HELPFUL THOUGHTS TO CONSIDER WHEN DIAGNOSING PLANT PROBLEMS.

By Dr. Larry W. Barnes
Extension Plant Pathologist & Diagnostician
Texas A&M Plant Disease Diagnostic Laboratory

**Problem:** Evaluate plant and consider where leaf spots are occurring. Usually, leaf spots resulting from fungi or bacteria occur on younger tissue or older tissue, but usually not on both younger and older at the same time.

**Control:** Avoiding foliar wetting and timely application of fungicide or bactericide should help.

**Problem:** Consider time factor when evaluating leaf spots. Most fungal and bacterial leaf spots require several days for their development and leaf spots of different ages are usually obvious, spots that occur overnight may be the result of spray damage or pollution injury.

**Control:** There is no feasible control after these types of spots have occurred.

**Problem:** When the root system fails to function properly in the uptake and translocation of moisture and nutrients to the leaf tissue, marginal leaf burn, progressive development of leaf chlorosis, tip dieback, and wilting are common above ground symptoms. While other causes are possible, when any of these symptoms are evident, always check the root system. A healthy, active, functional, root system should be white (or white when root bark is scraped from its surface), of firm texture, should have no odor or at least no sour odor, and the cortex should not pull off leaving “root strings”.

**Control:** Planting in well-drained areas and avoiding root injury during planting help minimize root rots.

**Problem:** When plants wilt, several causal possibilities exist. Frequently, wilting results simply from lack of water. Under conditions of high light intensity, abundant air movement, and high temperatures, transpirational water loss from leaves can be very high. Excessive fertilization can also be responsible, especially if wilt symptoms occur soon after fertilization.

Root rots or soils that stay saturated with water can both induce plant wilting. Root rots are usually fungal in nature and simply result in the destruction of the ability of a root system to absorb the necessary water to maintain a turgid plant. Poor drainage and excessively wet soil can result in plant wilting because plant roots must have oxygen to respire and absorb water. If the soil pore space stays full of water, insufficient oxygen reaches and roots, respiration decreases, water uptake by roots stops, and plants wilt. Saturated soils also create ideal conditions for fungal root rots to get started.

**Control:** Make sure that drainage is adequate, and that plants are adequately watered. Avoid over fertilization and water to excess at each watering to help dissolve accumulated salts and to leach them from the root zone.