

Review 4. E7 PLANT DISEASES



A Plant disease or disorder is a harmful change in the growth or function of a plant.

Abiotic non-living causes unfavorable growing conditions and poor cultural practices, e.g. temperature extremes, improper fertilization or watering or injury from machines or chemicals.

A plant disease will not develop without a susceptible host, virulent pathogen, and favorable environment, the disease triangle.

Plant pathogens disease causing agents; fungi, bacteria, viruses, phytoplasmas, and nematodes.

Plant disease reduced or abnormal growth or development of a plant caused by plant pathogens.

Plant disorder reduced or abnormal development caused by abiotic, factors such as unfavorable growing conditions, air pollutants, wind, water and temperature.

The Pathogen host range is the group of plants that can be infected.

Fungi are the most common cause of plant diseases. They are in the Fungi plant kingdom of over 300,000 species.

There are more diseases caused by fungi than all other types of pathogens combined.

Fungi grow in filaments and reproduce by spores. Fungi are incapable of producing their own food.

Bacteria single-celled microbes that reproduce by dividing.

Viruses are comprised of genetic material surrounded by a protein coating. Viruses can multiply only in living tissues, a living host.

The first step in properly treating a plant disease or abiotic disorder is to identify the cause.

Most abiotic plant problems are preventable with proper knowledge and good cultural and management practices.

The threshold is the point at which there is economic, aesthetic, or environmental harm.

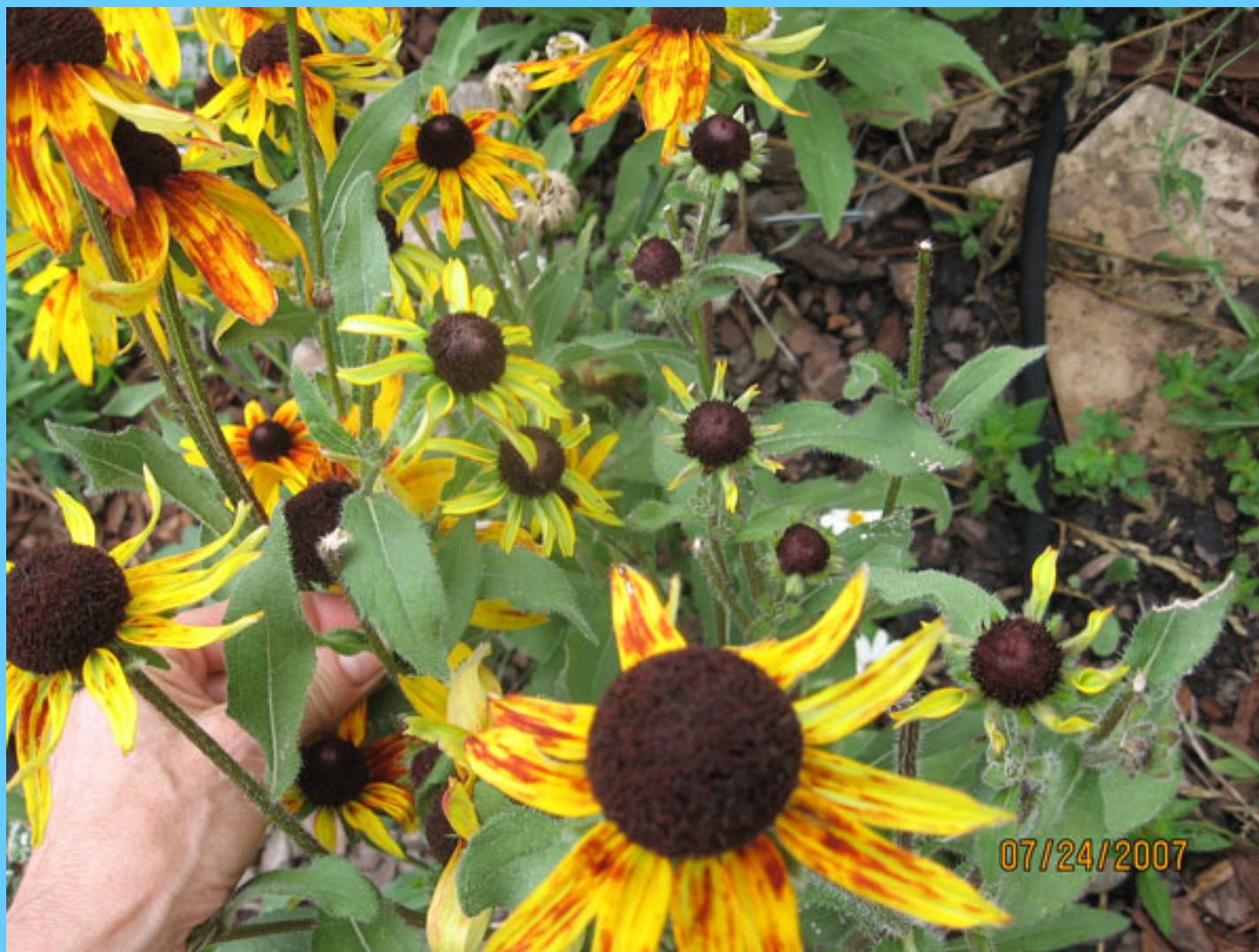
IPM strategies include doing nothing, cultural control and sanitation, biological control, chemical control, and genetic control, the use of resistant varieties.

Resistant varieties have a genetic makeup that enables defense against the pathogen. They will not become infected or will have a lower levels of disease even if the pathogen is present.

Pesticides are applied to a plant to prevent, suppress, or kill a pest or prevent a pest from doing damage.

Most fungicides are preventative and protective but few are curative.

Some pesticides have 'kick back action' that can stop recently formed infections.



Aster yellows phytoplasma



Spirea stunt phytoplasma



Rose mosaic virus



Foliar nematode



Oak anthracnose



Annual powdery mildew



Black spot on rose



Rhizosphaera needle cast



L. Pink snow mold (winter), R. Fusarium patch early fall