

EMGV CRIBSHEET #1: KEY QUESTIONS TO ASK WHEN DEALING WITH TREE OR SHRUB PROBLEMS**1. How long has this plant been in the landscape?**

Trees and shrubs often decline due to stresses associated with transplanting, usually within the first year. Site conditions, excessive size when transplanted, and improper season of transplant can all exacerbate the stress. It's also helpful to compare affected plants with healthy plants of the same age, to see if they've grown equally well.

2. When did the problem begin?

Certain factors like vascular pathogens cause rapid yellowing, wilting or decline of trees and shrubs. Others, such as nematodes, cause symptoms to appear slowly over time. Be aware that the homeowner may not have noticed the problem in its early stages.

3. Are any other specimens of this kind of plant affected?

When all individuals are affected at more or less the same time, an abiotic (nonliving) stressor is often to blame. If some individuals are unaffected, ask whether there are any differences (age, site, cultivar, etc.) between those and the plants showing symptoms.

4. Are any other kinds of plants in the area showing similar symptoms?

When multiple species are affected in a short period of time, it can be an indication that the fundamental problem is a cultural or environmental condition rather than an infectious disease caused by a pathogen. The latter tend to be more specialized in the kinds of plants they affect.

5. What does the base of the tree/shrub look like?

Examination of the base from all sides allows you to see whether the plant was set too shallow, or planted/mulched too deep. You can also look for girdling roots, bark splitting (evidence of disease or old cold injury), sap or resin exudation, loose bark, and fruiting bodies of decay fungi, as well as sawdust, exit holes or other signs of insect activity.

6. What do the roots look like?

Compared to healthy roots, are they contorted, bent, or broken? Are there any signs of chewing, for example by voles? Do they look dark, wet, and rotted? Since roots vary widely among plant species, it helps to be familiar with what's normal for a given kind of plant.

7. Was any pruning done on this tree/shrub?

Previous pruning may indicate that there were more branches affected than are evident at the moment. Pruning can also introduce some pathogens, as well as encourage insects and other arthropods to feed at the prune sites.

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8. Has there been any digging, construction, or other root disturbance in the area?

Physical injuries to roots and lower stems can inhibit the flow of nutrients and water to the plant. They can also be entry points for decay fungi or wetwood bacteria.

9. Were any fertilizers, pesticides, or other chemicals used in the area?

Some chemicals applied against certain pests, weeds and pathogens can cause damage to non-target hosts. Excess fertilizer can cause “soluble salt” damage.

10. Where is the plant situated in the landscape?

Is a sun-loving species being shaded by buildings or by overstory trees? Is a shade-loving species getting too much sun? Is the plant competing with roots from adjacent trees or shrubs? Low areas may get too much water, while plants on burms may not get enough water.

11. Do you see any webbing, sawdust, exit holes, or other indirect evidence of insects or mites?

Although having a specimen is best for identifying a pest insect or arthropod, sometimes the creature is long gone or difficult to isolate. Holes in branches and trunks can indicate a wood-boring insect; in these cases there is also often sawdust or woody frass produced. Spider mites and moth larvae (Lepidoptera) often produce silk where they are active. Shed skins, feces, eggs and egg shells can also indicate an insect or mite pest and can sometimes be identified. Feeding damage may also be characteristic of the type of pest. Defoliation, skeletonization, leaf mining and discoloration are the results of different feeding strategies exhibited by different types of pests.

12. Have there been any unusual weather conditions lately?

Drought and heat stress, flooding, hail, and lightning strikes can damage trees and shrubs. Some problems can go back to the previous winter, with an early or late hard freeze, or an ice storm.

The more information the client can provide, the better will be the diagnosis and recommendations. It is a good practice to take notes as you go along, as these may be useful to anyone to whom you have to refer the sample.