



Vol. 1 Issue 3
April 3, 2013

Tree Fruit News

TREE FRUIT SPECIALISTS' CONTACT INFORMATION

Kevin Iungerman
50 West High Street
Ballston Spa, NY 12020
Phone: 518-885-8995
Cell: 518-744-0720
kai3@cornell.edu

Mike Fargione
P.O. Box 727
Highland, NY 12528
Phone: 845-691-7117
Cell: 845-399-2028
mjf22@cornell.edu

Regional Updates*:

North Country—Clinton, Essex, northern Warren and Washington counties

Tree phenology: Apple—dormant

Current growing degree days 1/1/13 to 4/2/13	Base 43 ⁰ F*	Base 50 ⁰ F*
Chazy	31.4	2.9
South Hero, VT	25.2	1.4
Burlington, VT	38.0	6.2
Shoreham, VT	27.3	2.4

Pest focus—none

Capital District—Albany, Fulton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, southern Warren and Washington counties

Tree phenology: Apple, pear, peach, cherry, plum, apricot—dormant

Current growing degree days 1/1/13 to 4/2/13	Base 43 ⁰ F*	Base 50 ⁰ F*
Granville	36.4	7.9
North Easton	44.6	8.3
Clifton Park	27.2	2.0
Guilderland	37.8	4.7

Pest focus—bacterial spot and peach leaf curl on peach & nectarine; bacterial canker on apricot and cherry, pear psylla adult activity

Mid-Hudson Valley—Columbia, Dutchess, Greene, Orange, Sullivan and Ulster counties

Tree phenology: Apple=dormant to silver tip; pear, peach, cherry, plum, apricot=swollen bud

Highland, Ulster County predicted apple green tip date — April 13-14

Current growing degree days 1/1/13 to 4/2/13	Base 43 ⁰ F*	Base 50 ⁰ F*
Hudson	43.5	6.8
Highland	59.6	13.5
Marlboro	56.1	9.2
Montgomery	53.6	9.2

Pest focus—bacterial spot and peach leaf curl on peach & nectarine; bacterial canker on apricot and cherry, pear psylla adult activity

Coming Events

Coming Events: Range (normal ± std deviation)	Base 43 ⁰ F*	Base 50 ⁰ F*
McIntosh silver tip	60—110	18—42
McIntosh green tip	95—147	36—62
Pear psylla adults active	31—91	8—34
Pear psylla egg-laying	40—126	11—53

*All degree day data presented are BE (Baskerville-Emin) calculations. Previous 2013 newsletter editions reported standard degree day data and not BE.

Prioritizing Your Time as Weather and Calendar Agree Spring is Upon Us

By Steve Hoying, Cornell Dept. Horticulture

It is beginning to feel that the weather and the calendar are coming into agreement - Spring has arrived. This calls for prioritization! There are many jobs that can be done but really only a few that should be done NOW! Sort through your list and really think about which ones need to be done today, from the standpoint of which will more completely help you make money this season, and perhaps, many more seasons.

Here is a checklist for consideration as you prioritize spring activities. It is by no means exhaustive but it may help you to better organize the multitude of things needing to be done.

- Finish pruning younger blocks paying special attention to scaffold placement and development. Vigorous blocks can be delayed until bloom.
- Finish pushing and burning brush.
- Time to finish refurbishing and calibrating fertilizer spreaders, weed sprayers, speed sprayers. Be sure to record information on EUREGAP forms.
- Are you doing any grafting in 2013? Last call for collecting bud wood. Cut across center of the bud and look for healthy green flower parts (or brown or black sick parts). Bring in some stone fruit twigs (esp. peach and sweet cherry) for forcing to judge winter injury; simply place in water in a warm area and check for viable stamen and pistils when flowers open.
- Review the Cornell Guidelines, other literature, labels, and new materials' labels; meet with your

advisors or Chemical distributors to plan pest and crop management.

- Acquire and reinstall weather-monitoring equipment including max/min thermometers, rain and wind gauges, or automated weather stations.
- Check on your nursery orders, including tree numbers, tree quality, and delivery dates.
- Finish preparing new planting sites – consider drainage needs, check soil analyses for lime and fertilizer needs, and establish berms for stone fruit planting sites.
- Review your planting systems choice and planting plans. Reconsider your planting densities since an average of 1000 trees/acre are shown to be the most profitable for fresh plantings.
- Plant trees ASAP if you can!
- Order posts, stakes and other supplies for summer installation of support systems.
- Plan early spring lime applications for established plantings where necessary and if possible.
- Use any standing water to check drainage needs for future planting sites.
- Review last year's fertilizer records by block and last year's leaf analysis to correlate growth and vigor response. Use this information to guide fertilizer orders and application rates.
- Finish off last year's cost of production figures to guide this year's expenditures (*see next article*).



Systems Trial pruning demonstration, April 19, 2010. Photo: K Iungerman CCE ENYCH.

NOW is the Time to Also Review Grade-outs and Returns on the 2012 Crop!

By A. De Marree, CCE Lake Ontario Fruit Program.

Growers have so many things to remember and fret about in the course of growing, harvesting, marketing and managing a fruit crop, that it is no wonder memory overload occurs on a regular basis, and faulty memories too! (Accept it; your memory is NOT as accurate as you think it is.)

So before the 2013 crop season begins in earnest, now would be a good idea to examine and organize information from your packout statements in a manner suited to your style so that the results can help you to make intelligent decisions this year. I find that a spreadsheet is very useful for summarizing packouts by variety, and for calculating an average revenue return for each variety, and this allows you to compare returns on the basis of lot, block or pick date (1st, 2nd, 3rd).

You can easily design your own spreadsheet should you choose or you can check out the Eastern NY Commercial Horticulture Program's interim website at the following web address for a template you can adapt to summarize the packout statements for your farm: [http://hudsonvf.cce.cornell.edu/resources/Tree%20Fruit/reports%20and%20publications/DeMarree%202013%20NPV%20Tall%20Spndl%20Gala%20\\$10.xlsx](http://hudsonvf.cce.cornell.edu/resources/Tree%20Fruit/reports%20and%20publications/DeMarree%202013%20NPV%20Tall%20Spndl%20Gala%20$10.xlsx).

Whichever approach you take, here are some suggested items that ought to be included for comparison purposes:

- Return per bushel or per twenty bu. bin by varietal pick date or by 1st, 2nd or 3rd pick.
- Note pack date which indicates amount of time stored, or market conditions when sold.
- Note how each lot packed out; % counts, bags, culls, fresh slices.
- Ask your packer to state reasons for culls (size, specific defects; bitterpit, bruise, color).

When you begin studying your packouts on a regular basis, you generate useful information that can help you set realistic goals for improving your overall packout returns by production block or by variety. For instance, wouldn't it be great to have some hard numbers as you consider improvements, versus impressions?



Photo: K. Iungerman, CCE ENYCH

Your data can guide you on:

- Removing low returning or obsolete varieties.
- Securing more pickers earlier to pick fruit in a more-timely manner.
- Determining which blocks need to be marketed in the fall as tree ripe fruit.
- Diverting some blocks to fresh slice or process market designations at harvest.
- Improving fruit size through multiple chemical thinning applications, earlier hand thinning or installing trickle irrigation.
- Improving management of pickers to reduce bruising and the number of defects placed in the bin during harvest.
- Improving fruit size through pruning techniques and / or fruit spur extinction.
- Changing to planting systems with narrower canopies.

There are many ways to increase your operation's profitability but few are as low cost or so readily obtainable as better knowing your baseline performance - what it is that you have been doing! You need to begin somewhere. Your packout information is an excellent place to start if you care to look.

Copper Spray Product Considerations For Deciduous Tree Fruits

By Dave Rosenberger, Cornell Dept. Plant Pathology.
 Edited by K. Iungerman, CCE NENYCH

Copper fungicide/bactericide sprays have been very useful for managing several diseases in tree fruits, including fire blight, peach leaf curl, bacterial spot on peaches and nectarines, and bacterial canker on cherries and apricots. In apples, a fixed copper spray at green tip for fire blight suppression also provides protection against apple scab equivalent to that of mancozeb at 3 lb/A. Some evidence also suggests that this green tip copper application may help suppress DMI-resistant apple scab; work remains to be done to substantiate this claim.

Spring Bordeaux sprays containing copper and applied with fish oil were evaluated in the 1930's and they sometimes suppressed the apple scab ascospore maturity cycle in overwintering leaves but the results were too erratic to be useful, and urea use became the focus for apple scab sanitation practices. And today, even though copper sprays will protect green tissue from infection when applied before spores are released, copper is no longer presumed to provide reliable suppression of scab ascospores.

Many different copper products are registered and it is difficult to know which product to select for a given application. In making a choice of copper product, it is useful to keep in mind a few key issues underlying copper's functional effectiveness.

In the past, copper products applied to tree fruits at or near bud-break were almost all "fixed coppers" that had low water solubility. When mixed with water in a sprayer, such products' spray solutions are actually a suspension of copper particles rather than a true solution; these particles persist on plant surfaces after drying and ions are gradually released from these relatively insoluble copper deposits with each subsequent wetting. The gradual release of copper ions not only provides residual protection against plant pathogens but it functionally reduces the risks of phytotoxicity to plant tissues.

Fixed coppers include basic copper sulfate (e.g., Cuprofix Ultra Disperss, Basic Copper Sulfate), copper oxide (e.g., Nordox), copper hydroxide (e.g., Kocide, Champ), copper oxychloride sulfate (e.g., COCS), and copper ions linked to fatty acids or other organic molecules (e.g., Cueva). It is important to note that basic copper sulfate behaves differently than the non-basic form of copper sulfate, also known as copper sulfate pentahydrate or bluestone. Chemically, the addition of

hydroxyl ions changes copper sulfate into a relatively non-soluble fixed copper. (The traditional Bordeaux mix, a mixture of copper sulfate plus lime, underwent a chemical change in the spray tank as the hydroxyl ions from the lime would complex with the copper sulfate to form a fixed copper.)

Several physical factors influence the efficacy of fixed coppers: the amount of elemental copper applied, and the fineness of the ground copper. Particle size is very important; a spherical particle of 2.8 microns diameter (common in older formulations) contains 64 times more volume than a 0.7 microns diameter sphere. Logically, it follows that 0.7-micron particle size copper products have 64 times more copper particles distribution and adherence to treated plant tissue than a 2.8-micron particle size product of comparable application (i.e. Both products adjusted to generate the same rate of metallic Cu/A.)

Physical factors of wind or rainfall can remove larger copper particles from leaf surfaces after applications have dried. In sum then, both better coverage and better residual activity is achieved using finely ground copper and a gradual reduction of labeled rates for actual amounts of copper applied per acre in new products have resulted. Because copper can accumulate in soils to levels detrimental to plant growth, earthworms and other organisms, the reduction of copper amounts in each spray has been environmentally beneficial so long as spray efficacy can be maintained.

Despite all the refinements of formulation, an end-point will come where the amount of elemental copper applied in bud-break sprays will no longer provide enough residual activity to suppress fire blight and bacterial canker. Unfortunately, that low-rate end-point remains undefined for tree fruit, and in practice, both the product used and post-application weather will add uncertainty. Obviously, copper applied to suppress fire blight is likely to have little impact on disease development if all copper residues are removed by heavy rainfall before trees reach the tight cluster or pink stages of growth.

Recently, a number of newly formulated products have carried labels allowing very low rates of elemental copper in each application; some (MasterCop, MagnaBon, Phyton 27AG) contain copper sulfate pentahydrate rather than a fixed copper, so they are more soluble in water. While some are portrayed as having "systemic activity" the efficacy of these "low-rate" copper products in bud-break sprays is questionable; higher solubility may allow more uptake into plant tissue, but we lack convincing evidence that such low rates in application will provide

(Continued on page 5)

(Continued from page 4)

sufficient residuals to suppress bacterial diseases in deciduous tree fruits.

Most copper labels carry a range of rates for bud-break sprays. Generally, upper end rates are suggested for silver tip or green tip applications on pome fruits, especially if those bud stages occur early and a long, drawn-out timeframe is expected for bud development. Lower end rates are suggested for applications at green tip (or even at half-inch green, in an emergency) if one expects trees to advance rapidly from bud break to bloom. Excessive rates of copper, especially finely ground coppers with good residuals, could prompt russet on some apple cultivars after pink or bloom if copper ions are splash-dispersed to developing fruit tissue.

As noted, Bordeaux mixture is made by mixing copper sulfate and spray lime. There is no published evidence that adding spray lime to fixed copper products, for tree fruit applications will either reduce phytotoxicity or extend the residual activity of the copper. Some sweet

cherry growers though, report achieving better control of bacterial canker if spray lime is added to their copper sprays, even fixed coppers (that theoretically do not need additional lime). In lab evaluations of seven different fixed copper formulations, mixed at rates commonly used for dilute applications, the resultant copper solutions had a pH near 8; adding spray lime at 2 lb/100 gal raised the pH to 11.0–11.5. (The old Bordeaux 8-8-100 formulation for bud-break timing also had a pH near 11, while a Bordeaux mix with 8 lb of copper sulfate and only two lb of spray lime was near 8 pH.) So, it may be that the high pH of both the old 8-8-100 Bordeaux mix and the fixed copper-plus-lime solutions used by some cherry growers can reduce populations of the bacterial canker pathogen in ways that exceed the capabilities of a fixed copper applied alone.

Source: "Considerations For Copper Sprays In Tree Fruits", Update on Pest Management and Crop Development. Dave Rosenberger, Cornell Dept. Plant Pathology SCAFFOLDS Fruit Journal. V22, N1, March 25, 2013.

Guthion / Azinphos-methyl Extension to September 30, 2013 and Other Updates

By Kevin Iungerman, CCE ENYCH

We reported in Issue 2 of Tree Fruit News that the use of Guthion/Azinphos-methyl was prohibited in New York, which was true at the time it went to press. On March 18, 2013, however, the NYS DEC reversed its stance and approved the continued use of azinphos-methyl products in New York State until September 30, 2013.

This use extension in New York is for the product Guthion Solupak (EPA Reg. No. 66222-162) for applications to apples, crabapples, blueberries, cherries, parsley, and pears until September 30, 2013. Growers to check their labels of any product on hand to see that it matches the EPA number, and for specific crop uses and all applicable, rates, restrictions, etc. The Supplemental Label should be available on PIMS site shortly and I will forward a link to it as soon as possible.

Now, several other product information updates:

- Sinbar WDG herbicide is now registered for use by TKI NovaSource and it is still labeled for use at 0.5 lb/acre in newly planted trees after the first soil settling rainfall.
- Alion herbicide was registered by NYS DEC Oct. 5, 2012, for use in pome and stone fruit established at least 3 years at 5 oz/acre. It is a broad-spectrum, long residual

herbicide with no post-emergent activity. Many growers might have applied this last fall.

- Topguard (flutriafol, Cheminova, EPA Reg. No. 67760-75) is a triazole type sterol inhibitor fungicide. It is exceptionally effective against quince rust (overlooked in last issue) as well as for apple powdery mildew and cedar apple rust. Also, its activity against scab on apples is similar to that of Rally. It will not control scab in orchards where DMI-resistant populations have reached economic thresholds (i.e., where Rally and other DMI fungicides are no longer working). As with Rally, Topguard must be mixed with a contact fungicide (captan, mancozeb) for resistance management and to protect fruit against scab infections.

If you do not already have access to the 2013 Cornell Pest Management Guidelines for Commercial Tree Fruit Production, you may order a copy of the Guidelines by going to: <https://psep.cce.cornell.edu/store/Guidelines/Item.aspx?Item=9>) or see and download them from <http://ipmguidelines.org/treefruits/>.

Source: "Product Registration Update". Art Agnello, Cornell Dept. Entomology, Dave Rosenberger, Cornell Dept. Plant Pathology, Debbie Breth, CCE LOFT. SCAFFOLDS Fruit Journal, V22, N 1, March 25.

Cornell Cooperative Extension and the staff assume no liability for the effectiveness of results of any chemicals for pesticide use. No endorsement of any product is made or implied. Every effort has been made to provide correct, complete, and current pesticide recommendations. Nevertheless, changes in pesticide regulations occur constantly and human errors are still possible. These recommendations are not substitutes for pesticide labeling. Please read the label before applying any pesticide. Where trade names are used, no discrimination is intended and no endorsement is implied by Cornell Cooperative Extension. Cornell Cooperative Extension provides equal program and employment opportunities.