EXTENSION
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The Plant Death Spiral

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"What's wrong with my plant?" "Is it dying?" "Can I save it?"

"My plant died. Why?"

These and many other questions about the health of plants are constantly asked of Extension personnel, nursery workers, horticulturists, neighbors, anyone thought to have an answer.

"What can I do?" "Can I spray something to save it?"

Sometimes, regrettably, the question is, "What should I have done?"

Very seldom is the answer easy. Plants are complex organisms. In Nevada, they seldom live in an "ideal" environment. Plant stress is common: the climate is harsh, and the soils are alkaline, low in organic matter, shallow, often salty, and, as many realize, "nutritionally challenged." Most importantly, the air and soils in Nevada are dry and without irrigation, most landscape and garden plants do not survive.

To complicate matters, plant diseases and insects abound. Plants without stress have natural defenses against many pests; but when stressed, they may succumb to them. Often, mismanagement in the garden creates plant stress; and unknowingly, gardeners cause or accelerate the demise of their plants. Compacting soils during construction, improper watering, topping trees, selecting poorly adapted plants for a site, applying too much or too little fertilizer—the list goes on—contribute to the poor plant health and loss of plants in the landscape. Sometimes the most trivial condition triggers a chain of events that leads to the death of a plant over time. For example, bark damage from a mower or string trimmer allows a disease organism to enter and eventually kill trees.

Dr. Tom Cook, a plantsman with years of experience learning about stress to plants that leads to their death, developed the Death Spiral of Plants. It is presented on the next page. We have added to it from our experience of growing plants in Nevada and answering questions like the ones above. It must be understood that the most obvious disease, insect or physical damage to a plant is not always the principal reason the plant is in trouble. Most often, selecting plants not adapted to the site's poor soil conditions, climate or weather, summer heat or winter cold leads to stress and death. Likewise, over watering, soil compaction, drought or just poor management is commonly the root of the plant's downfall. Insects and pathogens more easily attack a stressed plant: they then weaken it more. Ultimately it may die from the infestation or infection, but the real cause of death occurred earlier when it was damaged or stressed and predisposed to attack by pests.

Look over the Death Spiral of Plants and think about the history of the plants you tend. What can you do to prevent or interrupt the spiral. When a plant is attacked by pests or appears unhealthy, what adjustments may be made to reduce or eliminate the stress that is occurring before it leads to secondary infestations and the death of the plant?

If you are new to Nevada, contact the local office of University Nevada Cooperative Extension for helpful information about successfully growing plants in this high desert. Master Gardeners, professionals, fact sheets, brochures and training are available to meet your gardening needs.

For more information:
Master Gardener Help Line
702-257-5555 or
www.lvmastergardeners@unr.edu
8050 Paradise Road,
Suite 100
Las Vegas, NV 89123-1904

The Plant Death Spiral

Why did my plant die?

All stress factors are not included in this spiral. Do not assume all these are involved in all cases of plant decline and death. One or several may cause decline that leads to death. Also, consider each stress factor, the stage of plant growth, and how long stress has been present. For example, under watering a young tree may damage it immediately and severely, but only moderately stress a large tree, unless it is prolonged for months or years. Not watering at all during a hot period may not stress a plant, but kill it outright. Acute and chronic stresses affect plants often in different ways and may or may not lead to secondary problems that lead to death. It is best to avoid stress completely in the landscape.