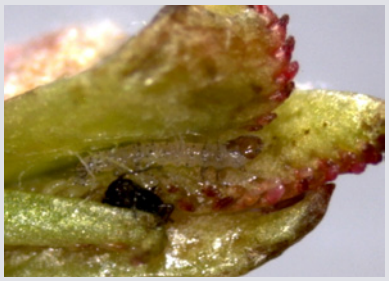
Tree Fruit IPM Advisory

Weekly Orchard Pest Update, Utah State University Extension, **April 18, 2013**

News/What to Watch For:

Aphids (far right) and other insects like leafrollers (right) are active now. If you applied a dormant spray, check the buds and leaves for any insect activity to see if your treatment was effective.

Production information: "Assessing Frost Injury" page 2



Bud Stages

The cooler weather has slowed down bud development. For images of bud stages, **click here** for a pdf fact sheet.

Davis County, Box Elder County, Salt Lake County:
Apples: green tip - half inch green
Apricots: full bloom
Sweet cherries: white bud
Peaches: pink - first bloom
Pears: bud burst
Tart cherries: swollen bud

Cache County:
Apples: silver tip
Tart cherries: swollen bud
Peaches: quarter inch green
Pears: swollen bud

Utah County:
Apples: green tip - half inch green
Apricot: first bloom - full bloom
Sweet cherries: white bud
Peaches: pink
Pears: bud burst - tight cluster
Tart cherries: swollen bud

Weber County:
Apples: green tip
Apricot: bloom
Sweet cherries: white bud
Peaches: pink
Pears: bud burst
Tart cherries: swollen bud

Information on Dormant Sprays

There is still time to apply your dormant spray, depending on the bud stage of your trees.
Follow these guidelines:
Apples: swollen bud - 1/2" green
Pears: swollen bud - cluster bud
Peaches/Nectarines: swollen bud - pre-bloom
Apricot: before bloom
See the April 5 edition for more information.

The Buzz on Copper Sprays

Copper is primarily used on apple trees to help control fire blight. There has been recent research that shows that copper applied at green tip stage is very helpful in managing this disease. Copper may also be helpful for bacterial canker on sweet cherries, a disease we saw a bit of in 2010 and 2011 due to the wet springs.

Most copper products used in the last few decades are "fixed coppers," and include basic copper sulfate (Cuprofix Ultra Disperss, Basic Copper Sulfate), copper oxide (Nordox), copper hydroxide (Kocide, Champ), and copper oxychloride sulfate (C-O-C-S). These coppers form a suspension in water, and when sprayed on a plant, the copper particles dry to the surface, providing residual protection against the growth of pathogens without harming the plant tissue.

Copper sprays at apple budbreak should be applied at the upper end of the labeled rates. The lower ends of the recommended rates are for applications made at green tip or half-inch green. Fixed copper applied too late and at too high a rate can cause fruit russetting. Copper can have negative impacts on soil-dwelling organisms, so use lower rates where possible.

Several new copper formulations are "solubilized" rather than fixed, such as Master-Cop, MagnaBon, Phyton 27AG, and Previsto (pending registration). They contain copper sulfate pentahydrate and are more soluble in water. The label may claim "systemic activity" because the higher solubility allows for more uptake into plant tissue. Previsto and Phyton have shown excellent efficacy against fire blight, and can be used season long. We will discuss more about fire blight control in the next issue.

Production Information

Assessing Frost or Winter Injury

In the early hours of April 18, temperatures in northern Utah dropped to 19 to 27°F in fruit growing regions. In some areas, this will probably mean damage to flower buds, in particulur to peach, apricot, and possibly sweet cherry. The extent of the damage will depend on the temperature reached, and the current bud stage (click here for bud stage images).

If **apricots** are in full bloom, then 10% of flowers will be killed at temperatures reaching 27°F, and 90% will be killed at 22°F.

If **sweet cherries** are in the bud burst - white bud stages, then 10% of flowers will be killed in the 25 to 27°F temperature range.

Peaches will probably be most affected by the frost. Buds in the quarter-inch green to pink stages at 23 to 25°F will result in a 10% kill. Keep in mind, however, that peaches need to be thinned heavily, anyway, so a 10% loss should not affect yield.

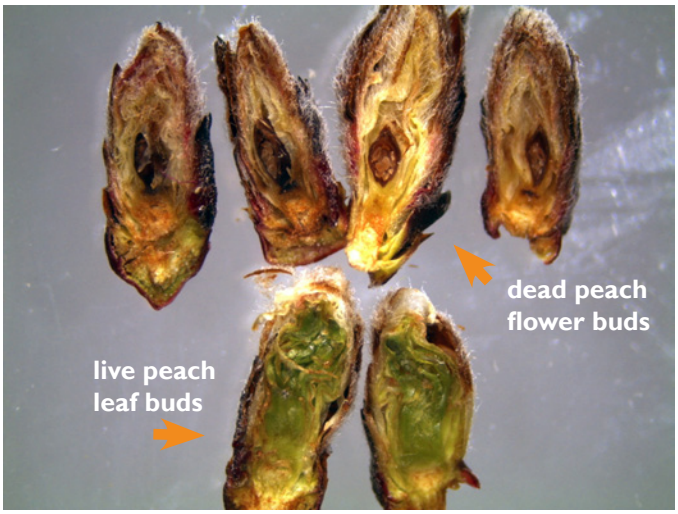
The table below shows some low temperatures recorded by the Utah Climate Center weather stations located in orchards in northern Utah, as well as the coldest temperature recorded there in winter 2013 (January):

Location	Low on 4/18	Coldest Temp 2013
Alpine	24	-7
American Fork	27	-4
Genola	27	-8
Kaysville	23	-8
Orem	26	-7
Payson	26	-7
Perry	27	-9
River Heights	22	-14
Santaquin	25	-7
West Mountain	27	-12

The low temperatures that occurred in January have caused some bud damage. Extremely low temperatures during the winter may damage fruit buds and prevent fruit from setting. Peach trees are very vulnerable to cold weather during winter: peach buds can be killed by midwinter temperatures of -10°F.

Sometimes a freeze will damage only a part of the flower or leaves, and the developing tissue becomes deformed. Buds occurring lower in the tree canopy are more susceptible to damage or death than those higher up.

To determine if buds have been damaged on your trees, wait until the temperatures have warmed significantly. Dead tissue will eventually turn black or brown. Split the flower or bud down the middle and look for brown or black plant tissue within the floral cup. Healthy tissue is greenish or creamy yellow in color.



For more information on assessing winter injury, see Chapter 11 in the Intermountain Tree Fruit Production Guide.

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