

Protecting Trees in Winter

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In the past, severely cold weather has caused tree damage leading to split bark, and, in some cases, bacterial canker infections. Protecting trees from this type of damage should begin in the fall.

A copper spray at leaf drop may help to reduce the incidence of bacterial canker in young trees by protecting leaf scars that provide entrance for the pathogen. However, Dr. Bob Spotts, of the Mid-Columbia Agricultural Research and Extension Center doesn't believe that leaf scars are a major site of infection. In addition, Spotts has found copper resistance to be very common among *Pseudomonas* isolates in the Mid-Columbia. For these reasons, Spotts believes the value of copper is questionable.

However, other control techniques may promise more success against bacterial canker and other injury associated with hard winters. *Pseudomonas*, the pathogen responsible for bacterial canker, needs free water for infection to take place. Pruning in the rain or just before a rain may increase the incidence of the disease in your orchard. Keep your eye on the weather; you may want to stop pruning if rain is predicted within 48 hours.

Protecting trees from winter injury and bacterial canker may be as easy as applying or re-applying dilute latex paint to the trunks of young trees. A malady called "southwest injury" occurs when bark is damaged on cold, clear winter days. As the sun reflects off of the snow, unpainted bark will absorb heat warming the surface to temperatures above freezing. At sun set, bark temperatures drop rapidly below freezing causing ice crystals to form within cells and subsequently splitting the bark. These wounds are perfect entry points for *Pseudomonas*. It was this type of damage that we saw following the winter of 1990 - 1991. Bark split, allowing entry to the pathogen. In one orchard, nearly 50% of the trees became infected with bacterial canker with the loss of many trees.

In some cases split bark will occur despite your best effort to protect your trees. If left unattended bark will peel back from the trunk in early spring further damaging and weakening the tree. It is advisable to go out immediately following a freeze and tack down the bark on both sides of the wound with galvanized roofing nails. This will help to keep the outer layers of wood alive, prevent rotting, and promote more rapid recovery of the trees.