Developing Diagnostic and Decision Making Skills

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The ability to accurately diagnose a wide range of plant problems can be developed over time by patient observation and consulting on reliable reference materials. Timely diagnosis of plant problems can help you keep your landscape and gardens beautiful and productive. It can also prevent expensive removal and replacement of damaged plants.

HOW TO BEGIN

- Keep an open mind. Do not jump to conclusions.
- Avoid assigning "guilt by association". The insect, animal or disease observed may not be the cause of the problem or the symptoms.
- A "history-taking" of the problem plant is very useful. Extreme weather, site alteration, grade changes, fertilizer, pesticide and herbicide use, cultural practices, etc. all influences a plant's relative health over time. Once mature trees begin to decline, there is often no way to reverse the process. White pines and oaks are common examples of plants which are difficult to rejuvenate after decline symptoms begin.
- Consider all the factors that influence the plant's growth and health. Take the time to look under leaves, and when possible at the roots, for potential causal factors.
- Know what your plant should look like. Knowledge of general growth rates, leaf size and coloration may help alert you to early signs of trouble.
- At least one half of all observed landscape problems are not caused by insects or diseases. Try to eliminate other causal factors first.
- A particular problem may be caused by several factors: soil drainage, extreme weather from previous years, air pollution, pests, diseases, herbicide drift, etc.
- The symptom may indicate a problem in a different part of the plant. For example, leaf yellowing and scorching may be caused by root damage.
- There is a great variation in the expected life-span of landscape plants. All plants go through periods of growth, maturity and decline. Plants grown in urban conditions generally have shorter lives.
- Many pests and diseases are plant-specific. Symptoms affecting more than one plant species may indicate cultural and environmental problems.
- There is no substitute for "hands on" training, particularly with an experienced individual.

Examining the Plant

- Look at the area surrounding the problem plant. Consider factors such as: exposure to elements, proximity to roads or buildings, lighting conditions, drainage, etc.
- Look for physical evidence of a problem: injury, changes in site conditions, soil compaction, construction injury, lawnmower injury, insects, diseases, etc.

- Examine all parts of the plant closely and carefully; including roots, shoots, trunk and leaf undersides (use a hand lens if necessary). Look for a pattern to the injury.
- Physical evidence of a pest includes: the pest itself, shed skins, droppings or frass, webbing, honeydew, sooty mold, pitch, gummosis, galls, slime trails, etc. Evidence of diseases includes: mushrooms, fungal growths, galls, white, orange or black powdery substances, leaf spots, water-soaked areas, cankers, discolored stem and root tissue.
- Identify the pest, disease or problem. This is critical to making a control decision. Identification of the plant is also critical to control decisions. Some plants can tolerate more damage than others.