

The Garden Plot, April 2008

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The first year of *Garden Plot* columns provided month-by-month coverage of very basic gardening methods and concepts. Those columns are available for free, together with much more gardening information, at <http://www.eagleheightsgardens.org/tips/monthlyadvice.shtml>. From now on, I will focus more on special topics, providing information that is not absolutely essential for a beginning gardener, but which I feel you should or might want to know eventually.

I've mentioned fertilizers briefly in the past, but they're important enough to cover now in more detail. You **MUST** fertilize to get the most out of your garden. If you go year after year without fertilizing, your soils will be depleted of nutrients, your yields will drop, and your plants may show symptoms of either nutrient deficiency or disease. Fertilizers can be purchased at many stores, and if you use them you will almost certainly get your money back in the form of green, growing things.

If you aren't familiar with the word, a "fertilizer" is anything that's added to soil to help plants grow. Fertilizers can be "natural" (some use the word "organic") in origin, meaning they are made from manure, animal parts (blood or bones, for example), plant parts (sugarcane waste or ground seaweed, for example), or naturally occurring rocks or rock-like materials (sulfur, for example, from ancient volcanoes). Fertilizers can also be "synthetic," meaning that their production somehow involves the use of industrial chemicals like acids and (often) a source of energy like natural gas.

As far as we know, plants don't care where their nutrients come from. To a plant, nitrogen is nitrogen, whether it comes from cow manure or from a giant factory that pulled it out of the air (more than 70% of the air we breathe is nitrogen, but in a form that is unavailable to plants).

To both people and plants, however, there are some important differences between natural and synthetic fertilizers. Some of these differences have to do with opinion. There are people who think that fertilizer that comes from plants or animals is "good," somehow healthful, while fertilizer made using industrial processes is "bad," somehow damaging.

Other differences between natural and synthetic fertilizers are less a matter of opinion and have more to do with what's in the fertilizer than with where it came from. Synthetic fertilizers are certainly much more concentrated than natural fertilizers. A bag of synthetic fertilizer might be labeled 18-51-20, numbers that represent the percentages in the fertilizer of the three nutrients that plants need in the largest amounts (in order, these are nitrogen, or N, phosphorus, or P, and potassium, or K). This is supposed to mean that a 100 kg (220 lb) bag of this fertilizer would contain 18 kg (40 lbs) of N, 51 kg (112 lbs) P, and 20 kg (44 lbs) K. This is not exactly true, but it does show you that the fertilizer contains a lot of N, P, and K.

By comparison, natural fertilizers contain much lower amounts of nutrients. For example, a fertilizer called Milorganite (made in Milwaukee from sewage) says on its bag that it is 5-2-0 (5 percent N, 2 percent P, and no potassium, or K, at all).

You might think that using a synthetic fertilizer would be the obvious choice – why not give plants lots and lots of nutrients? – but the nutrients in synthetic fertilizers can actually be *too* abundant and *too* available. A small, growing plant can't take up a bunch of fertilizer all at once, so there's the possibility that much of the synthetic fertilizer you apply will be washed away or otherwise lost. Natural fertilizers contain fewer nutrients, but release what nutrients they do hold over a longer period of time such that plants are always getting at least some of what they need.

I myself do not have strong feelings about natural or synthetic fertilizers. If used properly, both can yield healthy, productive plants without damage to the environment. There do appear to be compounds in some

natural fertilizers that are not actually nutrients but still perform some important function, like controlling fungal diseases that would otherwise infect your plants. Scientists are just beginning to do research on this, and it could be a reason to use natural rather than synthetic fertilizers.

At Eagle Heights Gardens, the choice is made for us: all gardeners there are requested to use organic methods. That means (among other things) that gardeners there should use natural fertilizers rather than synthetic ones, and must also avoid synthetic chemicals that kill weeds and insects. At University Houses Gardens this is not the case – you can use whatever fertilizers and pest controls you like, though you are asked to be considerate of your neighbors.