Diagnosing Shrub and Tree Problems

Based on Symptoms Demonstrated on the Plant

Clemson University Extension
Photos and revisions by David Marshall, University of Florida IFAS Extension

Symptoms: Poor foliage color, stunted weak growth, gradual decline.

Possible Problems:

- Planting too deeply. If recently planted, you can replant. If problem has existed for a long time, probably will have to replace the plant and plant properly next time.
- Poor drainage; plants located near down spouts, in low areas, in non-drained planter boxes and in beds over very compacted soil.
- Damage to stem or trunk ● Freeze damage. Bark splitting caused by sudden freeze following periods of mild weather. Symptoms may not show until summer time. ● Mechanical damage. Lawn mower or other equipment can skin or girdle bark from plant. ● Borer damage. Symptoms occur when these insects gain entrance into stem and destroy tissue just under the bark.
- Poor soil preparation - see if the hole was dug wide enough, 2-3 times the width of the rootball. Is the plant mulched properly?
- Soils too acid or too alkaline. Soil test.
- Drought damage - usually occurs on plants in light sandy soils, under overhanging roofs, or in planter boxes. But could occur anywhere. The first season after planting, plants need frequent watering because the root system is limited.
- Nematode damage - microscopic work-like organisms attack root system and interfere with ability of roots to take up water and nutrients. Not a common problem on all plants. But some plants such as boxwoods and gardenias have particular susceptibility.
- Needs proper fertilizer. What's the history of fertilization?
- Competition from trees. Trees and large shrubs often compete with other plants for water, light, and nutrients.
- Pot bound root system. If the plant had been in the nursery pot so long that the roots were circling the inside of the pot, sometimes the plants never grow out of this and stay stunted.

Symptoms: Shrubs die suddenly.

Possible Problems:

- Too much fertilizer. Kills roots and top cannot get needed water. Some people just don't understand that fertilizer is a salt and can burn the roots if piled on.
- Root rots - caused by fungi or bacteria. Mushroom root rot can affect any woody plant. Look for white fungal growth just under the bark on the lower stem.

- Insects such as borers or beetles. Look for holes in the trunk.
- Weedeater or string trimmer damage to the trunk... will be obvious. Much too common!
- Drought. Very common on plants during their first growing season. Water has to be applied to the rootball of new plants very frequently until they are well-rooted. Remember, they were watered daily in the nursery. The soil mix in the rootball was designed to drain well. It doesn't hold water well. Even older plants can die, though, in prolonged drought periods.
- Lawn herbicide or weed-killer damage in the root zone.

Symptoms: Yellowing foliage.

Possible Problems:

- Sucking insects such as aphids, whiteflies, mealybugs, mites, etc. Remember to look at the undersides of the leaves.
- Poorly drained or compacted soil (poorly aerated soil).

Example: Pittosporum in poorly drained soil

- Lack of mulch around the plant.
- Too much fertilizer. Burn the roots and they can't take up the nutrients.
- Inadequate nutrition or fertilizer.
- Soil too acid or too alkaline (do a pH test).
- Nematode damage to roots. Not too common, but a possibility.
- Damage to stem or trunk (look...should be obvious)
- Too small of a planting hole.
- Roots disturbed by cultivation around the plant.
- Construction damage - nearby grading or construction often result in damage to roots or soil filled over roots.
- Plant was pot-bound at time of planting and root system was not able to grow properly.

Symptoms: Leaf drop in spring.

Possible Problems:

- Natural occurrence. Older leaves fall as new leaves develop. Often mistaken as a disease on magnolia, holly, ligustrum, and gardenia. Late every spring, we get a rash of calls about magnolias dropping leaves.

Symptoms: Failure to flower.

Possible Problems:

- Shrubs or trees are too young. Age and a slowdown in growth rate will increase flowering.
- Too much vegetative growth. Heavy feeding, excellent growth conditions.
- Pruned wrong time. Prune spring flowering shrubs after blooming; summer flowering shrubs in fall and winter.
- Too much shade.

Symptoms: Failure to produce berries.

Possible Problems:

- Cold or frost during flowering; kills developing fruit.
- Male plant.
- Improper pruning. Often berries are produced on older growth. If you eliminate too much of this older wood, you will eliminate the berries.

Symptoms: Occasional branches die.

Possible Problems:

- Stem breakage - shrubs such as dwarf yaupon holly and dwarf pittosporum have brittle limbs easily broken by animals or children.
- Diseases such as stem cankers or dieback that enters pruning cuts. Remember that pruning leaves open wounds. If you prune a plant repeatedly, several times a year, especially shearing it, eventually you're likely to get some type of stem dieback. Once you do, you need to be very careful about sterilizing pruning tools after pruning the diseased plant and before pruning healthy growth. Removal of the diseased stems, well back into healthy wood is the solution. However, again, beware that if you cut into the healthy wood after cutting into the diseased wood, and without sterilizing your pruning tool, you're just reintroducing the organism further down the stem.
- Sometimes insects such as twig borers can cause dieback. Look for distinct holes. Common example is dogwood twig borer.

Symptoms: Browning of leaf tips and edges and leaf spotting.

Possible Problems:

- Drought.
- Cold damage. Especially on newer growth after there has been a spring freeze.
- Poor drainage.
- Recent transplant shock.
- Too much fertilizer
- Root diseases.
- Damage on stem or trunk? Should be easy to spot.

Special Notes:

- A shovel is a handy diagnostic tool for checking soil conditions such as compaction, poor drainage, and for checking planting depth or for pot-bound root systems.
- Insect pests, when present, are often obvious... but you need to check the undersides of the leaves, and you often need a hand lens.
- Root diseases are sometimes a problem, but are often secondary to improper planting or using the wrong plant for the site, such as in the case with a poorly drained soil.
- Foliar diseases are not often a cause of significant decline.
- Stem diseases can occasionally be a problem, but usually require a site of initial infection such as pruning cuts or limb breakage. Stem diseases are not normally treatable with a fungicide. Exclusion of the affected plant part is the best way to stop the spread of a stem disease. And be careful not to just spread it with the pruning tools!

Most problems are probably related to using the wrong plant for the site or using improper cultural practices. (Things like planting too deep, planting in too small a hole, not keeping the rootball well watered for the first growing season, mulching too deeply, etc.) Very often the problem is related to planting techniques or inadequate site preparation. Very rarely are diseases the primary problem. Sometimes insect pests are, but with careful inspection, you can usually spot them.