

PEST AND DISEASE MANAGEMENT

Plant Diseases

Disease is a cause of lowered efficiency or final breakdown in the plant's function and growth. The signs and symptoms of the disease can give a good indication of the pathogen involved, or at least the general group of the pathogen.

Sometimes it is impossible to identify the cause of a plant disease without a laboratory diagnosis. If it doesn't effect yield or quality a diagnosis is not needed.

There are three general categories of disease-causing organisms: fungal, bacterial and viral pathogens.

Fungal Pathogens

These are the most numerous of the plant pathogens and can infect the roots, stems, leaf, and flower tissues. They are often found in the soil and many times can persist from season to season between crops. Symptoms include wilts, stem rots, mildews, rusts, leaf spots, and numerous others. Fungi generally do well in cool to slightly warm conditions with lots of available water. Many times you can see the actual fungus that is causing the disease with a hand lens or the naked eye.

Bacterial Pathogens

These need a wound or some type of opening to invade the plant. This can be any type of tissue damage and primarily affects the upper parts of plants. Bacterial pathogens can be seed borne, and are sometimes found in the soil or on plant debris. Bacterial pathogens cause leaf spots, cankers, galls, and other symptoms. Transmission occurs from plant to plant, mechanically. Bacterial pathogens do well in warm, moist conditions. You cannot see the actual bacterial pathogen without a microscope.

Viral Pathogens

Viral pathogens can cause deformations, unusual elongation, discoloration, or reduced yields. They are transmitted by insects, mechanically, or by seed. The best control is to reduce the insect population.

Click this link <http://www.ipm.ucdavis.edu/PMG/selectnewpest.landscape.html> to go to the UC IPM website Plant Disease Index to read more and see examples of specific plant diseases.

Nematodes

These small worms are typically found in the soil which may infect the roots of most crops. Solutions are to solarize the soil with clear plastic, rotate crops, and plant resistant varieties, where available.

Click this link <http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7489.html> to go to the UC IPM website to read more and see examples of nematodes.

Control of Plant Pathogens

There are several good practices that will minimize infection from plant pathogens. These include the following:

- Good Sanitation - Make sure the disease-causing organisms stay out of your growing operation. If you have a disease problem, dispose of the infected material immediately. (Seal it in a plastic bag and put into the trash. Do not compost.)
- Clean Stock Plants - Start with clean material and you will minimize disease problems.
- Consistent Monitoring - Daily, weekly, or monthly. Catch disease problems early and treat where needed.
- Adequate Nutrition - Plants that are receiving adequate nutrition are less likely to suffer from disease. Fertilize regularly.