

College of Agricultural, Consumer, and Environmental Sciences

Illinois Fruit and Vegetable News

Vol. 19, No. 19, March 6, 2014 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, <u>weinzier@illinois.edu</u>. The *Illinois Fruit and Vegetable News* is available on the web at: <u>http://ipm.illinois.edu/ifvn/</u>. 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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Upcoming Programs

Check the Illinois SARE calendar for a full list of programs and links for registration. <u>http://illinoissare.org/</u> and <u>http://illinoissare.org/calendar.php</u> Also see the University of Illinois Extension Local Food Systems and Small Farms Team's web site at: <u>http://web.extension.illinois.edu/smallfarm/</u> and their calendar of events at <u>http://web.extension.illinois.edu/units/calendar.cfm?UnitID=629</u>.

- Local Food Systems & Small Farms Team Winter Webinar Series, Thursdays, continuing through March 27, 2014. 1:00-2:30 p.m. Multiple topics for small farms. Sessions are presented by U of I Extension Educators and Specialists. No cost. For a list of topics and to register, see http://go.illinois.edu/winterwebinar.
- GAPs (Good Agricultural Practices) workshops and webinars, continuing through June, 2014. See http://web.extension.illinois.edu/smallfarm/gaps/fs1377.html for more information on dates, locations, and registration, or contact a Local Food Systems and Small Farms educator in your area (see the staff list and contact info at the end of this newsletter). Counties with upcoming programs include Will, Jackson, McHenry, Effingham, Jefferson, and Macon. Webinar series will be held in April and June.
- **"Putting Small Acres to Work" Workshops, multiple locations, continuing through April 5, 2014**. The University of Illinois Extension Local Food Systems and Small Farms Team is coordinating a series of workshops on topics that help people learn ways to put a few acres to use. Remaining locations include

Lincoln Land Community College (Springfield), on March 22; Kankakee Community College on March 29; Lincoln Land Community College (Litchfield) on April 5. See http://web.extension.illinois.edu/state/calendar event.cfm?ID=64513).

- Midwest School for Beginning Grape Growers, March 16-18, 2014. Wisconsin Dells, Wisconsin. See http://www.cias.wisc.edu/midwest-school-for-beginning-grape-growers/ or call Regina Hirsch at 608-335-7755. Registration is \$375; see http://www.cias.wisc.edu/midwest-school-for-beginning-grape-growers/ or call Regina Hirsch at 608-335-7755. Registration is \$375; see http://www.cias.wisc.edu/wp-content/uploads/2014/01/grapeschoolfinal-3.pdf.
- Cover Crop Field Tour for Fruit and Vegetable Production, April 3, 2014. Beginning at Rendleman Orchards, 9680 Illinois Rt. 127, Alto Pass, IL. Sponsored by Jackson and Union County SWD and University of Illinois Extension. To register (free), call the Union County SWD at 618-833-5666, ext. 3, or the Jackson County SWD at 618-684-3064, ext. 3, by March 28.
- University of Illinois Short Course Bees and Beekeeping, April 5, 2014. 9:00 a.m. to 6:00 p.m., Urbana, IL. See http://www.life.illinois.edu/entomology/bee-course.html or call 217-265-7614 to register (\$100). Registration is limited to 50 ... register early.
- Fruit Tree Grafting Workshops, April 19 (Woodford County) and 26 (Livingston County), 2014. See http://web.extension.illinois.edu/registration/?RegistrationID=9119 or contact Bill Davison at 309-663-8306 or wdavison@illinois.edu for information. Registration fee is \$10.00.
- Elderberry Mentoring Workshop, April 23, 2014. 9:00 a.m. 4:00 p.m., Tory Frees Farm, 6343 MM Road, Redbud, IL. Pre-register (\$40.00) by April 18. For information and to register, see: <u>https://webs.extension.uiuc.edu/registration/?RegistrationID=9825registration/?9825</u> or contact Sonja Lallemand at 618-687-1727 or <u>lalleman@illinois.edu</u>.
- MarketReady: Learning to Connect with Commercial Markets, April 7, 2014. 9:00 am to 3:00 p.m., University of Illinois Extension, Cook County, 2205 Enterprise Dr., Suite 501, Westchester, IL. To register (\$15.00), see <u>https://webs.extension.uiuc.edu/registration/?RegistrationID=9769</u>; for more information call 708-449-4320.

Regional Reports



From western Illinois – which is apparently the new heart of the Tundra. Although it may be improving (a little bit) by now, the 4-inch soil temperature on February 26 was 14.8 degrees F at the weather station near Galesburg. With it so cold, is there anything going on over here?

Transplants are started in greenhouses in spite of recent temperatures. As we know, things can change in a hurry. We could see a warm-up sooner than expected, and we hope transplants won't get to leggy on us. I have a couple of growers who are incorporating what can be called a cold frame inside their high tunnels to see if they can get the transplants "outside" (the house!) a week or ten days sooner this year. The cold frames set directly over the row or bed. It's an ingenious idea and I hope it works out for them. We all tend to get a little over-zealous at starting our transplants each winter/spring. It's human nature ... we are optimists.

Now's also the time for continuing homework on production practices and markets, planning new irrigation systems, revising planting schedules, evaluating companion planting research, and attending workshops and webinars. Here's to hoping Spring gets here soon.

Kyle Cecil (309-342-5108; cecil@illinois.edu)

From the south. Like many we are awaiting the arrival of spring. Despite the cold many cover crops still are looking fairly good. On some well drained soils I did have the opportunity to frost seed a red clover cover crop into some small grains (triticale) this past weekend prior to the winter precipitation. I also found some green shoots starting to emerge from some garlic planted mid-November. Hopefully the weather forecast will hold true and some warmer temperatures will be coming soon!



Left: Young garlic emerging through a crimson clover cover crop; garlic planted November 16, 2013. Right: Overwintering triticale cover crop. This is the perfect time for frost seeding a cover crop such as red clover. Although small now, with warmer temperature this cover will quickly develop.

Nathan Johanning (618-687-1727; <u>njohann@illinois.edu</u>)

Fruit Production and Pest Management

Superior Oil Applications from Green Tip to Pink

My usual annual reminder ... Although new insecticides offer lots of benefits for protecting trees and fruit from damaging pests, 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 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 $-\frac{1}{2}$ 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 <u>2014 Midwest Tree Fruit Spray Guide</u>), 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.

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

Vegetable Production and Pest Management

Cover Crop Resources

To help provide information on cover crops, the Illinois SARE (Sustainable Agriculture Research and Education program) website has dedicated a page to Cover Crop Resources and Programming at http://illinoissare.org/covercrops.html. You can also use the Illinois SARE calendar http://illinoissare.org/covercrops.html. You can also use the Illinois SARE calendar http://illinoissare.org/covercrops.html. You can also use the Illinois SARE calendar http://illinoissare.org/calendar.php), open the calendar in Google, and then do a key word search for "Cover Crops" to locate upcoming programs in your area.

Mary Hosier (217-333-7512; mhosier@illinois.edu)

Good High Tunnel Videos

The Samuel Roberts Noble Foundation has posted three videos on high tunnel construction. Spending 30 minutes to watch these would be time well-spent. See <u>http://www.noble.org/video/ag/events/hoop-house/.</u>

Kyle Cecil (309-342-5108; cecil@illinois.edu)

High tunnel end walls. Is there a "best" type?

No, there is not! When asking other growers this question, you will get one of two types of answers. The first is the same as mine. The "no" answer usually comes from growers that have tried many different types and have experienced success and failures along the way. The second is the answer from growers that have had more success with one design than they have had failure. Whatever design of end wall you choose should be based on a number of site specific factors, but all end walls should have the following attributes.

- 1. They should be able to be sealed securely and have a minimum of gaps.
- 2. They should be structurally sound. The end wall takes a lot of abuse. End walls should be secured to the rest of the structure somehow and not be "free-standing". For example, they should be connected to at least one of the bows with braces.
- 3. Their opening should be only big enough to get your specific equipment inside the structure. Don't construct a 20 feet wide end wall opening if the only piece of equipment you have is 4 feet wide. You may get larger equipment later, but the end wall structure can be changed down the road at that time. Chances are you will need to change the fabric anyway.

- 4. Secure the end wall post into the ground preferably with concrete. If you can't use concrete, use ground anchors large enough to secure the structure to the ground during wind events.
- 5. Consider using anchor blocks or anchor bolts on the bottom of the end wall posts before you secure them with excavated earth or concrete.
- 6. Ease of daily entrance. Have a walk-in door in addition to any other entrance points. You want to make access to the structure as easy as possible. You will be entering it many times a day.

Kyle Cecil (309-342-5108; cecil@illinois.edu)

Asparagus Variety Trial Summary from Carl Cantaluppi

Many in Illinois may remember Carl Cantaluppi, who was the Extension Horticulture Adviser in the Quad Cities in the 1980's. He gave quite a few asparagus growers their first start with the crop. After he left IL he traveled to the Piketon, OH Research Center and he's now located in North Carolina as a county horticulture adviser. In all three locations he initiated an asparagus variety trial.

He's done more work in asparagus than anyone I know. He recently shared with me his latest variety trial information. The trial was planted in 2005 (as 15 week-old transplants) in a randomized complete block design. Plants were spaced 12" apart in 5' rows at a 6" depth. Harvest was done by hand snapping. Each year varieties were ranked according to yield, from 1-12. The results are summarized below.

Carl also comments: The attributes of the California Hybrids should enable the grower to harvest a taller spear (8-9 inches) at temperatures above 70 degrees F without the tip of the spear opening up or "ferning out," which causes spears to be tough. Taller spears are heavier, having more weight per spear. The New Jersey male hybrids, University of Guelph male hybrid, and open-pollinated cultivars fern out at a shorter spear height (5-6 inches) under warm temperatures above 70 degrees F.

Asparagus yields, comparative ranking. Data from Carl Cantaluppi, North Carolina Cooperative Extension.

	2007	2008	2009	2010	2011	2012	2013
UC 157	1	6	7	6	8	8	11
Jersey Giant	2	2	3	2	3	5	5
Jersey Knight	3	5	6	9	7	4	8
Jersey Supreme	4	4	4	4	4	2	4
UC 115	5	8	12	7	6	12	12
Jersey Gem	6	9	9	12	12	10	9
Atlas	7	3	5	5	5	3	7
Grande	8	1	1	3	1	1	3
Apollo	9	11	8	8	11	11	10
Jersey Knight	10	12	11	11	10	9	6
Purple Passion	11	10	10	10	9	7	1
Millennium	12	7	2	1	2	6	2

Soil fertility is important to allow the crop to grow to its fullest. A soil pH of 6.7-7.0 is ideal. Asparagus enjoys soil with a very high phosphorus level. Soil test levels of up to 250#/acre are ideal, with potassium soil test levels of 300#. Nitrogen fertilization with 70# of nitrogen per acre should occur after harvest.

There are several herbicides available for use in weed control. However, most will not provide season-long weed control, so reapplication may be advisable. Asparagus beetle can be a problem in most years. The adult feeding on the emerged spear will result in a crooked spear. Eggs laid on emerged spears can discount the appearance and thus sales. The Midwest Vegetable Production Guide for Commercial Growers lists pesticides for many crops, including asparagus. See http://www.btny.purdue.edu/pubs/id/id-56/.

It's a standard practice to pick male hybrids the year after planting, perhaps over a 2-week harvest period. The following year ,increase to 4 weeks, then 6 weeks the next, then 8 weeks ... which will probably be the limit from there

on. These are ballpark times, which will depend upon weather conditions. The best rule is to discontinue picking when 75% of the spears are pencil diameter or smaller. As spears emerge, stored energy in the crown provides this growth. As spears diminish in size, it signals that energy reserves are being exhausted. So don't over-pick, as that can lead to stress.

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

Seed and Root Maggots

A repeat 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 *2014 Midwest Vegetable Production Guide for Commercial Growers* and product labels for specific products and rates. Neonicotinoids used in seed treatments on cucurbits (Farmore DI-400) or in-furrow applications to soil (Admire Pro or Platinum) 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 <u>2014 Midwest Vegetable</u> <u>Production Guide for Commercial Growers</u> 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 <u>ipmworld.umn.edu/chapters/maize.htm</u>). Right: seedcorn maggot adult flies (photo by Jeff Hahn at <u>www.extension.umn.edu/.../YGLN-June1502.html</u>).



Left: Cabbage maggots on cabbage root. Right: onion maggot injury to green onions. (Photos from University of Minnesota. Rick Weinzierl (217-244-2126; <u>weinzier@illinois.edu</u>)

Less seriously ...

Just changed my Facebook name to 'No one' so when I see stupid posts I can click like and it will say 'No one likes this'.

I used to like my neighbors ... then they put a password on their Wi-Fi.

Doctor: "You're overweight." Patient: "I think I want a second opinion." Doctor: "You're also ugly."

What happens when you get scared half-to-death twice?

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University of Illinois Extension Educators and Specialists in Fruit and Vegetable Production and Pest Management

2014 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 2014 (April, 2014 – March, 2015). 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.

For those with internet access, the 2014 *Illinois Fruit and Vegetable News* issues will be posted on the web and available free of charge at: <u>http://ipm.illinois.edu/ifvn/.</u>

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If you have questions, call Rick Weinzierl at 217-244-2126 or email weinzier@illinois.edu.

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