Growing Healthy Vegetables
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Spots, rots, wilts and other plant problems often appear in the vegetable garden. Below are a few strategies to keep plant disease at a tolerable level. Remember the goal is a good harvest of tasty vegetables. It is ok to tolerate low levels of plant disease.

Find information about growing healthy vegetables at www.extension.umn.edu/garden/yard-garden/

Start Out Right

**Seeds**
- Look for disease resistant or tolerant varieties for disease problems you have seen in the past.
- Purchase seed from a reputable source.
- If saving your own seed, collect seed only from healthy plants.
- If you suspect seed may be contaminated, soak in 1:4 bleach solution for 1 minute and rinse in running water for 5 minutes just before planting.
- If starting seeds indoors, use new potting mix with new pots or pots cleaned with 10% bleach.
- Keep soil moist but not soggy. Provide good air movement around plants.
- If starting seeds in the garden wait until the soil is warm enough to plant.

**Transplants**
- Purchase healthy transplants from a local reputable grower.
- Inspect all transplants prior to purchase. Reject any plant with dark, discolored or soft sunken spots on leaves, stems or roots.

**Rotate Crops**
Plant in a location where no member of the same plant family has been grown for 2-4 years.

![Cabbage family](image1)
![Tomato family](image2)
![Squash family](image3)
![Bean family](image4)
![Onion family](image5)

**Pots, Trellises, and Tools**
Remove all dirt and plant debris. Clean everything with 10% bleach solution before using in the garden.
Managing Disease throughout the Season

Scout for Problems
Diseases are easier to deal with if identified early. Once disease is severe, there is little that can be done.
• Examine plants once a week throughout the gardening season.
• Use the online diagnostic tool ‘What’s wrong with my plant?’ www.extension.umn.edu/garden/diagnose/ or send a sample to the UMN Plant Disease Clinic http://pdc.umn.edu to identify pest problems.

Manage Moisture
• Fungi and bacteria thrive in humid conditions.
• Use drip irrigation or water with a sprinkler early in the day so that the plant dries quickly in the sun.
• Space plants for good air movement so plants dry quickly after rain or dew.
• Stake vining plants like cucumber, bean, and tomato.
• Mulch to completely cover the soil with plastic or organic mulch like straw or woodchips.
• Do not work in plants when leaves are wet. Fungi and bacteria easily spread under these conditions.

Manage Weeds
• Weeds crowd the crop and increase humidity on leaves and fruit.
• Weeds steal nutrients and water from the plant, resulting in plant stress.
• Many pathogens can survive on weeds and then move into the crop.

Remove Diseased Plant Material
• Completely remove plants infected with a virus or aster yellows.
• Pinch off leaves infected with leaf spots and remove them from the garden. Never remove more than 1/3 of a plant’s leaves.
• Remove rotten fruit from the garden to prevent spread to developing fruit. Do not harvest rotten and ripe fruit together or rot may spread in the refrigerator.
• At the end of the growing season completely remove diseased plants.
• Diseased plant material can be composted if the compost pile gets hot (>148 °F) and the plants completely break down.
• If the garden is very large, bury plant debris to begin the decay process and rotate to a different plant family the following year.