

## Appendix G

### Diagnosing Plant Problems

This information was adapted from the “Arizona Master Gardener Diagnostic Key,” written by Dr. Deborah J. Young, Extension Director, Yavapai County, Arizona. Check with your local County Cooperative Extension office for information on local plant problems and their control.

Symptoms	Possible Causes	Controls
Seedlings don't emerge	<input type="checkbox"/> Dry soil <input type="checkbox"/> Seeds washed away <input type="checkbox"/> Birds ate them <input type="checkbox"/> Incorrect planting depth <input type="checkbox"/> Slow germination due to weather <input type="checkbox"/> Damping off (fungal disease)	<input checked="" type="checkbox"/> Supply water <input checked="" type="checkbox"/> Don't overwater <input checked="" type="checkbox"/> Cover seed bed <input checked="" type="checkbox"/> Plant 2–3 times deeper than seed size <input checked="" type="checkbox"/> Check planting calendars <input checked="" type="checkbox"/> Don't overwater; use seeds treated with fungicide; start seeds in sterile potting mix and clean pots
Seedlings wilt; fall over	<input type="checkbox"/> Dry soil <input type="checkbox"/> Damping off (fungal disease)	<input checked="" type="checkbox"/> Supply water <input checked="" type="checkbox"/> Same as above
Seedlings chewed; leaves shredded or stripped	<input type="checkbox"/> Slugs <input type="checkbox"/> Various insects <input type="checkbox"/> Rodents, rabbits, birds	<input checked="" type="checkbox"/> Use IPM methods <input checked="" type="checkbox"/> Use IPM methods <input checked="" type="checkbox"/> Fence garden; cover seedlings
Newer leaves yellow; veins remain green	<input type="checkbox"/> Iron deficiency or plant roots unable to absorb iron	<input checked="" type="checkbox"/> Add iron sulfate or iron chelate to soil

Symptoms	Possible Causes	Controls
General leaf yellowing	<input type="checkbox"/> Nitrogen deficiency <input type="checkbox"/> Insufficient light	✓ Add nitrogen fertilizer; add organic matter ✓ Thin plants; transplant to better location
Wilted plants; bottom leaves may yellow	<input type="checkbox"/> Dry soil <input type="checkbox"/> Root rot  <input type="checkbox"/> Vascular wilt (fungal disease) <input type="checkbox"/> Root knot nematode  <input type="checkbox"/> Water-logged soil	✓ Supply water ✓ Don't overwater; remove old plant debris; rotate crops ✓ Plant resistant varieties; rotate crops ✓ Rotate crops; add high level of organic matter; soil solarization ✓ Improve drainage
Plants grow slowly; leaves light green	<input type="checkbox"/> Insufficient light <input type="checkbox"/> Cool weather <input type="checkbox"/> Improper pH <input type="checkbox"/> Excess water  <input type="checkbox"/> Insufficient nitrogen	✓ Thin plants; don't plant in shade ✓ Check planting calendar ✓ Amend soil ✓ Don't overwater; improve drainage ✓ Add nitrogen fertilizer
Leaves with yellow-green mottle pattern; may be puckered and plants stunted	<input type="checkbox"/> Virus disease	✓ Plant resistant varieties; weed control; remove affected plants and debris; there is no cure
Leaves stippled with tiny white spots	<input type="checkbox"/> Spider mites <input type="checkbox"/> Air pollution (ozone)	✓ Use IPM techniques
White powdery growth on leaf surfaces	<input type="checkbox"/> Powdery mildew (fungal disease)	✓ Improve air circulation; increase sunlight until temperatures exceed 90 degrees; use sulfur dust



Symptoms	Possible Causes	Controls
Leaf margins turn brown and shrivel	<input type="checkbox"/> Dry soil <input type="checkbox"/> Fertilizer or salt burn  <input type="checkbox"/> Potassium deficiency <input type="checkbox"/> Cold injury	<input checked="" type="checkbox"/> Supply water <input checked="" type="checkbox"/> Soil test for soluble salts; don't overapply fertilizer; apply gypsum and flush soil with water <input checked="" type="checkbox"/> Amend soil as needed <input checked="" type="checkbox"/> Protect from frost
Discrete brown spots; some may grow and merge with others	<input type="checkbox"/> Fungal or bacterial leaf spot disease <input type="checkbox"/> Chemical injury	<input checked="" type="checkbox"/> Submit sample for diagnosis <input checked="" type="checkbox"/> Contact custodian about pesticide/herbicide use that may have "drifted"
Leaves curled, puckered or distorted	<input type="checkbox"/> Herbicide injury  <input type="checkbox"/> Virus disease  <input type="checkbox"/> Aphids	<input checked="" type="checkbox"/> Contact custodian about lawn herbicides that may have drifted; apply on calm days only <input checked="" type="checkbox"/> Plant resistant varieties; weed control; remove affected plants and debris <input checked="" type="checkbox"/> Use IPM techniques
Transplants wilt	<input type="checkbox"/> Shock due to root damage or drying  <input type="checkbox"/> Shock due to temperature extremes	<input checked="" type="checkbox"/> Trim top growth on larger plants to compensate for root loss <input checked="" type="checkbox"/> Provide shade <input checked="" type="checkbox"/> Plant in late afternoon
Poor fruit yield; small fruit; poor taste	<input type="checkbox"/> Uneven moisture <input type="checkbox"/> Poor soil fertility	<input checked="" type="checkbox"/> Supply water during dry periods <input checked="" type="checkbox"/> Amend soil as needed
Large, sunken watersoaked spot on blossom end of fruit; spot turns black; mold may grow	<input type="checkbox"/> Blossom end rot, due to calcium deficiency	<input checked="" type="checkbox"/> Developing fruits receive uneven moisture; supply water during dry periods; mulch <input checked="" type="checkbox"/> Apply gypsum