



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://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

- **2010 Sustainable Agriculture Tours**
 - **September 15, Agritourism – Farm Fresh Fun**, Country Corner, Henry County.
A fee of \$20 per person will be charged for each tour, which includes lunch. This year two adults pay \$30 when registered together and children under the age of 10 attend free. Registration at least one week in advance is required. Visit http://web.extension.illinois.edu/smallfarm/ag_tours.cfm to register and for more details about each of the tours including a map and agenda. To register by phone, contact Donna Cray at 217-241-4644. For more information, contact Deborah Cavanaugh-Grant (217-968-5512; cvnghgrn@illinois.edu).
- **Central Illinois Sustainable Farming Network - Building a Multi-Farm CSA, September 16, 2010**, Living Earth Farm, Farmington, IL. Registration at 12:30 p.m., program 1:00 – 3:00 p.m. Registration fee: \$15.00 (no charge for Central Illinois Sustainable Farming Network members). To register online, visit <https://webs.extension.uiuc.edu/registration/default.cfm?RegistrationID=4011> or contact Deborah Cavanaugh-Grant (217-968-5512; cvnghgrn@illinois.edu).
- **2011 Illinois Specialty Crops Conference. Mark your calendars ... January 5-7, 2011.** Springfield, IL.

Resources: Information and Funding

North Central Region - Sustainable Agriculture Research and Education Program (NCR-SARE) Farmer Rancher Grants: Call for Proposals is now available.

Farmers and ranchers in the North Central Region are invited to submit grant proposals to explore sustainable agriculture solutions to problems on the farm or ranch. Proposals should show how farmers and ranchers plan to use

their own innovative ideas to explore sustainable agriculture options and how they will share project results. Sustainable agriculture is good for the environment, profitable, and socially responsible.

Projects should emphasize research or education/demonstration. Grants can range from \$6,000 for individual farmers up to \$18,000 for groups of 3 or more farmers. NCR-SARE expects to fund about 50 projects in the twelve-state North Central Region with this call. NCR-SARE has funded more than 700 farmer rancher grants worth more than \$4,300,000 since the inception of this program. Interested applicants can find the call for proposals and useful information for completing a proposal at <http://www.sare.org/NCRSARE/cfp.htm>. Proposals are due on Thursday, December 2, 2010, at 4:30 p.m. at the NCR-SARE office in Jefferson City, MO.

Potential applicants with questions can contact Joan Benjamin, Associate Regional Coordinator and Farmer Rancher Grant Program Coordinator, at benjaminj@lincolnu.edu or 573-681-5545 or 800-529-1342 or contact Deborah Cavanaugh-Grant, Illinois SARE Coordinator, cvnghgrn@illinois.edu, 217-968-5512. For information about Illinois SARE funded projects, see <http://web.extension.illinois.edu/smallfarm/sare/>. A hard copy or an emailed copy of the call for proposals is also available by contacting Joan Benjamin. It is crucial to use the most recent call for proposals.

Deborah Cavanaugh-Grant (217-968-5512; cvnghgrn@illinois.edu)

New Weed Identification Book Available

WEEDS OF THE MIDWESTERN UNITED STATES & CENTRAL CANADA, edited by Charles T. Bryson and Michael S. DeFelice. Publication date: July 1, 2010. Flexibind w/ flaps, \$44.95 | ISBN 978-0-8203-3506-3, 440 pp., 1423 color photos, 363 maps.

This weed identification book provides essential information on more than 350 of the most troublesome weedy and invasive plants found in the midwestern United States and central Canada. Drawing on the expertise of more than forty weed scientists and botanists, the guide identifies each plant at various stages of its life cycle and offers useful details about its origin, habitat, morphology, biology, distribution, and toxic properties. The book also includes illustrations of the most common characteristics of plants and terms used to describe them, a key to plant families, a glossary of frequently used terms, a bibliography, and indexes of scientific and common names.

Each species account includes a distribution map and up to four color photographs showing seed, seedling, plant & flower; scientific names, common names, and local synonyms of common names; vegetative characteristics for seedlings and leaves; and notes on special identifying characteristics, reproductive characteristics, and toxic properties. Its coverage includes weeds of Illinois, Indiana, Iowa, northeastern Kansas, northern Kentucky, southern Manitoba, Michigan, Minnesota, northern Missouri, eastern Nebraska, North Dakota, Ohio, southern Ontario, southwestern Quebec, southeastern Saskatchewan, eastern South Dakota, and Wisconsin.

Use the ISBN listed above to special order this book from your local bookstore, or order directly from a book source such as Amazon.com.

(Adapted from a communication by Bill Hutchison, University of Minnesota.)

Cancellation and Phase-out of Endosulfan

On June 9, 2010, the US EPA announced its intention to cancel all uses of endosulfan (brand names include Endosulfan, Thionex, and [previously] Thiodan. At the end of July, EPA published a five-year phase-out schedule based broadly on the impact of the cancellation on various crops and the availability of alternatives. Most current uses will be canceled on July 31, 2012. Crop-specific information can be found at <http://www.epa.gov/pesticides/reregistration/endosulfan/>.

A partial summary of the phase-out calendar includes: (Editor's note ... I'm not sure why groups A and B are separated, but the date on the EPA web site is July 31, 2012 for both groups. RW)

GROUP A: USE ENDS JULY 31, 2012

- Almond, apricot, broccoli, Brussels sprouts, carrots, cauliflower, celery (non-AZ), citrus (non-bearing), collard greens, dry beans, dry peas, eggplant, filbert, kale, kohlrabi, mustard greens, nectarine (CA only), macadamia, plum and prune, poplars grown for pulp and timber, strawberry (annual), sweet potato, tart cherry, turnip, walnut, ornamental trees, shrubs, and herbaceous plants.

GROUP B: USE ENDS JULY 31, 2012

- Cabbage, celery (AZ only), cotton, cucumbers, lettuce, stone fruits not listed in Group A, including nectarine (non-CA), peaches, and sweet cherry, summer melons (cantaloupe, honeydew, watermelon), summer squash, tobacco.

GROUP C: USE ENDS JULY 31, 2013

- Pear

GROUP E: USE ENDS JULY 31, 2015 (Group D pertains only to Florida and is not listed here.)

- Apple, blueberry, peppers, potatoes, pumpkins, sweet corn, tomato, winter squash

GROUP F: USE ENDS JULY 31, 2016

- Livestock ear tags, pineapple, strawberry (perennial/biennial), vegetable crops for seed (alfalfa, broccoli, Brussels sprouts, cabbage, cauliflower, Chinese cabbage, collard greens, kale, kohlrabi, mustard greens, radish, rutabaga, turnip)

The Strategic Agricultural Initiative is designed to facilitate the transition away from the high-risk, high-benefit pesticides, particularly for specialty crops. If you are aware of specific crop and/or pest uses that will need some support along these lines, please contact Seth Dibblee at the phone number and email address below.

(Adapted from a communication by Seth Dibblee, Strategic Agricultural Initiative Coordinator, Pesticides Section, Chemicals Management Branch, U. S. EPA Region 5 – Chicago, 312-886-5992; dibblee.seth@epa.gov)

Regional Updates

In the northern region, highs remained in the 70s to 90s through the end of August, with lows in the 50s to 70s until the first few days of September, when cooler weather arrived. Dry weather prevailed in late August, with only a few areas receiving substantial rainfall. The region as a whole received 0.3 to 2 inches of rain September 1 and 2.

Many pick-your-own orchards are now open to the public. For early-maturing apple varieties such as Red Free, Paula Red, and Prima, picking is done in many orchards, and harvest has shifted to varieties such as Gala, Honeycrisp, Jonamac, Ozark Gold, and McIntosh. Other varieties will be ready for picking after about one week. Orchardists are continuing with summer spray programs to control apple scab, sooty blotch, fly speck and other summer diseases. I observed sunburn on apple fruits, as well as bitter pit on some apple varieties. Blister spot, apple scab, and codling moth damage are also evident at some sites. Harvests are underway for fall-bearing raspberries and grapes, and multicolored Asian lady beetle is a problem in these and other fruit crops.

Harvesting continues for sweet corn, tomatoes, peppers, muskmelons, watermelons, squash and other vegetables in northern Illinois. Some problems to be dealt with in the last few weeks of harvest include rust on sweet corn and corn borer and corn earworm. [Earworm moth counts have been up, and pyrethroid performance has been less than perfect ... see the article later in this issue.] Controlling these insects also is necessary in peppers, tomatoes, and snap beans. Powdery mildew has been observed on pumpkins and other vine crops, and bacterial spot symptoms have developed on

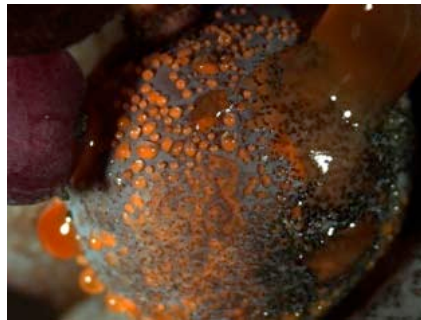
pumpkin leaves and fruits. Early blight and septoria leaf spot are present and warrant control in tomatoes. Aphids and cucumber beetles have been observed on pumpkin leaves. [Editor's note: controlling aphids that colonize pumpkins – primarily cotton-melon aphid – may be necessary to prevent infestations on fruits as vines dry down. Where winged soybean aphids “pass through” pumpkins fields and “taste” pumpkin leaves before moving on, controlling them with insecticides will not prevent any disease transmission, and they will not colonize the crop anyway ... even without insecticide application. So save the sprays if only winged aphids are found and no colonies are developing. RW] Pumpkins are sizing well, and in some fields 60 to 90% of the fruits are orange, with a flush of new fruit beginning to size as well.

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

Fruit Production and Pest Management

Ripe Rot of Grapes

I've been getting calls recently from growers who are finding their grapes shriveling on the vine. They look like they are raisining from dehydration or over-maturity. However, they aren't really ready for that. Often the calls have been associated with Frontenac grape, a hardy, disease-resistant grape that's popular in northern Illinois. These symptoms are uncharacteristic of Frontenac, as it isn't known for developing these symptoms unless it is allowed to mature past 25°Brix, usually late in September if at all.



Ripe rot of Frontenac grapes.

I recently heard from an Extension Educator in western Wisconsin that their vineyards have been suffering from similar symptoms. In their vineyards the condition has been described as Ripe Rot, a fruit rot not often found in northern vineyards. This disease is caused by a fungal pathogen from the genus *Colletotrichum*. A pathologist at the University of Wisconsin who has investigated this problem, Steve Jordon, has described it in the following excerpt:

“Ripe rot is caused by fungi in the genus *Colletotrichum*. These fungi overwinter on infected mummies and dead canes, but due to their broad host range, can survive in or near a vineyard on other hosts. Spores are produced in warm, rainy weather throughout the growing seasons and can infect the fruit at any time, but infections remain latent in fruit until ripening. Disease development is favored by wet weather and temperatures of 77 to 86°F (25 to 30°C). Ripe rot symptoms begin as circular, reddish brown spots on the fruit. These later enlarge to cover the entire berry. Under humid conditions, salmon or orange-colored spores will develop on the surface of infected fruit. Infected fruit may shrivel and decay and can become detached from the vine.”

I have included images (above) that Steve took of the disease on Frontenac Gris clusters from a vineyard near La Crosse, WI. These are very similar to the symptoms being described by growers in northern Illinois. Additionally, I am finding symptoms similar to these in our Frontenac vineyard in St Charles. This season Steve, Patty McManus, and I cooperated in a disease study in this vineyard, and we may have an opportunity to learn more about this disease through this study. In the meantime, be cognizant that this is a new problem that is just emerging. We need to learn more before advising for corrective or preventative action. As we learn more we will keep you informed. For this season, be aware that your crop, if infected, may need to be sorted before delivery. If possible, chill the grapes below 50°F, and advise the winemaker that they should be ready to process the fruit immediately at delivery to avoid further disease development while waiting for crush.

If you believe your crop may be infected, try a simple test to look for symptoms. Harvest 2-3 clusters and put them in a plastic bag. Also put a moistened paper towel in the bag. As you close the bag, maintain some inflation. Place the bag in room temperature and shade. Look for symptoms after several days. These should include small orange spores developing on the surface as described above. This will indicate the likelihood of infection by this disease. I would be interested in hearing from you if you successfully conduct this test and find these symptoms. Please be prepared to indicate variety and spray program to help us identify promising strategies for control.

The appearance of this problem in 2010 is no indication that we need to be concerned about future problems with this disease. However, it does indicate that it may be possible. This season was unusual for its frequency of rainfall and rainfall amounts, especially in the heart of summer. Plus, the crop set fruit and developed much earlier than normal. For these reasons, the incidence of this disease may also be unusual. I'm looking forward to hearing back from you if you think you've experienced this problem.

Bill Shoemaker (630-584-7254; shoemak@illinois.edu)

Vegetable Production and Pest Management

2011 Midwest Vegetable Production Guide Updates

Entomologists, plant pathologists, and weed scientists in the region are in the process of updating the Midwest Vegetable Production Guide for 2011. This includes adding listings of new products and removing listings for products that are no longer labeled for specific uses. For industry personnel who have updates to include in the 2011 guide, please send herbicide updates to Liz Maynard at emaynard@purdue.edu, fungicide updates to Dan Egel at egel@purdue.edu, and insecticide-miticide updates to Rick Weinzierl at weinzier@illinois.edu.

Rick Weinzierl (217-333-6651; weinzier@uiuc.edu)

Likely Pyrethroid Resistance in Corn Earworm Populations

Late last week we harvested and evaluated our sweet corn insecticide trial at Urbana, IL, and corn earworm damage was very heavy in our pyrethroid treatments. Some alternate chemistries worked much better in this trial, though all were applied on the same spray schedule. I also have received reports of excessive damage and infestations in commercial plantings in some northern Illinois locations despite fairly tight spray schedules with Mustang Max. Although no bioassays were done to characterize pyrethroid resistance or susceptibility in these locations, the observations clearly suggest that populations in these fields were resistant to pyrethroids (as has been documented in prior years). Pyrethroids used in sweet corn include Ambush, Asana, Baythroid, Brigade (Capture), Hero, Mustang Max, Pounce, Warrior, and generics of the same active ingredients. Where pyrethroid-resistant earworm populations are present, growers should expect that ALL of these insecticides will fail to provide effective control. Alternatives that have worked best include Belt, Coragen, and Radiant. Entrust – an OMRI-approved product for organic growers – is NOT a pyrethroid and also has worked reasonably well against pyrethroid-resistant earworm populations. Consult the [2010 Midwest Vegetable Production Guide](#) for alternatives to pyrethroids to control corn earworm in peppers, tomatoes, and green beans.

Rick Weinzierl (217-333-6651; weinzier@uiuc.edu)

Downy Mildew in Pumpkins

I diagnosed downy mildew on both processing and jack-o-lantern pumpkins in Tazewell County on August 24, 2010. Since then the disease has spread to new fields. Downy mildew of cucurbits, caused by *Pseudoperonospora cubensis*, is a very destructive disease of cucurbits. The present strain of the pathogen will likely infect all cucurbit crops (cucumber, gourd, muskmelon, pumpkin, squash, and watermelon). Weather conditions in Illinois are very conducive for development of downy mildew.

Downy mildew affects leaves only. Symptoms of downy mildew vary with the host and the environmental conditions. The first symptom is usually the appearance of indistinct, pale green areas on the upper leaf surface. The pale green areas soon become yellow in color and angular to irregular in shape, bounded by the leaf veins. As the disease progresses, the lesions may remain yellow or become brown and necrotic. During moist weather the corresponding lower leaf surface is covered with a downy, pale gray to purple mildew. Often an upward leaf curling will occur.



If anyone is expecting to have his/her cucurbit crop growing for more than two more weeks, he/she will need to spray the crop with one of the following fungicide combinations at weekly intervals: Revus 2.09SC, Tanus 50WG, Ranman 3.6SC, Previcur Flex 6SC, or Presidio 4SC plus chlorothalonil (e.g., Bravo Weather Stik). Applications of Revus 2.09SC + Bravo Weather Stik alternated with Tanus 50WG + Bravo Weather Stik should be effective against the disease. For additional information, contact me at the email address below.

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

Downy Mildew of Basil

Downy mildew of basil, caused by *Peronospora belbahrii*, is already at epidemic levels in Illinois. This disease first occurred in Illinois in 2009. The first report of the disease in the United States was from Florida in 2007. *P. belbahrii* infects leaves, rapidly develops and spreads, and can cause total crop loss. A trial was conducted in a commercial basil field at Momence, Illinois, during September-October 2009 to evaluate the efficacy of selected fungicides for control of downy mildew of basil. Four spray applications of the fungicides were made at 7-day intervals, and disease severity in the plots was assessed 7 days after the last spray application. Severity of downy mildew was less than 4% in the plots sprayed with chlorothalonil (Bravo Weather Stik), dimethomorph (Forum), zaxomide + mancozeb (Gavel), fluopicolide (Presidio), azoxystrobin (Quadris), cyazofamid (Ranman), mandipropamid (Revus), and famoxadone + cymoxanil (Tanos), when these fungicides were mixed with potassium phosphite (ProPhyt). Severity of the disease was the lowest (1%) in plots sprayed with Quadris and was highest (38.1%) in control plots. Severity of the disease was 18.1% in the plots sprayed with an organic mix. Oxidate and Quadris have been labeled for use on basil, but the other fungicides listed above have not been registered for control of basil diseases yet. Based on the results from the 2009 experiment in Illinois, we applied for and were granted Section 18 permits for use of Revus and Ranman during the 2010 growing season for control of basil downy mildew. Thus, using these fungicides, we have successfully controlled basil downy mildew with the recommended spray schedule. Growers can spray Revus + ProPhyt alternated with Quadris + ProPhyt alternated with Ranman + ProPhyt at 7-day intervals. For additional information, contact Mohammad Babadoost at the email address below.



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