

July Gardening Workshop: Plant and Garden Maintenance

By this time, your garden should be growing and producing, or close to producing vegetables. All of your hard work is paying off! However, the work is not yet done, and this is a critical time for your garden. Your focus needs to switch from planting seedlings to keeping them alive and thriving. Proper garden maintenance is essential for a successful fall harvest.

The first part of plant maintenance is weeds.

A few facts on Minnesota gardens:

- All soils in Minnesota contain weed seeds.
- Weeds spread by many sources including the wind, bird deposits and last year's crops & weeds.
- Do not let weeds and flowers set seeds.
- If you have perennials near your vegetable garden, be careful as they will continue to emerge in your vegetable garden.
- There are few chemical herbicides suitable for use in vegetable gardens.
- If you can recognize problem weeds before they become established, you may have an easier time keeping these weeds from overtaking your garden.

Weeds can also enter your garden from adjacent lawns, fields or woods. Debris on your shoes can also spread weeds. Weeds with underground stems (creeping grasses), can travel as much as a foot through the soil before emerging in your garden.

Weeds can invade a very controlled garden, even ones with raised beds, patio containers and areas covered with plastic mulch. Basically, there is no getting around weeds. ☹

Weeds can do the following harm:

- Competition from weeds can reduce yields of crops that you are growing.
- Weeds make it difficult for your garden plants to get enough water, nutrients and sunlight.
- Weeds can harbor insect pests and impede airflow creating a favorable environment for plant diseases.

So now what?

- Make weeding a part of every interaction with your garden.
- Do not let weed flowers set seeds. Prevent the number of weeds from increasing by eliminating weeds before they flower.
- Get a hoe! Use the hoe to lightly scrape around your plants and in the areas between the rows. This eliminates weed seedlings when they are too small to pull by hand.
- Do not scrape or chop too close to your plants so that you do not harm the roots of your vegetable plants.
- Almost any kind of mulch can help in your battle against weeds.

Herbicides

- Most herbicides are not recommended for the use in vegetable gardens
- Keep in mind that federal law governs the use of all pesticides.
- Never spray on a windy day.

The second part of plant maintenance is caring for your plants by thinning, staking and looking for diseased leaves.

Thinning plants and staking them allow for plants to grow to their full potential.

- Refer back to your plant packets to see how far apart your plants should be.
- Carrots are very hard to see when they are first growing. By now, they should be quite visible so inspect them to ensure that they are not too close together. You may have to pull every other, or every third carrot so that they do not get too crowded. Replanting these would be difficult to do.
- Root vegetables need adequate space below the soil in order to grow.
- Squash, zucchini, pumpkins, and melons grow vines. Is there enough room in your garden for these to grow without invading your other plants?
 - These plants can be taught to grow up a fence.
 - You can gently tie these vines to a fence or a pole to encourage vertical growth.
 - In both of these cases, you will need to support the growing fruit or vegetable.
- Thinning plants also allows for critical air flow. If your garden is too crammed, air flow will be compromised.
- Tomatoes should now be caged so that the emerging fruit is not on the ground.
- Peas and pea pods are climbing plants and should be growing along a fence or a wall. Once the pea or pea pod stops producing, and all vegetables have been picked, these plants can be pulled up and put in a compost pile.

As gardens mature, keeping an eye out for diseases and pathogens is essential.

By now, many crops have accumulated some level of leaf spot, fruit rot or other disease problems. Even if these diseases are not severe enough to reduce yields this year, many plant pathogens are able to survive in crop residue from one season to the next, resulting in disease problems in following years. Several basic cultural control practices can be used to reduce the risk of disease spread to other crops in this growing season and the next.

First, try and diagnose any unknown plant diseases in the field. A few plant pathogens, like white mold (severely affects pumpkins through the blossom end) or Tobacco/Tomato Mosaic Virus (yellowing and stunting of plants) are able to survive exceptionally long periods of time in soil and crop residue. It is important to identify these problematic pathogens early, remove infected plants promptly, and follow sanitation procedures specific to that disease to reduce the ability of the pathogen to survive on site.

While harvest is ongoing, remove infected plants or plant parts to prevent spread to

neighboring healthy plants. Many common leaf spot and fruit rot diseases are caused by fungi or bacteria that spread from plant to plant on splashing water or wind. Removing infected plants or plant parts and burying them in a compost pile can reduce the spread of the pathogen through the crop.

For example, remove rotten tomatoes from the plant to prevent spread to immature tomatoes on the vine. Infected fruit should never be harvested with marketable fruit. Rather after harvest of marketable fruit is complete, infected fruit should be collected in a bucket designated for compost and buried in a compost pile.

After harvest is complete for that crop, till plants into the soil as soon as possible. This is especially important if there are crops in the same family in neighboring fields. Many plant pathogens spread on splashing rain or wind to infect nearby plants. Burying infected plant debris below ground reduces spread of the pathogen to other crops and allows the naturally occurring composting soil microorganisms to begin to break down the infected plant debris. This needs to be done in combination with rotation to crops that are not susceptible to the disease (typically a different plant family) for 3 to 4 years. Rotation allows time for pathogens in the infected crop residue to die off.

Pinch off diseased or discolored leaves and dispose of them. Watch your fruit and vegetables too! If anything is discolored or damaged, pull it off of the vine and dispose of it. Proper air flow and proper watering play an important part in plant maintenance.

Insects can be picked off of plants and squished or put in a bucket of soapy water. If there is an insect infestation, it is important to identify the insect and research ways to eradicate it.

Photos of plant diseases and insects (close up photos) are a great tool when needing help with identification. Below is an example of a close up photo:

