

(revision date:4/30/2013)

## ***Common Cultural: Winter injury***

*Use Integrated Pest Management (IPM) for successful plant problem management.*

### ***Biology***

Winter injury includes a myriad of plant damage and symptoms, including death of stems and buds, frozen roots, sunscald and windscald of leaves and bark, bark splitting, leaf droop and roll, and limb breakage. During the day, south and southwest sides of trunks are warmed by winter sun. Cambium and phloem cells deacclimate and are then subject to injury by cold temperatures when the sun goes down resulting in a 'frost canker'. Leaf and stem tissues can be damaged when warm weather in early winter suddenly turns very cold. Extended mild winter temperatures followed by an extreme cold spell in the spring also can predispose normally hardy plants to cold injury.

### ***Management Options***

#### **Non-Chemical Management**

- ~ Do not fertilize, prune, or water heavily late in the season. This can encourage late-season growth that may not acclimate well in the fall.
- ~ Prune out only dead and severely damaged wood; prune back to live, green, healthy wood; prune to a bud, stem, or trunk.
- ~ Water properly throughout the spring, summer, and fall. Check soil moisture for evergreens and plants under eaves, and water when necessary.
- ~ Apply loose organic mulch over the root zone to maintain soil moisture and give protection from cold temperatures.
- ~ On damaged fruit trees, remove as much developing fruit as possible. This allows the tree to recuperate rather than produce fruit.
- ~ Select plants hardy for the local climate and soil conditions, especially native plants.
- ~ Place evergreens in areas that minimize their exposure to sun and wind. If this is not possible, provide shading or a windbreak during the winter months.
- ~ Wrap trunks of recently transplanted trees with a white or light-color bark-wrap in the fall, especially younger trees or ones with dark bark.

***Select non-chemical management options as your first choice!***

#### **Chemical Management**

***IMPORTANT: Visit Home and Garden Fact Sheets for more information on using pesticides***

None recommended

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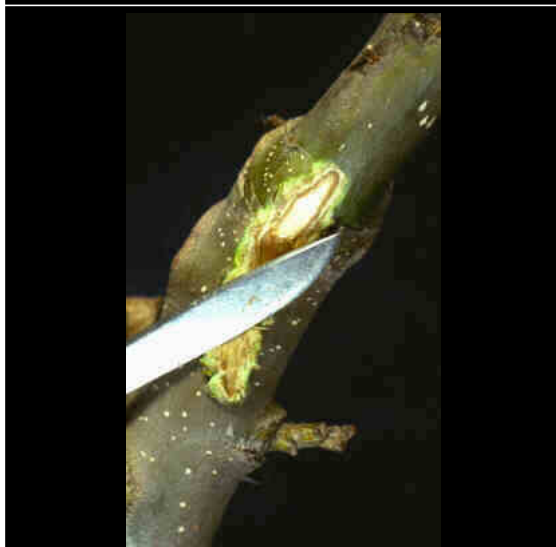
*Images*



~ Caption: Winter damage on apple  
~ Photo by: R.S. Byther



~ Caption: Winter damage on apple  
~ Photo by: R.S. Byther



~ Caption: Winter damage on apple  
~ Photo by: R.S. Byther



*~ Caption: Cold damage on camellia  
~ Photo by: R.S. Byther*



*~ Caption: Flower bud damage on rhododendron  
~ Photo by: R.S. Byther*



*~ Caption: Winter damage on rhododendron  
~ Photo by: R.S. Byther*



~ Caption: Winter injury on photinia  
~ Photo by: R. Maleike



~ Caption: Winter injury on English/cherry laurel  
~ Photo by: R. Maleike



~ Caption: Winter injury on Asian pear  
~ Photo by: R.S. Byther



~ Caption: Winter injury on pine  
~ Photo by: R.S. Byther