HOME & GARDEN

It's time to feed the soil

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A few years ago I was involved with a school garden project. The soil test results were very discouraging. I hardly knew where to begin because the soil was so poor. I only knew I didn't want to take the easy way out by spreading a sack of 5-10-5 fertilizer on the garden. Fortunately an experienced gardener told me not to get too caught up in the numbers and just to begin a plan of annual soil improvement.

He said that by applying a commercial chemical fertilizer I would give the garden plants the basic nutrients that they needed to survive and produce, but that I would not be improving the soil or adding those trace elements that are also necessary to plant health. Since then I have tried to take this advice and I concentrate on feeding the soil — not on feeding the plants.

First, every garden should be tested for PH, and this is one number that I do pay attention to. Most vegetables prefer a slightly acid soil that ranges from 6.2 to 6.8. In New England the soils are generally more acid than this, so it is important to spread lime to bring the acidity to a more acceptable level.

Another disadvantage to a too-acid soil is that even if phosphorous and potassium are present, they will be "bound-up" and will be unavailable to growing plants. This means that even without adding other fertilizers, a garden soil that has had its PH raised from 5.5 to 6.6 will have a higher fertility.

Lime should be applied in the fall or the very early spring to freshly cultivated soil. Ground limestone is the best form of lime to put on the garden, and dolomitic limestone is especially valuable because it contains magnesium, a trace element that is important to plant growth.

BETWEEN THE ROWS

Since I burn wood all winter, mostly hardwood, I also spread the wood ashes on the garden in the spring, and thus add potash, magnesium and phosphoric acid to the soil. Wood ashes also raise PH slightly. Coal ash and paper ash are not valuable and, indeed, may contain harmful compounds.

I raise chickens for meat and eggs, and along the way I harvest their manure for the garden. Chicken manure is very "hot" and will burn plants if applied to the garden while they are growing, so I compost it first, or till in the hen house cleanings into the soil a month before I plant my seeds.

Chicken manure provides about 30 pounds of nitrogen, 14 pounds of phosphorous and 7 pounds of potassium per ton of manure. Cattle and horse manure are not as rich, but I use them as well when they are available.

In the summer I often give my garden plants a boost by watering with manure tea. I make this by steeping a sack of manure in a large drum of water for 20 to 30 days. If the color of this water is very dark when I use it, I dilute it with fresh water till it is the color of weak tea.

Rock phosphate is an excellent source of phosphorous that plants need for strong roots, fruit development and resistance to disease. Rock phosphate also contains trace minerals like manganese dioxide, zinc, boron and iodine. It is usually ground so fine that plant roots and bacteria in the soil break some of it down in a short time and make it available to the plant. This action goes on long after it is applied.

The Encyclopedia of Organic Gardening recommends spreading 25 pounds of manure on 100 square feet of garden, tilling it in and then adding 10 pounds of rock phosphate a month or two later.

In addition to lime, manure and rock phosphate I compost my weeds, kitchen and garden refuse and autumn leaves. In this way I feel I am returning to the soil all the nutrients that these plants have removed.

Even the hay mulch that I use on my garden paths slowly breaks down, adding humus to the soil and improving its structure.

Some people don't have access to animal manure, which is such a valuable fertilizer, but they needn't be forced to rely on chemicals. Green manures can improve soil fertility and structure tremendously.

A green manure is a crop like annual rye or clover that is grown only to be plowed under to enrich the soil. The roots penetrate deep, collecting nutrients into the plant that is then tilled into the surface of the soil where it will break down and return those nutrients to the soil.

Green manures act to fertilize the soil and improve its structure because they add humus to the soil. I plant rye when I take out a crop like beans in the fall. It begins to grow, then lies dormant, only to spring to life when the weather first turns warm.

Now that my family has shrunk, I have decreased the size of the garden by one-fourth, but that fourth is planted to clover, which needs a whole summer to mature, and becomes part of the rotation of the garden. By this simple technique, I fertilize, improve the structure or tilth of the soil and discourage disease and pests.

A rich soil can be compared to a well-stocked larder, but every time a plant is grown and harvested, food is removed from that larder. If care is not taken to replenish the stores, the day will come when the cupboard will be bare. Garden crops will be sparse, weak and prone to disease. This won't happen if it becomes a matter of routine to return to the soil more than is removed.

Getting down to more

GARDEN CALENDAR

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