

Yard and Garden – 08-10-2013- Ted Griess / Extension Horticulture Assistant

Diagnosis is the process used for problem identification. Time and time again I am asked the question, “What is wrong with my plant?” Often, the individual asking expects an immediate answer from me. My response to their question is usually asking a series of my own questions. Although such a response may seem a bit rude to the individual, I am following a procedure that is often called the Socratic Method — named after the Greek philosopher Socrates. The goal of such a method is to create discussion between the two of us, whereby stimulating critical thinking and hopefully leading to a proper diagnosis.

Diagnosing plant problems is not an easy task. There can be many different causes for a given symptom and not all are related. Sadly, and all too often, the symptom of an ailing plant appears the same, no matter what the cause. I often jokingly but seriously say, “Dead grass, dead trees, dead flowers or dead shrubs, no matter what the cause, look pretty much the same — brown and dead.” I need to know more.

Through the years, I’ve discovered two major factors cause plant damage. They are either living factors or non-living factors. Living factors include pests (insects, rodents, rabbits, deer, and humans). Other living factors are pathogens (fungi, bacteria, virus and nematodes).

Nonliving factors include mechanical damage, environmental damage (e.g., temperature, light, moisture, oxygen, lightning, wind) and chemical damage (e.g., fertilizer or pesticides).

Most living factors create certain symptoms. For example, if the problem was caused by an insect, the pattern of damage may reveal ragged edges, missing leaves, or rolled leaves. The stems may reveal holes. Sucking insects feed on the plant fluids; thus the leaves may show stippling or stunted growth. Fungal and viral pathogens often cause round leaf spots, stem rots, concentric rings, discolorations or wilt.

Nonliving factors create certain tell-tale symptoms of their own. Damage to the base of a tree trunk is often caused mechanically by weed trimmers or mower damage. Excessive heat usually causes scorch on the tips of leaves, but leaf burn can also occur from improperly applied chemicals. The fact is any two of the above factors can interact thus exacerbating the problem. For example, a drought over a prolonged period of time stresses and weakens plants making them more susceptible to pests and diseases.

In all cases, asking a number of the right questions often leads to the correct answer.

I usually want to know about the history of the plant. For example, I might ask, “How long has the plant been in its current location?” If the ailing plant was a recent transplant, it may not have had enough time to become fully established and is not capable of handling the assortment of threats Mother Nature can dish out. To me, an established plant is one that has fully acclimated to above and below ground environmental conditions.

I might also ask, “What was recently done to the plant or near the plant? Finding out if any construction, spraying or fertilizing has taken place is important. Knowing about anything that was done in the year or years prior in the vicinity of the plant before symptoms appeared can

help with my diagnosis. Also, inquiring as to what weather conditions the plant experienced helps me.

Lastly, after I've exhausted my questioning and still can't come up with a valid answer, I rely on the experts at our UNL Plant Diagnostic center in Lincoln. There, trained environmentalists, entomologists and plant pathologists examine the specimen. Not only do they arrive at the cause, but they make recommendations on how to rectify the problem.

The next time you ask me what's wrong with a plant, be prepared for a barrage of questions. The fact is diagnosing plant problems is not a simple task.