



UNIVERSITY OF ILLINOIS EXTENSION

College of Agricultural, Consumer, and Environmental Sciences

Illinois Fruit and Vegetable News

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A newsletter for commercial growers of fruit and vegetable crops

"We are what we repeatedly do. Excellence, then, is not an act, but a habit." Aristotle

Address any questions or comments regarding this newsletter to the individual authors listed after each article or to its editor, Rick Weinzierl, 217-244-2126, weinzierl@illinois.edu. The *Illinois Fruit and Vegetable News* is available on the web at: <http://ipm.illinois.edu/ifvn/>. To receive email notification of new postings of this newsletter, call or write Rick Weinzierl at the number or email address above.

If you receive this newsletter by US Mail, this is the final issue for the 2012 subscription year. A subscription form for 2013 is included at the end of this issue. If you have submitted the form and payment for a subscription for US Mail delivery of the printed newsletter in the last few weeks, you need not complete another form ... you will continue to receive the 2013 issues. Email subscriptions will be continued without any need for additional subscription renewal.

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- **Upcoming programs**
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- **Notes from Chris Doll** (weather notes, early fungicides and fertilizer applications, Fruit School summary, and notes from the 1963 International Dwarf Tree Association at Hilltop Nursery)
- **Fruit Production and Pest Management** (superior oil application from green tip through pink)
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Upcoming Programs

Check the Illinois SARE calendar for a full list of programs and links for registration.

<http://illinoissare.org/> and <http://illinoissare.org/calendar.php>

- **2013 Small Farm Webinar Series** – remaining sessions are
March 21, 2013 – Weed Control in Pastures
March 28, 2013 – Crop Budgeting Resources
Register at <https://webs.extension.uiuc.edu/registration/default.cfm?RegistrationID=7543>.
- **Chef / Farmer Mixers ...** No charge, register online at <http://www.surveymonkey.com/s/farmchefmixer>
 - **Urbana** - Monday, March 18, 2013 – Common Ground Food Co-op, 300 S. Broadway, 3-5 p.m.
 - **Bloomington** - Monday, March 25, 2013 – Ensenberger Building 212 N. Center, 3-5 p.m.
 - **Peoria** - Monday, April 8 – Illinois Central College, North Campus, Dogwood Hall, Culinary Arts Dining Room, 5407 N. University, 6-7:30 p.m.

For information, see http://sfc.smallfarmcentral.com/dynamic_content/uploadfiles/101/FarmerChefMixer-Flyer-lores.pdf

- **CSA Farmer's Guide to Accepting SNAP/EBT Payments, March 21, 2013**, 1:00pm – 2:15pm webinar. Free ... advance registration is required at <https://www1.gotomeeting.com/register/155649888>.
- **Good Agricultural Practices (GAPs), April 8, 15, 22, and 29, 2013** ... webinar series, 6:00 – 8:00 p.m. See the Illinois SARE calendar at <http://illinoissare.org/calendar.php>.

- **Southwestern Illinois Twilight Orchard Meetings, April 18 and May 9, 2013**; at Broom Orchard, Carlinville, IL (Macoupin Co.) on April 18 and at Weigel Orchards, Brussels, IL (Calhoun Co.) on May 9. For more information, contact Michelle Berg Vogel, **ANR Program Coordinator**, University of Illinois Extension Calhoun County Office, P O Box 366, Hardin, IL 62047 (<http://extension.illinois.edu>; email: mbergv@illinois.edu or call (618) 653-4687.
- **Illinois Summer Horticulture Day, June 13, 2013** ... the morning program will be at Curtis Orchard in Champaign, IL, followed by an afternoon tour of the University of Illinois Fruit Research Farm in Urbana and Vegetable Crops Research Farm in Champaign. **More details to come, but mark your calendars!**

Regional Observations

In western Illinois, 50-degree temperatures and over 1.5" of rain over the weekend of March 9-10 melted our significant snow cover. This rainfall, accompanied by the melting snow, allowed the first significant runoff since June of 2011. Ponds are now full! Since the first of the year, the Quincy area has received 7.5" of precipitation. While not recharging the subsoil quite yet, we're certainly well ahead of last year at this time. A local beef producer was digging out a pit to bury an animal in January and reported good moisture down to the 4' depth, but dry below that. A few producers have reported that tiles are running at a trickle.

What a difference a year makes. A year ago field work was underway and a few producers got their first corn in the ground on March 16. I don't think we'll even get potatoes in by St. Patrick's Day this year!

Most high tunnel growers have started their early plants by now. These include mostly greens and solanaceous plants. I was recently amazed at the temperature differences noted in a high tunnel. With the outside temperature of 40 degrees, inside the temperature reached 86 degrees. Of course, conditions were ideal for heat buildup in the tunnel – snow 4-5' deep on sides, bright sun and no wind. But still, a 46-degree increase in February was something.

Prepping of high tunnels is ongoing (fertilizing, cleaning up, shaping beds, laying drip and plastic). It's also a good time to get the planting plan in order, what is going where, etc. Sanitation before planting any crop can go a long way to helping reduce diseases: cleaning up and removing any old plant material, laying new plastic, and treating the entire house with a disinfectant (chlorox or green shield for instance) including stakes, etc. will help in reducing disease inoculum.

This is a great time of year for bramble pruning, especially those thorny varieties. I always thought it prudent to prune during "Carhartt" weather – when wearing Carhartts and leather gloves not only provided protection from the thorns but was also necessary to keep you warm. Timing of lime sulfur sprays for anthracnose control should be from now up to 3/4" green tip.

Mike Roegge (217-223-8380; roeggem@illinois.edu)

Notes from Chris Doll

It seems that the changes for many national problems affecting agriculture production are slow in coming. For many, the arrival of spring also seems to be slow in coming, but it will happen, and in the very near future. A quick walk through the Back-40 revealed that some bud swell is visible in apricot and peach, as well as forsythia and rose. The rest of the perennials will follow with some warmer temperatures. An early blooming dandelion was also seen. Official calendar spring is only one week away, and this should mean that extreme cold should be past and spring tasks pursued.

Locally, the winter minimum cold was 7 degrees, which is a positive, and no injury has been seen. Rainfall since January 1 is only slightly above average, but at this time of the year means that the soils are wet enough to prevent any planting for a few days. And depending on the orchard soil and sod, not too muddy to interfere with the timing of the early sprays, like for peach leaf curl in unsprayed blocks, and the dormant application of copper fungicides for fireblight on apples and pears. Fertilizers applied to the bare wet soils could be subject to erosion, but where vegetative cover is present, it would be timely.

2012 gave most of the Midwest an early bloom and harvest season, but my 45-year records for this site show that pink of peach on March 5, 1992 and March 9, 1990 were earlier. But then the season warmed up even more, and the 2012 pink for apples was on March 21, a week earlier than the previous record in 1991. Using the Floral Development chart in the Spray Guide for recording the date of each floral stage helps my record keeping. This chart also lists the potential for the buds and flowers for surviving late season freezes.

Fruit School Notes:

Mike Flamm of Cobden summarized last year with a report of major problems with the Department of Labor on his H2A help. This was on top of the weather problems of heat and drought on the apple and peach crops. He did report on the positive growth of new peach trees from use of a mulch of straw applied shortly after planting, which helped on moisture conservation and weed control.

Wanda Heuser of Summit Sales in Michigan was the guest speaker at two Fruit Schools and gave an update of the fruit tree nursery situation as well as her opinion of apple and peach varieties. Her comments were "that there will be few if any fire sales of nursery stock in the future," and "that nothing will ever be the same." The explanations included the changes in the number of major nurseries and the demand for rootstocks that limit propagation abilities at this time and the costs involved in all aspects of production, storage, and shipping. The latter was emphasized to smaller growers who want less than bundle lots, and numerous varieties. She indicated that the number of peach varieties might be limited, and that apple trees will be pre-ordered 2-4 years in advance to get desirable selections. Major nurseries require virus-indexed scion wood so that interactions with rootstocks will be avoided. And national interest in expansion of sweet cherries has really grown.

Tom Schwartz of Centralia described 2012 as a year in which misery loved company. He was fortunate to escape the freeze damage of late spring, but then had to survive the heat, drought, and hail storms. There were plenty of apples for his cider business and apparently the customer appreciation of the great flavor in his strawberries, peaches, and apples helped offset weather concerns.

Dr. Mosbah Kushad of the University of Illinois summarized the history of drought years in Illinois orchards by listing 1934, 1954, 1988, and 2011 and 2012 plus a few more. The gist of the talk was the need and benefits of irrigation, especially for dwarfed apple plantings and maturing peaches.

An old file dated March 13, 1963 (50 years ago) included the program for the 6th meeting of the International Dwarf Tree Association at Hilltop Orchards in Hartford, Michigan. Program speakers included Bob Carlson, Paul Larsen, Frank Owen, Gordon Yates, Ron Tukey, Henry Miller, Raymond Reiter, and Bill Hess of Quincy, WI. Bill Hess was the talk of the program with his planting of 608 trees per acre. On tour, among other things we saw Dave Friday's planting at 12 x 18 as a modified pillar system, and Everett Wiles planting of Jonathans planted at 20 x 40, and with an average yield of 17 bushels per tree. A forgotten rootstock, MM109, was described at that time as having poor anchorage. (Maybe it's a good thing I did not take many notes so as to be brief.)

Chris Doll

Fruit Production and Pest Management

Superior Oil Applications from Green Tip to Pink

Just a reminder ... With good reason, we often pay lots of attention to new insecticides and miticides that offer great benefits for control of aphids, mites, San Jose scale, codling moth, oriental fruit moth, and other key pests of apples and peaches. Using these new products contributes a lot to protecting trees and fruit from damaging pests, reducing environmental impacts and worker risks, and reducing already low risks of any harmful residues on fruit. That said, some "old" pesticides still fill very important roles. One of those old products is superior oil – also called dormant oil, emulsifiable oil, and a few other terms.

Application of dormant oils prior to bloom – from green tip to pink – is very effective for killing overwintering eggs of European red mite and rosy apple aphid and overwintering immature San Jose scale on limbs and twigs of perennial fruit crops. These oils are emulsifiable – they disperse well in water. When sprays are applied to trees and the water evaporates, a very thin film of oil remains on the limbs and twigs ... and on the eggs and scales of rosy apple aphid, European red mite, and San Jose scale. That film of oil blocks respiratory openings and results in suffocation of the creatures inside the eggs and scales. Application of superior oils prior to bloom is relatively inexpensive, very effective, and has little or no negative impact on natural enemies that help keep various pests in check later in the season. Many of the superior oils labeled for use on fruit trees are OMRI-approved ... they can be used in certified organic production as well as in conventional production systems.

Emulsifiable oils are applied on a “percent-by-volume” basis ... at green tip to half-inch green they should be used at 2% by volume – 2 gallons per 100 gallons of water in the spray tank. Thorough coverage is essential for these applications to be effective ... they suffocate only the eggs or scales that are covered by a thin film of oil after the water evaporates. If oils are used as late as the pink stage, most recommendations call for a lower percentage of oil in the spray mix – ½ to 1 percent by volume – to avoid plant injury. Other insecticides can be added to the spray tank to increase control of rosy apple aphid or San Jose scale (see pages 8-10 of the [2013 Midwest Tree Fruit Spray Guide](#)), but oil alone is very effective. Most references recommend that superior oils not be applied if temperatures are forecast to drop below freezing in the next 48 hours.

Although “summer oils” can be used post-bloom to suppress populations of several pests, applications made after foliage has emerged can damage leaves if Captan or certain other fungicides are used before or with emulsifiable oils.

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Vegetable Production and Pest Management

Seed and Root Maggots

An updated version of my usual spring reminder on these insects ...

Early plantings of several vegetable crops are especially susceptible to damage by seedcorn maggot, cabbage maggot, or onion maggot. All of these species overwinter in the pupal stage, and adults of the first generation emerge in the spring. Flies prefer to lay eggs in fields where organic matter is high (recently incorporated manure or cover crops), and damage is greatest in cold, wet soils where plant growth is slowed.

Seedcorn maggots most commonly feed on the seeds and seedlings of corn, beans, peas, and cucurbits; they also may be found along with onion maggot or cabbage maggot infesting onions and plants in the cabbage family. Flies typically emerge in April and May, and females prefer to lay eggs in fields with abundant decaying organic matter. Peek emergence of flies occurs at 200 degree-days above a base of 39F (with accumulations beginning when ground has thawed); damage to seeds or seedlings is greatest over the 10 days after this peak. Larvae feed on decaying plant material in soils but also tunnel into seeds (and sometimes transplants) and reduce successful germination and stand establishment. Losses to seedcorn maggot can be reduced by incorporating manure or cover crops at least 3 weeks before planting or transplanting, preparing a well-tilled seedbed, and waiting until soil temperatures have warmed so that germination and early plant growth are rapid. Seeds or seed furrows can be treated to kill seedcorn maggot, and effective insecticides include diazinon, Lorsban, Capture LFR, and other products. Registrations differ by crop ... see the [2013 Midwest Vegetable Production Guide for Commercial Growers](#) and product labels for specific products and rates. Neonicotinoids used in seed treatments on cucurbits or in-furrow applications to soil when cucurbits are planted or transplanted are not completely effective for seedcorn maggot control. Where damage results in reduced stands, replanting or resetting transplants can be done 4-5 days later without likelihood of damage to the new seeds or transplants.

First generation cabbage maggot flies also emerge in April or May, and they too prefer to lay eggs in soils with high amounts of organic matter. Peak flight of first generation flies occurs at 300 degree-days (base 43F) after March 1. Larvae tunnel into the roots and stems of cabbage, broccoli, Brussels sprouts, cauliflower, radishes, turnips, and rutabagas. Early cabbage and turnips are especially susceptible to injury. Damage is reduced by delaying planting and by avoiding fields with high amounts of fresh organic matter. Soil application of Capture LFR, Lorsban, or Diazinon

provides effective control of first generation maggots for cabbage, broccoli, Brussels sprouts, and cauliflower, but these insecticides are not labeled for short-season crops such as radishes and turnips. Again, see the [2013 Midwest Vegetable Production Guide for Commercial Growers](#) and product labels for specifics.

The first generation of onion maggot flies emerges in May and lays eggs at the base of plants, where larvae tunnel into underground portions of plants. Subsequent generations in July and August-September also damage onions. Cultural control of onion maggot centers on removing and destroying cull onions and rotating this year's plantings as far as possible from last year's. As onions mature, they are less susceptible to onion maggot infestation unless they are damaged by cultivation equipment. Soil applications of Lorsban can be used to control onion maggot in dry bulb onions, and soil applications of Diazinon may be used to protect green onions or dry bulb onions.



Left: Seedcorn maggot larva and damage (from E.A. Heinrichs et al., *Maize Insect Pests in North America*, at ipmworld.umn.edu/chapters/maize.htm). Right: seedcorn maggot adult flies (photo by Jeff Hahn at www.extension.umn.edu/.../YGLN-June1502.html).



Left: Cabbage maggots on cabbage root. Right: onion maggot injury to green onions. (Photos from University of Minnesota.)

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Pepper Varieties Show Resistance and Tolerance to Phytophthora Fruit Rot

A recent Michigan study reported in *Vegetable Growers News* of January, 2013 (Vol. 47, #1) has good news for pepper producers. Pepper blight causes extensive losses in yield throughout Midwestern production areas. It is favored by warm, wet soils. For some producers, last year's dry conditions were indeed a blessing, since soil moisture was limited to that provided by irrigation. In Michigan field tests, 190 lines of peppers sourced from 41 countries were evaluated for resistance to the soil borne fungus *Phytophthora capsici*, which infects tomato, eggplant, and cucurbit crops. Fruit rot was evaluated 3 to 5 days after inoculation with two isolates of *Phytophthora*. Although none of the evaluated lines was completely resistant (some were resistant to one isolate but not the other), two lines showed great promise. The most resistant lines included a cayenne cultivar from Kenya and another from Mexico. Lines from North America and Europe were the most susceptible, including breeding lines and old cultivars. The resistant cultivars identified in

Michigan and in other universities will provide source material for breeding. For now, multiple pesticide applications during the growing season (both foliar and soil-applied) using proven fungicides provide the most effective management of the disease, coupled with rotations. The identified resistance lines may provide some alternatives to this approach over the long run.

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2013 ILLINOIS FRUIT AND VEGETABLE NEWS

The *Illinois Fruit and Vegetable News*, a newsletter for commercial growers of fruit and vegetable crops, will be published on the web and in print in 2013. University of Illinois Extension specialists and educators, along with experts from other institutions and the private sector, will write 20 issues for the 2013 season. In general, from March through October, the newsletter is published every two weeks; one issue is published each month from November through February. The price for US Mail delivery of the printed “hard copy” is \$23.00 for 20 issues.

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Less seriously ...

A few of these have been included in earlier issues of this newsletter, but all are still good for a smile ...

- Where there's a will, I want to be in it.
- Since light travels faster than sound, some people appear bright until you hear them speak.
- If I agreed with you, we'd both be wrong.
- War does not determine who is right - only who is left.
- They begin the evening news with 'Good evening,' then proceed to tell you why it isn't.
- I thought I wanted a career. Turns out I just wanted paychecks.
- A clear conscience is the sign of a fuzzy memory.
- To be sure of hitting the target, shoot first and call whatever you hit the target.
- Nostalgia isn't what it used to be.
- Going to church doesn't make you a Christian any more than standing in a garage makes you a car.

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