

Ohio Fruit ICM News

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Calendar - Newly added in ***Bold***

April 21, Home Winemaking and Grape Production Workshop, OSU Extension Montgomery County Office, 9:30-12:30. Students will learn how to properly grow grapes including site selection and pest management as well as the "A to Z" process of winemaking. Cost is \$30 per person and **Pre-registration is required by April 16th**. For more information or to register contact Tammy Dobbles, Extension Educator, at (937)224-9654 or by email at dobbels.958@osu.edu.

June 20, OPGMA Summer Tour

July 26, Beekeeping Workshop, OSU South Centers, Piketon. 3:00-8:00. More information to follow.

August 9, OSU South Centers Horticulture Field Night.

August 14-15, 2007. NASGA Summer Tour, Niagara Falls Canada and Niagara region of New York.

Comments from the Editor

Hopefully, the rapid return of warm temperatures didn't catch you unprepared. In southern Ohio, growers have been scrambling to get their lime-sulfur spray on the brambles. This is one of the most critical fungicide applications for brambles. In northern Ohio you may have some time still so make sure your sprayers are ready to go. Plasticulture strawberries have been growing rapidly under row cover and we have seen bloom in several fields. At this point it probably isn't worth the management effort to try to save these blooms since the forecast for next week is calling for lows around 25. Tree fruit development is progressing rapidly. We are at tight cluster to pink in most of the ornamental crabapple varieties in our evaluation plot.

I shamelessly borrowed "A Berry Good Question" from PSU Fruit Times and have discussed this with our State Specialists utilizing something similar. They have agreed to send on interesting questions that they receive that they feel would be of interest to all our subscribers so look for this feature occasionally.

We are approaching the deadline for applications for a tree fruit program coordinator so if you know good candidates, encourage them to get their applications in. Finally I want to take this opportunity to welcome Dr. Maurus Brown to the South Centers Horticulture program. He will be joining us this summer with an Extension and research emphasis on grape production and community development.

Straw Removal on Strawberries by Bruce Bordelon, Purdue University (Source: Facts for Fancy Fruit, 07-01)

Studies done in Illinois indicate that proper time to remove straw from matted row strawberries is when the bare-soil temperature at 4 inches averages about 40-43F. This usually coincides with mid to late March in central Indiana. Plants will begin pushing new leaves as the soil temperatures rise steadily through the month, so the straw should be raked off the tops of the beds and into the row middles. Leaving some straw on top of the beds for plants to grow up through provides a clean surface for fruit. Straw should be removed from strawberry beds before the plants grow enough to cause yellowing of foliage. Allowing the leaves to become etiolated (yellowed with long petioles) due to late straw removal can reduce yields by as much as 25%. However, uncovering the plants early may promote early growth and increase chances of frost or freeze injury. The Illinois research found that the difference between early removal and late removal increased first harvest by only 3 days, so there is no real advantage. After the straw is removed the frost protection irrigation equipment should be set up and tested.

Tree Fruit Program Coordinator Needed

The Ohio State University is pleased to post a job opening for a tree fruit program coordinator. This Administrative and Professional position is full-time, located at OARDC, Wooster. Duties include working closely with the Ohio Tree Fruit Industry and Ohio Fruit Team on applied research needs (Ohio's NC-140 rootstock trials, Ohio's

NECC-1009 variety trials, crop load management) and extension programming (information dissemination). Position details are posted at <http://jobs.osu.edu/> and on-line applications are required; the position requisition number is **326571**. Applications will be accepted from 3/9/07- 4/08/07. To build a diverse workforce, Ohio State encourages applications from individuals with disabilities, minorities, veterans, and women. EEO/AA employer.

Southwest Michigan, 2007 Fruit IPM Meetings by Mark Longstroth, Bill Shane, Greg Vlaming (Michigan State University)

The Monday Fruit IPM update meetings will be at Annette and Randy Bjorge's Fruit Acres in Berrien County again this year. The weekly meetings will begin on April 9 and run until July 10. There will be no Monday meetings on Memorial Day, May 28. The meeting will run from 5 to 6:30 PM. Each meeting will be a review of the current fruit pest situation in Berrien County with displays of insects and fruit collected that day from area fruit plantings. Bill Shane, Greg Vlaming and Mark Longstroth will share the results of their scouting and discuss current and upcoming pest events and emergencies. (Each week will change with changing pest complex). The meeting dates are April 9, 16, 23, 30, May 7, 14, 21, June 4, 11, 18, 25, and July 2 and July 10. One RUP credit is available for private pesticide applicators and commercial fruit (1C).

Tree Fruit Field Guide

The Tree Fruit Field Guide to Insect, Mite, and Disease Pests and Natural Enemies of Eastern North America (Agnello, Chouinard, Firlej, Turechek, Vanoosthuyse, and Vincent) is a 238-page handbook of fact sheet-type entries, including color photos, descriptions and actual-size drawings, distribution, damage symptoms and general management recommendations, to help growers identify pest insects, mites, and diseases that cause damage in the orchard, as well as beneficial insects, spiders, and mites that can be found in tree fruit plantings. It includes over 25 pages of diagnostic keys to insect and mite damage and disease symptoms, a glossary and an index/cross-reference to common, scientific, and family names; also, a list of recommended sources for further information, including useful Internet sites. The book is available through NRAES (Natural Resource, Agricultural, and Engineering Service). NRAES Cooperative Extension PO Box 4557 Ithaca, NY 14852-4557 Phone: (607) 255-7654 Fax: (607) 254-8770 E-Mail: NRAES@cornell.edu or through its website: www.nraes.org, for \$32 retail (pub No. NRAES-169). Quantity discounts are available

Southwest Michigan, 2007 Grape IPM Meetings by Mark Longstroth SW Michigan District Fruit Educator Michigan State University

There will be Grape IPM meetings in Van Buren and Berrien Counties again this year. The meetings will be on Thursdays. The meeting dates are April 17 and May 22. The morning meeting will be from 10 AM to noon at the Cronenwett Farm Shop at 70123 28th Street east of Lawton. The afternoon meeting will be at the Berrien County MSU Extension Office at the Southwest Michigan Research & Extension Center. These

meeting are co-sponsored by National Grape Cooperative and MSU Extension and are open to all grape growers. The format for the meetings will be a review of insect and disease control in grapes specific to either early season or late season, focusing on the pests of each season during that meeting. The April 17, 2007 meeting will review prebloom insect and disease control. The May 20 meeting will discuss bloom sprays and late season insects and diseases. Mark Longstroth of MSU Extension and Terry Holloway of National Grape who will share the results of their scouting will host the meetings. Drs. Rufus Isaacs and Annemiek Schilder will be the featured speakers and discuss current and upcoming pest control windows. RUP credits have been applied for private pesticide applicators and commercial fruit (1C).

Organic Disease Control for Apples by David A. Rosenberger, Plant Pathology, Highland (Source: Scaffolds Fruit Newsletter, Vol. 16, #1)

Producing apples organically in northeastern United States is a challenging enterprise that requires great skill and attention to detail. Sulfur, liquid lime-sulfur (LLS), and copper fungicides are the only effective fungicides currently registered for disease control in organic orchards, and these fungicides all have significant limitations compared with most of the conventional fungicides used today. Other products registered for organic disease control on apples have so far proven both less effective and more expensive than sulfur in our eastern climate, where frequent rain events compromise the effectiveness of biocontrols and biorational products.

Copper and sulfur have no curative activity. In that respect, they have the same limitations as captan and mancozeb fungicides. However, copper applied between half-inch green and bloom can cause fruit russetting, and copper applied between petal fall and early July can cause blackened lenticels on fruit. Low rates of copper can be used to control summer diseases from mid-July through September, but only a few formulations are labeled for use during summer. Yellow-skinned apples are more prone to skin discoloration from summer copper sprays than red-skinned apples.

Copper fungicides are being phased out of organic production in Europe, and the future for copper in organic production in the United States is questionable. So long as copper fungicides remain acceptable, they should be used in organic orchards in the first one or two sprays each season to help suppress fire blight and again in late summer sprays to help control summer diseases and fruit rots.

Sulfur is a good protectant, but it is prone to wash-off during rains. Under most conditions, protection from sulfur will be compromised by an inch of rainfall, and it must therefore be applied frequently in wet seasons. The need for frequent re-applications during long rainy periods is one of the reasons that old-timers sometimes applied sulfur as a dust instead of as a spray. Dusting sulfur adhered well to wet leaves and orchards could be covered more quickly between rains with dusters than with sprayers. The best description I have seen for optimizing uses of wettable sulfur, dusting sulfur, and LLS for scab control was published by Burrell (1945). LLS is more effective than wettable sulfur for controlling apple scab and flyspeck, but LLS also causes more fruit russetting and

depresses yield. Two percent LLS provides 48–72 hr of post-infection activity, depending on temperature. If scab lesions begin appearing on leaves, LLS can be applied to suppress sporulation and “burn out” lesions. In handgun trials at the Hudson Valley Lab, LLS provided good control of sooty blotch and flyspeck when applied on a 10-day schedule at 1 qt/100 gal of dilute spray. However a rate of 2qt/100 gal was required to control sooty blotch and flyspeck when sprays were applied on an 18–20 day interval. LLS at 2.5% is also an effective fruit thinner when applied with oil at petal fall and again 5–7 days later. The yield-depressing effects of sulfur and limesulfur sprays are well documented and have major economic implications for organic production systems that require repeated use of these fungicides. Palmiter and Smock (1954) published results of a 5- year study with McIntosh trees subjected to different spray regimes and showed that trees receiving ferbam fungicide sprays throughout the growing season produced 17% more harvestable fruit (based on boxes/tree) than did similar trees that received sulfur sprays. The yield of fruit that met U.S. No. 1 grade standards was 33% higher for ferbam-treated trees than for sulfur-treated trees. More recently, Holb et al. (2003) ran a two-year trial with Jonagold and Boskoop apples in Holland and found that yields in plots receiving conventional fungicides were 33 and 39% higher, respectively, than yields in comparable plots receiving full-season treatments of wettable sulfur or LLS. In addition to the yield loss, the latter two treatments also reduced the percentage of top-grade fruit by 10–15% compared with conventional fungicides. In a non-replicated trial that we conducted at the Hudson Valley Lab last summer, an organic spray program consisting mostly of sulfur, LLS, and Surround (for insect control) reduced yield of 15 cultivars in our test planting by an average of about 50% compared with comparable trees receiving standard fungicides. In all of these tests, yield differences were attributable solely to fungicide effects because all plots received the same fertilizer and herbicide regimes.

Because of the tremendous yield-suppressing effects of sulfur and LLS, organic apple production is likely to be most successful in orchards that are designed and planted with organic production in mind. Attempts to transition old unprofitable blocks of scab-susceptible varieties into organic production “because the apple will be worth more” is an almost certain recipe for disaster. Instead, organic producers should design new orchards with the following issues in mind:

- Use scab-resistant cultivars if possible. Avoid cultivars such as McIntosh, Jerseymac, Ginger Gold, and Silken that are highly sensitive to apple scab. Paulared, Honeycrisp, Red Delicious, and perhaps even Empire are not fully scab-resistant, but scab on these cultivars will be relatively easy to control in organic orchards. Although Honeycrisp is relatively scab-resistant, we do not yet know if organic fungicides can control summer fruit rots on Honeycrisp.
- Avoid cultivars that are prone to fruit russetting. Some of the critically important pesticides approved for organic farming can exacerbate fruit russetting, so russet-prone varieties such as Golden Delicious often have a very rough fruit finish when produced organically.

- Locate organic orchards well away from abandoned orchards, hedgerows, and woodlots that can provide inoculum for apple scab, rust diseases, flyspeck and sooty blotch. Sulfur is not very effective against rust diseases, summer diseases, and summer fruit rots. The summer diseases and summer fruit rots will be easier to control in orchards with good air drainage.

- Use dwarfing rootstocks and a tree spacing that will allow good air movement through the orchard and between trees even when the orchard is mature. Annual pruning can help to keep tree canopies open, but pruning cannot compensate for crowded tree spacing. The following generalized rules may prove useful for managing apple diseases in orchards where sulfur and LLS must be used for scab control and where summer sprays are needed to control flyspeck, sooty blotch, and summer fruit rots:

- Apply materials at recommended rates with adjustments as appropriate for tree row volume.

- For apple scab and fire blight, begin with one or two applications of a copper fungicide.

- For primary scab and rust diseases, apply sulfur (5 lb/100 gal dilute spray) at least weekly beginning after the second copper spray and continuing to mid-June, then use sulfur at 1 lb/100 gal in summer sprays through mid-July. Shorten spray intervals to less than 7 days if spray deposits are weathered by rainfall totaling one inch or more within the week after application. LLS should be applied as an anti-sporulant if primary scab lesions appear on leaves due to coverage failures with wettable sulfur. LLS (2.5%) plus 2% emulsifiable oil can be substituted for sulfur sprays at petal fall and/or first cover if LLS-plus-oil is used to adjust crop load.

Based on research reports from other states along with my own observations, I suspect that disease control during the latter half of summer is best maintained by alternating sprays containing one percent LLS with sprays containing low rates of copper fungicide beginning about 15 July and continuing until early September (or until the PHI listed on product labels). A copper fungicide in late summer is essential for controlling late summer black rot and bitter rot infections, but repeated copper applications may cause too much phytotoxicity.

Options for controlling summer diseases organically requires more research, especially for regions where summer fruit rots are a concern. Considerable research effort is being directed toward organic apple production at various universities. I have no doubt that we now have both the tools required for producing apples organically in the Northeast. However, I'm not yet convinced that anyone can make a profit growing organic apples in our climate due to the yield suppressive effects of sulfur and lime-sulfur and the high costs for pesticides required for insect control.

Literature cited:

Burrell, A. B. 1945. Practical use of our newer knowledge of apple scab control. Proc. 90th Ann. Mtg. N.Y. St. Hortic. Soc. 90:9-16.

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Palmiter, D. H., and Smock, R. M. 1954. Effect of fungicides on McIntosh apple yield and quality: a five-year study under Hudson Valley conditions, 1949-1953. *N.Y.S. Agric. Exp. Sta. Bull.* 767, 40 p.

Pest Development - (Based on Scaffolds Fruit Newsletter, Coming Events (D. Kain & A. Agnello), NYSAES, Geneva)

Growing Degree Day Ranges Base Temp. 50F (Normal +/- Std Dev)	
Pear psylla adults active	0-49
Pear psylla 1st oviposition	1-72
Green fruitworm 1st catch	12-54
McIntosh at silver tip	15-41
McIntosh at green tip	36-62
Green apple aphids present	38-134
Spotted tentiform leafminer 1st catch	39-113
Pear thrips in pear buds	50-98
Rosy apple aphid nymphs present	56-116
Spotted tentiform leafminer 1st oviposition	58-130
Pear psylla 1st egg hatch	60-166

Facts about the Ohio Grape and Wine Industry by Imed Dami, HCS-OARDC (Source: Ohio Grape-Wine Electronic Newsletter, 22 March 2007)

Following my presentation at the Ohio Grape and Wine Conference on Feb 12-13, many requested the slides about the statistics of the Ohio grape and wine industry. I think it is also important for O-GEN subscribers to know our industry by the numbers. So, I have attached a PDF file of those slides. As the adage says “Knowledge is Power!” Here is an excerpt:

- Did you know that Ohio is ranked 8th in the country in grape acreage and production?
- Did you know that 80% of grapes produced in Ohio are processed into juice and just under 20% into wine?
- Did you know that there are more than 90 wineries in Ohio?
- Did you know that Ohioans consume 18 million gallons of wine each year and our wineries produce about 600,000 gallons (less than 4% of market share)?

A Berry Good Question (Source, Penn State University Fruit Times, Vol. 26, #3)

“I’ve got a wet-bulb/dry-bulb thermometer. I know I can use it for calculating relative humidity, but what I really want to know is... What its practical role in frost protection? I’m trying to take the guesswork out of figuring out when to start the irrigation.”

The wet-bulb temperature is very close to what the plant temperature will be once the irrigation has started, and cooling from evaporation has taken place. So, the irrigation should be fully operating when the wet-bulb temperature equals the critical temperature,

i.e, start the irrigation when the wet bulb temperature is just a degree or two above the critical temperature. The process of arriving at the wet-bulb temperature will be slower if the water is turning to ice, by the way, and there will be a spell when the temperature reads too high while the water is freezing and giving off heat. If you're protecting strawberry blossoms that are fully open, it's probably just easiest to turn on the irrigation when the wet-bulb temperature reaches 32 degrees. We frequently recommend looking up starting temperatures from a table of air temperatures, relative humidity and wind speed, or critical temperature and dew point, which I doubt many people do....

NOTE: Disclaimer - This publication may contain pesticide recommendations that are subject to change at any time. These recommendations are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. Due to constantly changing labels and product registrations, some of the recommendations given in this writing may no longer be legal by the time you read them. If any information in these recommendations disagrees with the label, the recommendation must be disregarded. No endorsement is intended for products mentioned, nor is criticism meant for products not mentioned. The author and Ohio State University Extension assume no liability resulting from the use of these recommendations.

Ohio Poison Control Number

(800) 222-1222
TDD # is (614) 228-2272