PLANT PROBLEMS: ENVIRONMENTAL
Symptom Patterns and Physiological Causes (Non-Insect and Non-Disease)


★ = Good bets, very likely for our area  
✓ = A good possibility for our area  
χ = Unlikely for our area

A. Leaf edges or tips brown on young plants - recently transplanted to five years old:
1. ★ Improper planting techniques and/or not watered properly - water isn’t reaching root ball, air pockets, plant roots are “pot bound.”
2. ✓ Planted and watered too much - roots drown, no air.
3. ✓ Planted too deep - roots suffocate.
4. χ Planted in clay soil - poor internal soil drainage, roots drown/suffocate.
5. Planted in compacted soil - roots fail to expand and grow into the soil at the site.
6. ✓ Plastic twine or wire girdling stem or trunk.
7. χ Planted near drain spout - excess water in root zone.
8. Excess fertilizer near plant roots - roots killed or dried out.
9. Grade change near existing roots - soil removed or filled around plant damaging roots.
10. ★ Insufficient roots in root ball - size of root system on plant too small to take up sufficient water for plant.
11. ★ Solid plastic sheeting or other container material covering root ball - restrict growth and interfere with water movement to the roots.
12. Toxic chemicals used near plant and absorbed by roots - (herbicide, salt, etc.)
13. ★ Winter injury to trunk or branches.
14. ★ Gas leak in vicinity - roots damaged (toxic or drying action to soil)
15. Winter use of salt and de-icing chemicals damage roots and/or foliage.
16. Winter injury from fluctuating temperatures.
17. ★ High winds at elevated temperatures on new succulent spring growth.
18. Vandalism (physical damage, chemical damage)
19. ★ Late spring frost - brown new growth.
20. Air pollution.

B. Leaf edges or tips are brown on established plants - over five years in site.
2. ★ Inadequate irrigation.
3. ★ Improper - frequent shallow watering.
4. ✓ Existing root system paved over - damaging roots - heat, low oxygen, drying.
5. ★ Heat reflection from walls or paved surfaces - resulting in excessive water loss.
6. Grade change over existing roots - soil fill or soil removal - damaging roots.
7. Construction work and root damage (physical injury, soil compaction).
8. ★ Late spring frost - brown new growth.
9. χ Gas leak - especially older established areas.
10. Unusual weather conditions affecting soil moisture levels.
11. ★ High winds at high temperatures on new tender spring growth.
12. χ Lowered water table due to the construction of buildings or home wells.
13. χ Lightning damage (stem or trunk damage often visible).
14. Improper use of toxic chemicals (pesticides)
15. De-icing salt injury.
16. Mechanical injury to trunk or roots.
17. √ Old age decline (possible site condition induced).
18. Air pollution.
20. χ Electrical injury (other than lightning).
22. √ Damage to stems and trunks.

C. Leaf or leaf edges show chlorosis or yellow color.
   1. √ Micro-nutrient deficiency - iron or manganese.
   2. √ Winter injury to root and trunk tissues.
   3. ★ Improper soil pH for the crop. (Many local soils are very high pH -above 8.0)
   4. ★ Excessive irrigation - soil saturated for long periods.
   5. √ Over fertilization or salt damage (root injury).
   6. Poorly drained soil - root injury and limited uptake.
   7. √ Damaged stem or trunk.
   8. Poor soil preparation.
   10. Toxic chemicals (root injury and limited uptake)
   11. Air pollution.

D. Poor leaf color and size, weak, reduced growth, gradual dieback of branches.
   1. √ Poor soil preparation.
   2. ★ Excessive irrigation - soil saturated for long periods.
   3. Winter injury to root and trunk tissues.
   4. Poor soil drainage.
   5. ★ Poor planting practice - too deep, too shallow, limited water, over fertilization.
   7. √ Damage to stem or trunk.
   10. √ Restricted roots (not enough growing room)
   11. Toxic gases.
   12. Toxic chemicals.
   13. Air pollution.

E. Plants dying suddenly.
   1. Over fertilization.
   2. √ Girdling twine or wire around trunk.
   3. Poor drainage.
   4. ★ Severe drought damage.
   5. Toxic gases.
   6. Toxic chemicals.
   7. ★ Excess soil water during high temperatures.
F. Plant fails to flower or fruit.
   1. ✓ Plant too young.
   2. ✓ Frost or cold injury to flower buds.
   3. ✓ Poor or improper pruning practices - removed flowering wood or buds.
   4. ✓ Male plant - no fruit possible - supplies pollen only - female plant needed for fruit.
   5. ✓ Excessive vegetative growth.

G. Loss of fruit or berries before maturity.
   1. ✓ Drought damage - stems or fruit dried out.
   2. Bird damage.
   3. ✓ Low temperature injury - improper fruit development.

H. Excess flowering or fruiting.
   1. ✓ Root damage.
   2. ✓ Restricted stem.