

The Garden Plot, November 2009

By Robin Mittenthal, University Apartments Community Gardens Committee

*Possible garden tasks for November:* You can still plant garlic early this month. Garlic planted in late October or early November should be covered with a layer of leaves or straw by the end of November. The rest of your garden can also be covered with leaves (as much as 15 cm or 6 in, if you have the energy to bring them to your plot!). This will prevent soil erosion over the winter and slow weed growth in the spring. Clean up and put away tools and hoses. See the garden manual and previous Garden Plot columns at <http://www.eagleheightsgardens.org/> for advice on these tasks.

*News from the Eagle Heights Garden Committee September meeting:* The meeting started with several small items of business (including notice that the gardens are moving to a calendar year for budgeting purposes), but most of the meeting had to do with discussing the plot application for 2010. Some important changes include 1) the due date – the application will be posted on the web site on or before Dec. 15, and can be submitted any time after Dec. 15, with priority given to those who submit before Feb. 15; and 2) both small and large plots are available for different fees, and new gardeners are encouraged to try a small plot for at least one year before applying for a large one.

Gardeners are encouraged to attend the next meeting/potluck at 7 pm, Oct. 27, in the Community Center and help run the gardens. You can also get involved by posting and responding to posts at the garden forum (see the web site listed above). Those who participate significantly in running the gardens in 2010 can have their plot fee waived for 2011.

*This month's column:* Eagle Heights Gardens was established in 1962, making it one of the oldest community gardens in the United States. That's great, because that means a lot of people have been gardening here for a long time, but it's also a problem, because for decades many gardeners have grown plants without using fertilizers. As a result, if fertilizers are not used now, the plants tended by today's gardeners can suffer nutrient deficiencies that lead to poor growth and reduced yield. Fruits and leaves of nutrient-deficient plants may also be more vulnerable to disease, less nutritious and store less well than produce from plants that have everything they need.

I want to emphasize that fertilizers should be used every year even in plots that *have* been fertilized regularly in the past (see the garden manual and previous Garden Plot columns available under "Gardening Tips" at <http://www.eagleheightsgardens.org/> for advice on how to use fertilizers; keep in mind that leaves and compost, while useful in the garden, are NOT fertilizers!). If you're like me, you take a large weight of produce out of your plot each year. While most of that weight is water, and much of the rest is carbon, hydrogen, and oxygen (chemical elements that plants get from either air or water), you're still taking away many kilograms (or pounds) of the 14 essential elements that plants can only get from the soil. Some of these 14 elements are abundant in the soil, but others are not and must be replaced regularly. It's also possible for a nutrient to be present – even abundant -- in the soil but locked away chemically in a form that's unavailable to plants.

For those who know what to look for, nutrient-deficient plants may display one or more symptoms (visual signs) indicating that something's wrong. In some crops and for some nutrients, these symptoms may be obvious. Corn is one of the easiest crops to "read" this way. In corn, a lack of nitrogen (the most commonly deficient nutrient for all crop plants) can make a plant's leaves turn yellow, with the yellowness moving in a V-pattern down the center of older leaves. Potassium deficiency in corn also causes yellowing of older leaves, but the yellowness moves in from the edges of the leaves. A lack of phosphorus in corn causes reddening, again beginning with the oldest leaves. In each case, a severe, prolonged deficiency causes tissue death, once again starting with the oldest (bottommost) leaves on the plant.

Why should the oldest leaves on a plant be affected by nutrient deficiencies and not the younger ones? The answer has to do with the mobility of certain nutrients within plants. Some elements, including nitrogen, phosphorus, and potassium (the three that plants need from the soil in the largest quantities) are "phloem-mobile." This means that if a part of a plant like a new leaf or a rapidly growing fruit needs one of these elements, the plant can take it from some old tissue and move it through fluid-filled tubes called phloem to the new place.

Other nutrients, including calcium, are not phloem-mobile. As a result, plant parts like tomato fruits that need a lot of calcium can end up without enough of it. In tomato plants, this can result in a condition called “blossom end rot,” in which the bottom of each affected fruit turns black and soft. I’m writing this column in part because blossom end rot is common in Eagle Heights garden plots (see the resources mentioned above for tips on how to fertilize tomatoes and prevent this problem). Related conditions are also common in squash, cucumbers, and watermelons, all fast-growing fruits that need a lot of calcium.

Unfortunately, most nutrient deficiencies are not easy to diagnose visually, and some are easily confused with diseases. If you suspect a nutrient deficiency, you can submit some tissue from your plants to the UW Soil and Plant Analysis Laboratory (go to <http://uwlabs.soils.wisc.edu/madison/> and look for the section titled “Plant analysis... for diagnosis of nutrient problems”; this service is not free but is not very expensive). On the other hand, you could also just try providing your plants with what’s called a “complete” fertilizer – one that provides all of the nutrients plants need. This won’t necessarily fix the problem within the current gardening season (once a plant has visible deficiency symptoms, it’s often too late to help it), but should help to prevent the same problem the following year.