



# Diagnosing Plant Problems

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## Know the host plant

Recognize normal growth.

Know what the plant should look like in a given season/time of year.

Different cultivars or hybrids have different characteristics.



## Look for symptoms and signs.

A symptom is a plant's response to a causal agent.

A sign is the physical evidence of the causal agent (fungal fruiting bodies, insects, etc.).

Know plant disease symptoms: chlorosis, necrosis, wilt, lesions, cankers, etc.

Two different causal agents may produce nearly identical symptoms.



## Confirm part of plant affected.

Whole plant; stem; vascular system; root; leaf; fruit; flower

Is the part of the plant exhibiting symptoms where the cause of the problem is located?



## Check for patterns.

*Infectious* diseases and other biotic causal agents such as insects or animals frequently have a random distribution, affecting only one plant species or family. Not all plants will have symptoms. Infectious (biotic) diseases can be caused by fungi, bacteria, viruses, and nematodes.

*Noninfectious* disorders often have a more uniform distribution, affecting many different plant species. Frequently all plants in the problem area have symptoms. Nutrient deficiencies, temperature and moisture extremes, chemicals, etc. can cause noninfectious (abiotic) disorders.

*Host specificity*: Most infectious plant pathogens are host specific (they infect primarily one plant type). Therefore, if the same symptoms are found on maple, redbud, peony, marigolds, roses and tomatoes, the problem is most likely noninfectious.



## Ask questions.

When was it planted?

What is the soil type?

What chemicals or fertilizers have been used (when and at what rates)?

Is the drainage appropriate?

What is the irrigation program?

Are there any area/site problems?

When were the symptoms first noticed?

What have the weather conditions been?

Are the same symptoms visible on neighboring plants?