves and grass clippings. Still another source of organic matter is sewage sludge, if available. Processed sewage products are available commercially, but some brands are expensive.