



UNIVERSITY OF ILLINOIS EXTENSION

College of Agricultural, Consumer, and Environmental Sciences

Illinois Fruit and Vegetable News

Vol. 15, No. 2, March 30, 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.

In this issue ...

Upcoming Programs (Farmers' Market Conferences; Sustainable Agriculture Tours)

Regional Updates (from Elizabeth Wahle, Bronwyn Aly, and Jeff Kindhart)

Notes from Chris Doll (crop development; soil nutrient use by last year's crops)

Fruit Production and Pest Management (brown rot of stone fruits; northern Illinois grape industry development)

Vegetable Production and Pest Management (corrections for the 2009 Midwest Vegetable Production Guide; seed treatment for vine crops)

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

Upcoming Programs

- **2009 Illinois Farmers' Market Conferences:** The Illinois Department of Agriculture is offering a series of workshops for market managers and interested vendors to help farmers' markets prepare for the 2009 season. Workshop topics will include: rules and regulations, available resources, and other farmers' market issues. There also will be question and answer time.
 - **Springfield, March 31, 2009, 10 a.m. - 4 p.m.** IDOA Auditorium, Illinois Department of Agriculture State Fairgrounds, 801 East Sangamon Avenue, Springfield, IL 62702
 - **Mt. Vernon, April 7, 2009, 10 a.m. - 4 p.m.** Rolland W. Lewis Building, 800 S. 27th St., Mt. Vernon, IL 62864
 - **DeKalb/Seneca, April 9, 2009, 10 a.m. - 4 p.m.** DeKalb County Farm Bureau Center for Agriculture, 1350 W. Prairie Drive, Sycamore, IL 60178.

Admission, which includes lunch, is \$20 per person, unless attendees pre-register. Pre-registration costs \$15 per person and must be submitted at least two working days prior to the event. Online registration is available by logging onto: www.agr.state.il.us/marketing/reservations.

- 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, perennial crops are running ahead of schedule compared to last year. Peaches are in full bloom, and bloom thinning has started. Apples are silver-tip to green-tip, blueberry scales have separated, bramble primocanes are visible, and floricanes are at bud break. Mulch was pulled on strawberries around the first week of March, and plants are showing significant growth. Grapes are not showing any significant bud swell yet. Field prep is noticeable throughout the region and conditions have been good for pruning crews.

A workshop for commercial grape growers is scheduled for Saturday, April 4, at 10:00 a.m., at the Pittsfield Community Center, Pittsfield, IL. The focus will be early-season pest control, including identification of early-season pests and critical timing for pesticide applications. In addition, changes to the 2009 Midwest Small Fruit and Grape Spray Guide will be covered. Registration fees will be taken at the door starting at 9:30am and will be \$10.00 per person. The program will conclude at 12:00 noon. Pittsfield Community Center is located at 224 West Washington Street. From Springfield, take I-72 west to Exit 35. Take US-54/IL-107 south towards Pittsfield. Follow US-54 as it joins IL-106 and becomes Washington Street. Grape publications will be available for sale at the workshop, including the 2009 Small Fruit & Grape Spray Guide for \$10.00 and The Midwest Grape Production Guide for \$15.00. For more details or if disability accommodations are required, please contact Elizabeth Wahle at (618) 692-9434 or by email at wahle@uiuc.edu.

A twilight meeting has been scheduled for commercial tree fruit growers on April 16th. The meeting will start at 6:00 and will be hosted by Broom Orchard, located 2.3 miles south of Carlinville, IL on the Alton Road/Shipman Road (on the east side of the road). For more information contact Elizabeth Wahle at 618-692-9434 or wahle@uiuc.edu.

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

At the Dixon Springs Agricultural Center, the last two weeks have brought warm weather. Plasticulture strawberries have been uncovered and appear to have had the least winter damage that we have ever seen. Most plants remained completely green, and crown numbers look good for producers in Pope and Union Counties. We have some concern over some atypical foliage that we are seeing. These symptoms might be caused by viral disease(s), and samples have been sent to Agdia, Inc. to determine if virus is present or not. We will provide additional information via this newsletter as we get more information. Matted row strawberries are just beginning to actively grow, while plasticulture berries have started to bloom. Growers are again reminded good gray mold control begins with timely fungicide application as flower petals begin to senesce (die).

Drier weather is anxiously awaited and will undoubtedly bring field activities such as laying mulch; first plantings of sweet corn can't be far away.

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

Notes from Chris Doll

Early growth and flowering such as we have this year usually mean an extended period for worrying about frosts and freezes. Several peach varieties are in full bloom, as are the Japanese plums. Apples range from half-inch green to cluster bud, and development has been steady with moderately warm temperatures. Now that the spraying season for some of the crops is here, the March winds have been blowing and making it difficult to get good coverage. So far, rainfall has been light so that ground conditions are firm and diseases should be at low ebb.

My copy of the Illinois Fruit Calendar was printed in 1987 and was compiled by several great observing pomologists, entomologists and plant pathologists who recognized that the phenological developments of plants are closely related to many phases of insect and pathogen development. For the plant stages that exist near St. Louis at this time, the

Calendar says that red-banded leafroller egg laying is at a peak and fruit-tree leaf rollers are hatching. Aphids are hidden deep in partly opened buds. Spotted tentiform leafminers are also hatching. It is possible that curculio and stinkbug adults are entering the orchard from winter quarters. Fungicides are needed for control of blossom blight caused by brown rot. And, pruning can be continued.

Most fruit plantings should have been fertilized with at least 50 percent of the anticipated needs of the tree and its crop in 2009. Most orchards had a good crop last year, and some old data indicates that a conservative 400-bushel apple crop removed 20 pounds of nitrogen, 7 pounds of phosphorus and 30 pounds of potash per acre, plus some more if the leaves and wood were removed from the orchard. A conservative yield of 250 bushels of peaches per acre removed 30 pounds of nitrogen, 15 pounds of phosphorus and 55 pounds of potash, plus the leaves and wood. The second 50 percent of the nitrogen for peaches can be applied after the crop size is determined after the last freeze.

Chris Doll

Fruit Production and Pest Management

Brown Rot of Stone Fruit

Brown rot of stone fruits, caused by the fungus *Monilinia* spp., occurred in all peach-growing areas in Illinois in 2008. Due to wet conditions in August and September, wide-spread fruit infection was observed in orchards that did not receive effective fungicide applications.



Brown rot occurs worldwide, affecting all stone fruits. The disease causes blossom blight, twig blight, and fruit rot. Typical symptoms in spring are blossom blight and twig blight. On peach, the first symptom of blossom blight is necrosis of the anthers, which proceeds to the floral tube, ovary, and peduncle. As infected flowers wilt and turn brown, they often become affixed to the twig in a gummy mass. In wet weather, infected flowers become covered with grayish to tan fruiting bodies (sporodochia) of the pathogen. Following blossom infection, the pathogen may enter the twig, where it causes canker with massive gum formation in the advancing margin. With time the cankered area girdles the twig and blights the portion distal the cankered area. Leaves in such twigs turn tan to brown and remain attached to the shoots. Usually cankers are restricted to twigs and do not extend into the previous year's wood.

Brown rot also occurs on ripening fruit. Under conducive conditions, decay of ripe peaches may be visible within 48 hours of infection. Green fruit dropped on the orchard floor during thinning may be infected. Immature fruits on the

tree are seldom infected unless they are in contact with disease tissue or injured by frost or insects. Usually infected fruit with brown rot remain attached to the tree.

Monilinia species overwinter on mummies and blighted blossoms and twigs. Spores are produced on infected tissues under cool, wet condition in late winter and early spring. Spores may also be produced on prunings on the orchard floor. Spores can be produced at $\geq 41^{\circ}\text{F}$ and disseminated by wind and rain; they germinate rapidly and infect plant tissues. Wetness of fruit caused by dew or sprinkler irrigation can trigger infection; a single rain shower during fruit maturation can cause heavy fruit losses to brown rot.

For control of brown rot of stone fruit, cultural practices and fungicide sprays are needed. Removal of mummies and pruning infected twigs reduce the inoculum level. Practices that reduce stress of trees through good nutrition or proper soil moisture can increase tolerance to blossom infection. Control of insects that are vectors of the pathogen and avoiding wounding of trees are essential. To reduce post-harvest decay, rapid cooling of fruit delays development of brown rot. Artificial ripening of fruit at high temperature (e.g., 95°F) that are too warm for the growth of pathogen limit the progress of this disease.

Protective fungicidal treatments provide the best control for both blossom blight and fruit rot. The proper use of fungicides with some systemic activity protects flowers and fruit, reduces the amount of sporulation, and reduces sources of overwintering inoculum. Several fungicides are available for control of brown rot, including: thiophanate-methyl (Topsin-M), chlorothalonil (Bravo), iprodione (Rovral), wettable sulfur, ziram, myclobutanil (Rally), propiconazole (Orbit), fenbuconazole (Indar), tebuconazole (Elite), pyraclostrobin + boscalid (Pristine), fenhexamid (Elavate), pyrimethanil (Scala), cyprodinil (Vangard), tebuconazole (Adament), and metconazole (Quash). Fungicide-resistant *Monilinia* species have been reported. To reduce the chance of fungicide resistance development in the pathogen, alternating fungicides with different modes of action is necessary. For additional information of control of brown rot of stone fruit, refer to the *2009 Midwest Tree Fruit Spray Guide* (<http://www.extension.iastate.edu/Publications/PM1282.pdf>).

Mohammad Babadoost (217-333-1523; babadoos@uiuc.edu)

Northern Illinois Grape Industry Development

Perhaps the fastest growing segment of the specialty crop industry in Illinois is the grape industry. While a few acres of table grapes can be found, the vast majority of acreage of grapes in the state, more than 1200 acres, is wine grapes. The development of this industry began in the late 1980's, with rapid growth beginning in the late 1990's. Several surveys of this industry have been conducted, with the most recent in 2007. Reports on those surveys are available from the Illinois Grape Growers and Vintners Association at their website, www.illinoiswine.com.



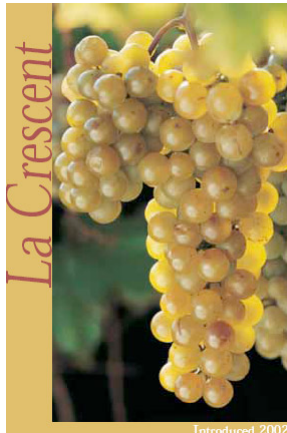
Northern Illinois Winegrowers Experimental Vineyard, Galena

The element that has probably contributed most to the development of this industry in Illinois and all over the Midwest has been the discovery of hardy wine grapes. These grapes have a long history, extending into the 1800's in France and more recently in the United States. These hybrids are the result of crossing European species of wine grapes with North

American species of wild grapes. The French did it to combat an imported pest from North America, phylloxera, to which their grapes had no resistance. Once established, the pest began destroying European vineyards. The French responded with a vigorous program of breeding resistance into their grapes with North American species. Eventually, T.V. Munson, an American viticulturist from Texas, taught them how to graft their European varieties onto American grapes as rootstocks. The enthusiasm for breeding slowly subsided, though it continued into the middle of the twentieth century. Eventually, the French deliberately brought the breeding of hybrid grapes to an end.

By that time, the hybrids had been imported into the United States. At first they were a novelty, but slowly recognition of their value began to creep into the countryside, especially in areas that were too cold for European varieties, the Midwest and Northeast. As enterprising growers and winemakers began to experience success with these hybrids, interest in the varieties began to grow and spread. Eventually it led to all of the states in the colder regions developing significant wine grape industries. That growth seems to be continuing today, despite current economic conditions.

In northern Illinois, wine grapes have been grown commercially since the mid-1990's. This followed success in the southern areas of the state, which led the establishment of wine-grape vineyards. As would be expected in a state as long from north to south as Illinois, varieties differ in suitability. Pest problems vary across Illinois as well. The hotter, more humid conditions of the south lead to somewhat higher disease pressure. The shorter season of the north is a limiting factor for ripening some varieties. Also, winters like the one we just experienced limit our ability to grow more tender varieties. But breeding programs at some land-grant institutions, especially Minnesota, and some private breeding programs have led to new, short-season wine grape varieties with super hardiness and excellent potential for quality wines. Even better, the use of adapted wild grapes as parents has led to very good disease resistance in some new varieties. This overcomes an important challenge for using most French hybrids for wine grapes, disease susceptibility.



La Crescent, an important new hardy hybrid.

Acreage of grapes in Illinois has grown dramatically. In 1997, there were 140 documented acres of grapes in the state, most of which were in the south. By 2000, acreage had grown to 520 acres. Only 31 of those acres were in northern Illinois. Since it is usually the 4th year that allows significant production in a vineyard, most of those acres were not yet productive. By 2007, Illinois had almost 1100 documented acres of grapes, and 270 were planted in the north quarter of the state. Other regions were as follows; central – 169, south central – 296, and south – 348. Indications are that acreage continues to grow in all sectors as winery capacity continues to grow and demand for Illinois wine exceeds supply of Illinois grapes.

Growing grapes is a horticultural discipline similar to growing tree fruits. Permanent wood is managed to produce fruitful wood, which is regularly renewed in a specific training system. Like orchards, vineyards have training systems for optimizing quality, productivity and ease of management. Labor demands are high and pest challenges can be tough. This new industry in Illinois has become a significant element of our specialty crop profile. As this season progresses, look for more reports on issues confronting grape growers.

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

Vegetable Production and Pest Management

Corrections for the 2009 Midwest Vegetable Production Guide

In a recent issue of Purdue University's Vegetable Crops Hotline, Dan Egel of Purdue's Vincennes research station noted the following corrections to the 2009 Midwest Vegetable Production Guide:

- A rate correction should be made to page 75. The correct rate should be 8 fl. oz. of Folicur 3.6F per acre for gummy stem blight of cucurbits.
- On page 86, for use of chlorothalonil (eg. Bravo, Echo, Equus) on pepper for anthracnose, the user must be in possession of the full fungicide label and the supplemental label that specifies pepper.
- On page 90, the product Presidio should be added to the list of products labeled for use on fruiting vegetables at 3-4 fl. oz. per acre. Presidio must be tank mixed with a product of a different mode of action. 2 day PHI.

These corrections have already been made to the on-line version of the *Production Guide*, which can be found at www.btny.purdue.edu/Pubs/ID/ID-56/. Please consult the on-line version for corrections and updates as the season progresses. All corrections will be listed on-line as "Change History" found below the table of contents.

Seed treatment for vine crops

In a recent issue of the Ohio Veg Net newsletter (index at <http://www.ag.ohio-state.edu/~vegnet/news/newslist.htm>), Celeste Welty, Ohio State University Extension Entomologist, authored the following article. Her comments are very similar to those I have offered at winter meetings for vegetable growers, and I'm reprinting them, with credit to Dr. Welty.

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

'FarMore DI400' is the name of a commercial seed treatment package that is now available for use on cucumbers, pumpkins, squash, and melons for disease and insect control. The name 'FarMore Technology' is a registered trademark for several commercial seed treatments. In the name FarMore DI400, the 'D' designates that it is for disease control and the 'I' designates that it is for insect control. FarMore DI400 contains 3 fungicides, which are the active ingredients in Apron, Maxim, and Dynasty, as well as one systemic insecticide, which is thiamethoxam. Thiamethoxam is the active ingredient already familiar to us in Actara, which is used for foliar sprays; in Platinum, which is used in soil treatments; and in Cruiser, which is used in seed treatments on corn and beans.

We have been looking at thiamethoxam and other insecticide seed treatments on cucurbits for cucumber beetle control in Ohio for the past 4 years. We have data on pickling cucumbers, pumpkins, and zucchini. Although the results vary from trial to trial, the seed treatments have generally been performing as well as in-furrow soil treatment with products such as Admire and Furadan. One question that we have tried to answer throughout these trials is: how long does beetle control last after planting treated seeds? Control was evaluated at several crop growth stages, both in field trials and in lab bioassays. Although the results varied from trial to trial, in general, we found that control is usually good through the second leaf stage, which is generally around two to three weeks after seeding, but control is not consistently lasting past the second leaf stage. Control is often poor by the fourth leaf stage, which is generally about three to four weeks after seeding. Keep in mind that beetle control is most important at the cotyledon stage, when plants are most susceptible to bacterial wilt disease, which is vectored by cucumber beetles.

One advantage of seed treatment is convenience of easier application compared to in-furrow or foliar spray applications. There is also an environmental benefit of a lower rate of active ingredient per acre. If we look at thiamethoxam and compare seed treatment which uses 0.75 mg of active ingredient (a.i.) per seed versus in-furrow application of 11 fluid ounces per acre of Platinum, we find that this is about 34 times less a.i. for pumpkins, which are typically seeded at 3000 seeds per acre. This is about 2 times less a.i. for pickling cucumbers, which are typically seeded at 58,000 seeds per acre.

FarMore is available on seed purchased from Rupp Seeds, Seminis, Harris-Moran, and several other selected seed companies as listed on Syngenta's Farm Assist website:

http://www.farmassist.com/prodrender/index2.asp?nav=resources&Prodid=943&sub=seed_companies.

Reprinted from an article by Celeste Welty, Ohio State University, in the March 6, 2009 issue of Veg Net (<http://www.ag.ohio-state.edu/~vegnet/news/currentvn0309.htm>).

Less seriously

'Disorder in the Court' ...

ATTORNEY: This myasthenia gravis, does it affect your memory at all?

WITNESS: Yes.

ATTORNEY: And in what ways does it affect your memory?

WITNESS: I forget.

ATTORNEY: You forget? Can you give us an example of something you forgot?

ATTORNEY: Doctor, isn't it true that when a person dies in his sleep, he doesn't know it until the next morning?

WITNESS: Did you actually pass the bar exam?

ATTORNEY: The youngest son, the twenty-year-old, how old is he?

WITNESS: He's twenty, much like your IQ.

ATTORNEY: She had three children, right?

WITNESS: Yes.

ATTORNEY: How many were boys?

WITNESS: None.

ATTORNEY: Were there any girls?

WITNESS : Your Honor, I think I need a different attorney. Can I get a new attorney?

ATTORNEY: How was your first marriage terminated?

WITNESS: By death.

ATTORNEY: And by whose death was it terminated?

WITNESS: Take a guess.

ATTORNEY: Can you describe the individual?

WITNESS: He was about medium height and had a beard.

ATTORNEY: Was this a male or a female?

WITNESS: Unless the circus was in town I'm going with male.

University of Illinois Extension Specialists in Fruit Production and Pest Management

Extension Educators in Food Crop Horticulture		
Bill Shoemaker, St. Charles Res. Center	630/584-7254	wshoemak@illinois.edu
Maurice Ogutu, Countryside Extension Center	708-352-0109	ogutu@illinois.edu
Elizabeth Wahle, Edwardsville Extension Center	618-692-9434	wahle@illinois.edu
Bronwyn Aly, Dixon Springs Agricultural Center	618-695-2444	baly@illinois.edu
Jeff Kindhart, Dixon Springs Agricultural Center	618-695-2444	jkindhar@illinois.edu
Peter Chege, Quad Cities Extension Center	309-792-2500	pchege@illinois.edu
Extension Educators in IPM		
Suzanne Bissonnette, Champaign Extension Center	217-333-4901	sbisson@illinois.edu
George Czapar, Springfield Extension Center	217-782-6515	gfc@illinois.edu
Doug Jones, Mt. Vernon Extension Center	618-242-9310	jonesd@illinois.edu
Dave Feltes, Quad Cities Extension Center	309-792-2500	dfeltes@illinois.edu
Russell Higgins, Matteson Extension Center	708-720-7520	rahiggin@illinois.edu
Campus-based Specialists		
Mohammad Babadoost, Plant Pathology	217-333-1523	babadoos@illinois.edu
Mosbah Kushad, Fruit & Vegetable Production	217-244-5691	kushad@illinois.edu
John Masiunas, Weed Science	217-244-4469	masiunas@illinois.edu
Chuck Voigt, Vegetable Production (& herbs)	217-333-1969	cevoigt@illinois.edu
Rick Weinzierl, Entomology	217-244-2126	weinzier@illinois.edu

Return Address:

Rick Weinzierl
 Department of Crop Sciences
 University of Illinois
 1102 South Goodwin Ave.
 Urbana, IL 61801

