



UNIVERSITY OF ILLINOIS EXTENSION

College of Agricultural, Consumer, and Environmental Sciences

Illinois Fruit and Vegetable News

Vol. 15, No. 3, April 17, 2009

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://www.ipm.illinois.edu/ifvn/index.html>. To receive email notification of new postings of this newsletter, call or write Rick Weinzierl at the number or email address above.

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University of Illinois Extension Specialists in Fruit & Vegetable Production & Pest Management

Upcoming Programs

- **The Illinois Nut Tree Association spring meeting, May 2, 2009, at the Madison County Farm Bureau Building, 900 N. Hillsboro, Edwardsville, IL, with registration beginning at 10:00 a.m.** A representative from Forrest Keening Nurseries will give a presentation on grafting and growing nut trees, and discussions about general culture and varieties will also be held. Lunch is a traditional pot-luck meal with lots of good nut desserts. Everyone is welcome, and I can give more information if needed at edwdollx2@aol.com or 618-656-1605. (*Chris Doll*)
- **2009 Illinois Summer Horticulture Day, June 11, Royal Oak Farm near Harvard, Illinois, beginning at 8:30 a.m.** Three generations of the Bianchini and Norton families operate Royal Oak Farm, a farm & entertainment operation on a beautiful 160-acre setting. Royal Oak grows 24 varieties of apples 12 varieties of peaches. Other products for sale include raspberries, gourds, squash, and pumpkins. The farm also features an entertainment area, market, bakery, and country restaurant that operate from August into November. With a large pavilion, special events include concerts, hay rides, weddings, school tours, etc.

Royal Oak Farm uses three apple tree growing systems, a central leader at 10-12' centers on M7/M111/Mark rootstocks, a vertical axe at 8' centers on M26/Bud9/M9, and a tall spindle at 4' centers on Bud9/M9. The process of converting the vertical axe to tall spindle by inter-planting new Bud9 trees between the 4- to 5-year old trees and re-training the vertical axe to tall spindle is underway. This spring they plan to begin propagating some of their own trees on G11 and G16 rootstocks. All of their new trees are being replanted where old trees once existed, and they are using nematode fighting cover crops in an effort to avoid replant disease. Cover crops have been used in the orchard for 2 years and will be used in advance of pumpkins this spring. Royal Oak Farm has used IPM practices for over 10 years, and in recent years has tried codling moth virus for codling moth control and the use of a weed-badger for in-row weed control.

For more information and/or reservations call Don Naylor, Executive Secretary of the Illinois State Horticultural Society at 309/530-7678 or by email at ilsthortsoc@yahoo.com. To register in advance, mail a check for \$25 per person to: I.S.H.S., 15962 Old Orchard Rd, Bloomington, IL 61705. Advance reservation deadline is the June 9. On-site registration is \$30.

- **2009 Sustainable Agriculture Tours that involve fruits and vegetables:**
 - **June 19, Growing Strawberries, Naturally.** Jed's Farm, Thompsonville
 - **August 13, Creative Community Co-op Farming.** Basu Natural Farms, Pembroke
 - **September 22, Fresh Fruits and Vegetables.** River Front Berry Farm, Martinton (<http://www.riverfrontberryfarm.com>)

A fee of \$20 per person will be charged for each tour, which includes lunch. Registration at least one week in advance is required. For more information on these and other tours, see <https://webs.extension.uiuc.edu/registration/default.cfm?RegistrationID=2845>. To register by phone, contact Donna Cray at 217-241-4644. For more information, contact Deborah Cavanaugh-Grant (217-968-5512; cvnghgrn@illinois.edu).

Regional Updates

In southwestern Illinois, for the most part it has remained wet and cool, and we had a “hold your breath” moment at the end of last month when overnight temperatures dropped just below freezing two nights in a row. Although peach stage ranged from full boom to shuck split, apple from bud burst to tight cluster, cherry from swollen bud to bloom, no significant damage to crop potential has been identified yet. Since then, there have been a few other nights just below freezing, resulting in many peach growers delaying or foregoing bloom thinning.

Spring so far has been running below average in temperature, so bloom periods have been really extended. It's not unusual this year to see a peach tree in full bloom for several weeks or to see an apple branch with multiple blooms in all stages; from pink all the way to petal fall. Scab and fire blight in apples should be on grower's minds now. When a fire blight infection period is predicted, strep sprays need to go on before a rain event, and if that doesn't happen, within 24 hours after the beginning of the rain event. Apogee is an option for reducing twig blight infection, and the initial application to susceptible and vigorous cultivars should be timed for petal fall of king bloom. Remember tree foliage is necessary for good uptake and it takes about 10 days for shoot extension growth to slow. The effect will last 2 to 4 weeks, and subsequent applications should be made when first few shoots show sign of re-growth. A potential negative side effect is a significant increase in fruit set and a corresponding decrease in fruit size, requiring a more aggressive thinning program by increasing thinner rate 5 to 10%. There should be at least a 2- to 4-day interval between application of Apogee and application of chemical thinners.

For traditionally difficult varieties to thin – such as Fuji, Golden Delicious, Lodi, Rome, and Wealthy – plan to thin early (petal fall to 7mm) to allow time for follow-up sprays if necessary. For moderate to heavy thinning of difficult varieties, the first thinning spray could be applied at petal fall using Sevin (1 lb) + spray oil (1 qt) per 100 gallon dilute. Follow that with a combination spray at 7mm-12mm if needed. For moderate thinning, consider Sevin plus NAA or Sevin plus 6BA. For heavy thinning, consider combining Sevin with 6BA and spray oil. A few reminders about NAA ... high rates and later timing increase the risk of pigmy fruit for Delicious, Fuji, and Gala. Do not apply NAA and BA to the same trees of Delicious or Fuji, or excessive formation of pygmy fruit may result. See the **2009 Midwest Tree Fruit Spray Guide for Commercial Growers** at <http://www.extension.iastate.edu/Publications/PM1282.pdf> for additional recommendations, or for a more detailed discussion see the **Pennsylvania Tree Fruit Production Guide** <http://www.extension.iastate.edu/Publications/PM1282.pdf>

On the vegetable production side, some emerged early planted sweet corn was nipped by freezing temperatures, but additional plantings followed soon after. Horseradish harvest is ongoing.

Elizabeth Wahle (618-692-9434; wahle@illinois.edu)

At the Dixon Springs Agricultural Center, nearby growers anxiously await drier field conditions to prepare ground and plant sweet corn. High tunnel and low tunnel tomatoes have been planted and are off and growing. At DSAC, we

have planted tomatoes and are protecting them with hot caps, cage cloches, and a low tunnel. We are looking to see if there is any significant difference in these three “low tech” methods of early production.



Early tomatoes at the Dixon Springs Agricultural Center.

Plasticulture strawberry plants sent for viral analysis at Agdia came back negative, and at this point the crop looks exceptional for much of southern Illinois. These plants have spent a great deal of time under the row covers this spring, as threats of frost have been very common. Growers need to remember to continue to apply nitrogen through the drip system to these plantings.



Plasticulture strawberries at the Dixon Springs Agricultural Center.

Matted row strawberry plantings are beginning to bloom, and there has been some loss to frost on early varieties that are on sites that warm early in the spring. In general, the matted row strawberries also still look like they have great potential for the 2009 season. Blueberry, blackberry, apple, and peach plantings in southern Illinois look good to excellent. The blueberry plantings at DSAC have a surprisingly high bloom count based on the fact that last year was also a bumper crop.

Bronwyn Aly & Jeff Kindhart (618-695-2444; baly@illinois.edu, jkindhar@illinois.edu)

In northern Illinois, day temperatures in the low 40s to mid 50s and night temperatures in the upper 20s to mid 30s have characterized early through mid April. The ground is still wet in most of the region, limiting field operations. Pruning and training of small fruits and tree fruits continues, and most apples were at silver tip to green tip on April 15. Garlic planted last fall and very hardy vegetables such as garden peas that were planted a few weeks ago are doing well. Potatoes, cabbage, broccoli, and onions will be planted as soon as the ground can be worked. Tomato, peppers, and other warm season vegetable seedlings have been started indoors.

Maurice Ogutu (708-352-0109; ogutu@illinois.edu)

Notes from Chris Doll

Cool temperatures and saturated soils tell most of the story in SW Illinois at this time. What began as a fairly early spring and some early bloom of tree fruits has turned into a cool and wet spring, with plant development a little behind "normal." In the last 21 days, there were no 70-degree temperatures, 13 days with minimums in the 30's, three days with maximums in the mid 40's, and 3.7 inches of rain. Most field work is at a standstill.

It is difficult to assess fruit set on plums and early peaches, but lots of flowers have fallen off. A full bloom of Van sweet cherry has had little chance of pollination by bees, and many of the flower's petals have collapsed from continuous wetting. There has been a long, slow development of bloom beginning with peaches, and now also with apples. Some apple varieties are going into petal fall while others have not reached full pink. As of today, pears are in full bloom, and a few strawberry flowers are showing.

There is some winter injury on Kiowa and Prime Jim thorny blackberries and a small percentage of dead canes on Triple Crown thornless. Many of the primocanes of red raspberries had 50-60 percent dieback also.

The rains last week were of sufficient volume and duration to cause growth of cedar galls and most likely the sporulation of apple scab. Due to difficult spraying conditions it is hoped that protective fungicides were on the trees ahead of time, including the antibiotics for fireblight on apples. By the time this is printed, some apple trees may be past prime time for Apogee applications, and others should be able to time it pretty well. See Elizabeth Wahle's discussion of this above and the text on page 13 of the 2009 Midwest Tree Fruit Spray Guide for Commercial Growers (<http://www.extension.iastate.edu/Publications/PM1282.pdf>).

And right behind this spray is the time for petal fall thinners and then the full attack on thinning. Some of the stress of thinning decisions can be minimized if a grower remembers that a big crop of little apples isn't worth very much and is about the same as no crop at all. And following such a worthless crop will follow a low volume crop on biennial bearers. That is two lost crops, and even if over-thinning does occur, only one crop is lost.

Some thoughts on thinning conditions:

- Cloudy skies before and during the thinning period tend to increase chemical activity.
- Temperatures below 60 degrees F at application time greatly reduce activity of NAA.
- Temperatures below 70 degrees F at application time greatly reduce activity of Sevin.
- Temperatures above 90 may result in over-thinning with both NAA and Sevin.
- Amid-Thin works best with slow drying conditions; NAA does the opposite.
- Apply two-thirds of the spray volume to upper one half of the tree.

As soon as the peach set is determined, the rest of the fertilizer can be applied.

Chris Doll

Fruit Production and Pest Management

Winter Injury in Northern Illinois Grapes

The winter of 08-09 will probably be remembered in northern Illinois as a persistently cold one that helped us sort out which grape varieties should be planted here. On January 16 and the following couple of nights, temperatures bottomed out at levels that were colder than the previous 5-10 winters. In northeastern Illinois, most rural sites were below minus 20°F, and some were colder than minus 30°F. Actual temperatures in vineyards may have differed from nearby weather stations in the rolling hills of northwestern Illinois, as cold air settled in low areas.

Fortunately, the vines were conditioned to be in full dormancy by the gradual development of cold temperatures. Dormant plants will respond to slowly lowering temperatures by descending into full dormancy. Each variety has its limitations though. It is not unusual for tender hybrids to be hardier than European grapes but to be injured by temperatures in the -15 to -20°F range. The popular cultivars Chambourcin and Chardonel are examples of such hybrids. Hardier hybrids may be able to withstand much colder temperatures. The varieties coming from Minnesota's breeding program or the private breeder Elmer Swenson of Eau Claire, WI, may be able to withstand temperatures that drop to -35 to -40°F. Even some French hybrids, such as Marechal Foch, can take temperatures colder than -30°F if conditioned properly.

Unfortunately, many vineyards in northern Illinois may not have been conditioned properly last winter. This isn't necessarily due to poor management. Last season was a very challenging season. We were generally low on heat units across northern Illinois because of prevailing cloudy, wet conditions. The frequent rainfall led to high disease pressure. Also, an unusually challenging infestation of Japanese beetles led to vegetative canopies being ravaged. All of this led to low levels of photosynthesis and reduced energy available to the vine for storage into winter. This could have been exacerbated in some vineyards by excessive crop loads, and by the fact that the previous growing season had similar conditions. Being aware of the relative strength of vines and their limitations will be a key to growing grapes in the northern part of Illinois. Brad Taylor of SIU and I are collecting dormant cane material from different vineyards in Illinois to determine the bud survival rates in those varieties. More information on this will come later.



Icy grapevine, January, 2009.



Frontenac grapes in northern IL, January, 2009.

Growers were busily pruning vineyards in late March and early April, and many have now finished, and the process of pruning should reveal winter damage. Many canes hanging from cordons may have a gray, desiccated appearance. They may feel soft and light, and when cutting through while pruning, they will show no green color in the cambium layer just below the thin bark. These are canes that have died back. Some dieback is normal at the tips of canes where wood is thin. Where the wood is pencil-sized in thickness it should survive if the variety's minimum cold tolerance is not exceeded. If canes of good thickness are not showing good green color in the cambium layer, the vine has suffered dieback, either due to excessive cold or lack of energy, or both.

This season may have been a watershed for determining variety suitability in Illinois, particularly in the north. Growers should record the extent of damage they experienced in each variety they grow and assess the reason for the damage. If management led to vines that were in less than optimal condition, then corrective measures should be taken. Vine health is critical to the long-term investment in a vineyard. If management was optimal or at least suitable, and vines had sufficient energy going into the fall, growers should consider the possibility that the variety is not appropriate for their site. There is no area of Illinois where suitable wine grape varieties cannot be grown. However, every area of Illinois can serve as a site for making poor variety choices. Mother Nature will be the judge.

Growers with damaged vines will need to make decisions about the future for those varieties. If the varieties are suitable, the growers will need to rehabilitate vines. Next issue will have some discussion on bringing vines back into optimal health.

Bill Shoemaker (630-584-7254, wshoemak@illinois.edu)

Notes on Tree Fruit Insects

- Comments on rates for Altacor, Rimon, and Delegate in apples ... For those switching to one or more of these compounds for codling moth control in apples, the rates in the Spray Guide can be fairly broad. It may help to know that we have obtained excellent results under moderate to high pest pressure with 3 ounces/acre of Altacor, 20 fluid ounces/acre of Rimon, and 5 ounces/acre of Delegate. At these rates, these compounds are at least somewhat comparable to Assail, another effective alternative to our old O-Ps, in per acre costs.

- Oriental fruit moth flight is underway as far north as Calhoun County, with biofix dates estimated as April 1 near Murphysboro and April 16 near Hardin. More on oriental fruit moth and codling moth catches and the beginning of degree-day summaries in the next issue of this newsletter. **Illinois growers, if you have biofix dates from your traps for oriental fruit moth or codling moth, please send those dates to me.**

(Rick Weinzierl; 217-244-2126; weinzier@uiuc.edu)

Vegetable Production and Pest Management

Vegetable Insect Management

Repeating a note from late April last year (history may not repeat itself, but one can sure hear echoes) ...

Cold weather so far has meant little to write about insect development or problems. Some creatures to be on the lookout for as temps rise and planting and transplanting finally ramp up include seed and root maggots in cool soils, asparagus beetle and cutworms on asparagus spears, Colorado potato beetle on potatoes and other nightshades, and several flea beetle species on a variety of vegetable crops. Background information on these insects is available by “googling” them on the web and in the book *Vegetable Insect Management*, edited by Rick Foster and Brian Flood (Meister Media, Willoughby, OH; <http://www.meisterpro.com/vim/>). Brief sampling and threshold information, along with listings of insecticides registered for the control of these insects, are presented in the *Midwest Vegetable Production Guide*, available on-line at <http://btenv.purdue.edu/Pubs/ID/ID-56/>. Illustrations of a few of the insects mentioned above (and credits to their sources):



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 to right: asparagus beetle adult (Clemson Univ.), larvae, and damage to spear (Jeff Hahn, Univ. of Minnesota; <http://www.extension.umn.edu/distribution/horticulture/M1199.html>).



Left to right: Colorado potato beetle adult (Ric Bessin, Univ. of Kentucky; <http://www.ca.uky.edu/entomology/entfacts/ef304.asp>), eggs (Univ. of Massachusetts; www.umassvegetable.org/soil_crop_pest_mgt/ins...), and larvae (Univ. of Idaho; <http://info.ag.uidaho.edu/keys/plates/plate36.htm>).

(Rick Weinzierl; 217-244-2126; weinzier@uiuc.edu)

Less seriously

From *Practical Orchardring on Rough Lands*, 1911, forwarded by Chris Doll. (And by the way, the things they sprayed in 1911 pretty certainly would not pass EPA muster almost 100 years later in 2009.)

If we have the scale from San Jose, or other pest, be what it may ...
... Let us spray.

While we laze around they're feedin'; while we're swearin' they're a breedin'; plenty poison's what we're needin' ...
... Let us spray.

Lay a stock of Paris Green in; don't forget the kerosenin' ...
... Let us spray.

Into crevices go huntin'; stop the hoppers cheerful jumpin'; what we've got to do is pumpin' ...
... Let us spray.

Pupa, nymphs, and millers; fungi mixed with caterpillars ...
... Let us spray.

Be they plump or thin or flaccid; bring to bear on them the acid ...
... Let us spray.

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