



ORCHARD FACTS



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Bill Krueger

Farm Advisor

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Precautions For Using Potassium Chloride for Correction of Potassium Deficiency

Prunes, almonds and walnuts often require potassium (K) application for correcting deficiency in Glenn County. Of the three, prunes are the most commonly treated. Potassium can be corrected by soil or foliar application. Soil applications are applied in the fall to allow winter rains to move the K into the rootzone. Either "mass doses" of 1500 to 2000 lbs. of material applied at three to five year intervals or annual "maintenance" rates of 300 to 500 lbs. are used. If correction of a deficiency is expected the year following the treatment, then the higher rates should be used. Two forms of K are commonly applied, potassium sulfate and potassium chloride (KCl). Of the two, KCl is considerably less expensive, about half the cost. However, KCl, if the chloride is not adequately leached from the root zone before growth begins, it can burn the trees.

Following are some precautions to consider if you are using KCl for K deficiency.

1. Do not use KCl on soil with clay pans for high water tables which will not allow adequate leaching of the cl from the rootzone. I have observed cl injury to almonds at the end of an irrigation run in a hardpan area where only 500 lbs. per acre had been applied.
2. Be sure that adequate water, either as rainfall or irrigation, follows the application prior to bud break in the spring. In soils with good drainage, 20 inches would be adequate. Potassium chloride injury is always more common following dry winters.
3. Almonds, because they are on peach rootstock, are slightly more susceptible to chloride injury than are prunes on plum rootstock. However, I have seen injury on both.
4. Lower maintenance rates are safer than mass dose rates.
5. If you have applied KCl, you should include a chlorine analysis in your annual leaf analysis to be sure that chloride levels are not getting too high.

Strategies for Reducing Prune Blower

As a result of serious blower problems experienced in this area during 1995, many prune growers with young trees have resorted to heavier pruning to reduce the risk of trees blowing over. While losing trees to wind or having to put trees back up is certainly something to be avoided, the effect of heavy pruning on early production is well documented and can delay the onset of heavy production by 2 years or more. There are ways to reduce or predict the risk of blower which would allow pruning to be adjusted accordingly. Following are some suggestions:

1. Use a seedling rootstock such as Myrobalan seedling. Seedling rootstocks have a tap root and are generally better anchored than clonally propagated rootstocks.
2. Plant rootstock deeper. Because plum rootstocks are comparatively resistant to crown and root rot, on well drained soils, they can be planted relatively deep (with the crown 6 to 12 inches below the ground), or a ridge can be thrown up after planting to achieve the same effect. Because French prune is less resistant to crown and root rot than the plum rootstocks, do not cover the graft union with soil.
3. Prevent Crown Gall. Treat trees with Galtrol or Norbac prior to planting. Crown Gall may provide an entry site for wood decay organisms which will weaken trees.
4. Defoliate and/or prune trees early. This will reduce the "sail" effect.
5. Avoid:
 - a. Heading trees too high. Trees with primary branches starting at 36 inches or higher can create a lot of leverage under windy conditions.
 - b. Hedgerows planted perpendicular to the prevailing winds.
 - c. Planting on high berms (greater than 6 inches) will increase wind exposure.

Effect of Pyrethroids Dormant Sprays on Predator Mites

In a study conducted in Hamilton City, almond trees sprayed during the dormant season with label rates of Asana or Ambush still had biologically active levels one year after treatment (residues were still detectable on twigs and predator mites placed on them had increased mortality and reduced egg laying). The treatments are shown in the table:

Timing	Treatment
Dormant 1 year prior to sampling	Asana Ambush
Dormant 1 year prior to sampling and hullsplit	Asana Ambush
Dormant 1 day before sampling	Asana Ambush Diazinon
Untreated control	

Residue levels from trees sprayed both dormant and at hullsplit the season prior to the sampling were not significantly higher than the dormant sprayed the prior season. Trees dormant sprayed with diazinon and then sampled one day later showed slight predator mite mortality (approximately 15%). This was lower than all of the Asana and Ambush treatments which ranged from 24 to 38% for the Asana and 19 and 42 % for the Ambush. In associated laboratory studies, increased mortality and decreased egg laying was shown for leaf levels of Asana and Ambush equivalent to .125 label rates. Despite these results, no problematic spider mite levels were detected on any of the treatments during the two years of the study. Nevertheless, these results indicate that these pyrethroids have potential for long term negative effect on predaceous mites on bark where they overwinter and disperse, and short term negative effects from residues on leaves.

Branch Wilt of Walnuts

Branch wilt is generally more severe following hot summers.

Symptoms include yellowing and withering of the small outmost leaves during July and August, then leaves on larger infected limbs suddenly wither, turn brown and dry up. These leaves will remain on the tree after healthy leaves drop in the fall. Eventually the thin outer bark of diseased limbs will peel away exposing a black sooty mass of fungal spores. Diseased limbs will have a dark brown discoloration extending into the center of the limb.

Infection can only occur through splits in the bark, most often caused by sunburn. Sunburn, once in the tree, the disease will move into larger limbs and may eventually reach the trunk. The disease is usually more severe in the top, more sun exposed portions of the tree.

Disease management consists of maintaining vigorous trees through good irrigation and nutrition which reduces sunburn and removal of infected limbs. Infected limbs can be easily identified in the fall after healthy leaves have dropped. Cut diseased limbs back to healthy, unstained wood. It is not necessary to disinfect pruning tools between cuts because there is no evidence that this spreads disease.

