UNIVERSITY OF ILLINOIS EXTENSION

College of Agricultural, Consumer, and Environmental Sciences

Illinois Fruit and Vegetable News

Vol. 9, No. 18, November 25, 2003

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, 217-333-6651, weinzier@uiuc.edu. The ***Illinois Fruit and Vegetable News*** is available on the web at: http://www.ipm.uiuc.edu/ifvn/index.html . To receive email notification of new postings of this newsletter, call or write Rick Weinzierl at the number or address above.

This issue's words of wisdom ... which usually means the jokes ... are at the end of newsletter ... check the last page.

In this issue ...

Crop Reports

In southern Illinois, rainfall has been abundant during the last several days, with a minimum of 3 inches falling on the 18th and more again on the 23rd. Travel was hindered for several days until water receded from low-lying areas. Monday, the 24th, marked the first day of the fall season that temperatures dropped significantly below freezing. It was noted earlier that leaves were slow in falling this year, but with today's freezing temperature leaves are falling in abundance. Any remaining foliage on tender plants showed definite freeze injury, but cool-season crops are still holding up. Peach growers have been busy applying sprays for control of peach leaf curl and bacterial spot. The application of straw mulch to strawberries came at a normal time, which normally coincides with Thanksgiving.

Upcoming extension education programs for growers in the southern part of the state are listed in the "Upcoming Programs" section below.

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

In northern Illinois, the temperature roller coaster has been running throughout November. Day temperatures ranged from

the upper 30s to low 50s from November 6-10, with night temps in the teens to 32 ^{0}F. Then from November 15 to 21, highs climbed back to the 40s to upper 60s, with overnight lows above freezing. The weekend of the November 21-22 brought cold rains, and temperatures in the region dropped well below freezing again in the last few days. Rainfall varied by location from 0.8 to 3 inches in the area between November 17 and 18, with counties in the northwest receiving less compared to the counties in the central part of the area. The first traces of snow were reported in the Rockford area on November 14, but some pick-your-own apple orchards will remain open until the Thanksgiving holiday.

Upcoming meetings for northern Illinois growers:

- Illiana Vegetable Grower School on Thursday January 8, 2004 at Teibels' Restaurant in Schererville, Indiana (http://www.hort.purdue.edu/fruitveg/events/events.shtml)
- Illinois/Wisconsin (Stateline) Fruit and Vegetable Conference on Thursday February 26, 2004 at Lake Lawn Resort in Delavan, Wisconsin.

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

Upcoming Programs

Organic Production Workshop at the Illinois Specialty Crops Conference

For growers considering certified organic production, an Organic Workshop will be conducted at the Illinois Specialty Crops Conference on January 22, 2004. The program will be held at the Springfield Crown Plaza, and is scheduled for 1:00–9:00pm, with a registration fee of $30.00. The Workshop is aimed at farmers with experience in producing fruits and vegetables and considering whether or not to grow fruits and vegetables organically. Also targeted are those first considering fruit and vegetable production and exploring an organic market. Contact John Masiunas (masiunas@uiuc.edu, 217-244-4469) or Elizabeth Wahle (wahle@uiuc.edu, 618-692-9434) for additional information on the workshop. Contact Diane Handley at 309-557-2107 or handley@ilfb.org for registration materials. The program:

Organic Production and Marketing: A Primer for Beginners

Certification - Moderator: John Masiunas
1:00 to 1:45 p.m. What a farmer should know about certification - Cissy Bowman
1:45 to 2:30 p.m. To certify or not to certify – That is the question – Brent Palmier and Juli Brussell
2:30 to 3:00 p.m. Break and Discussion

Organic Production - Moderator: Elizabeth Wahle
3:00 to 3:45 p.m. Varieties for organic production: Seed sources and selecting varieties – Henry Brockman, Teresa Brockman, and Bill Shoemaker
3:45 to 4:25 p.m. Using composts in organic production: Factors to consider - Leslie Cooperband
4:25 to 4:45 p.m. Information sources for organic farmers – Andrew Larson
4:30 to 5:15 p.m. Managing weeds in organic production systems - John Masiunas

Organic Production Roundtable - Moderator: Juli Brussell
7:00 to 9:00 p.m. Terra Brockman, Henry Brockman, Teresa Brockman, Cissy Bowman, Brent Palmier

Cider and Hard Cider Contests at the Illinois Specialty Crops Conference

The Illinois Cider and Hard Cider Contest will again be held at the Illinois Specialty Crops Conference in Springfield, January 22 -24, 2004, and will be hosted by the Illinois State Horticulture Society. One gallon of product is required for the judging contest. Registration for all cider contests will be on January 23rd, from 8:00 to 9:45a.m. Judging will commence at 10:00am. Contact Elizabeth Wahle (*618-692-9434; wahle@uiuc.edu*) for additional information.

Other Winter Programs

- January 8, 2004. Illiana Vegetable Grower School, Teibels' Restaurant, Schererville, Indiana. (http://www.hort.purdue.edu/fruitveg/events/events.shtml)
- February 3, 2004. South Central and Southern Illinois Tree Fruit School, Mt. Vernon Holiday Inn.
- February 4, 2004. Southwest Illinois Tree Fruit School, Hardin (location to be announced).
- February 11, 2004. Southern Illinois Vegetable School, Mt Vernon Holiday Inn.
- February 26, 2004. Illinois/Wisconsin (Stateline) Fruit and Vegetable Conference, Lake Lawn Resort, Delavan, Wisconsin.
- March 2-3, 2004. Small Fruit and Strawberry School, Mt. Vernon Holiday Inn.

Notes from Chris Doll

Winter is only a month away, but the season is upon us after lots of nice fall weather. It is tough to beat the nice weather in the 60's and 70's that we had in the 3rd week of November in downstate Illinois. A couple of frosts beginning on October 2 burned off the tender plants including some green soybeans, but the ice-makers have not occurred yet. Precipitation has been a little unusual in that the 75-day period from Sept. 2 through November 16 brought 16 rainfalls that totaled only 4.7 inches, and there was no recharge in the soil. However, November 17th gave Southern areas 4-5 inches, and that will last for a while. The last Gold Rush, Fuji, and Red Lady were picked on the 22nd.

One of the problems with frequent rains at this time of the year is that broadcasted mouse (vole) bait doesn't stay dry long enough to be effective. The alternatives to broadcasting is bait stations and trail baiting, both more time consuming. Baiting is expensive, but so are dying trees as evidenced by two orchard calls this year.

Plant defoliation has been slow, but peaches are now nude and most apples are dropping leaves. Grape leaves are off, and brambles are turning nicely. The Back-40 peach trees received their leaf curl and bacterial spot spray on the 20th, which was the identical date of 2002.

I attended the annual meeting of the Midwest Apple Improvement Association (MAIA) at Purdue last week. This organization has the goal of developing economically and culturally viable apple cultivars for the Midwest. They have produced thousands of seedling trees that are planted in Illinois, Indiana and Ohio. This year some of Jim Eckert's trees had a sprinkling of fruit that showed some good qualities but will need much more time to evaluate. My recollection of the breeding program in New Zealand was that about one in 25000 seedlings makes it to introduction. The time factor differs by programs, as evidenced by the Chieftain apple. Conflicting reports say that the cross was made in 1917 and 1928. It was named and introduced in 1968 by Iowa State University after 13 years of observation by yours truly at the Council Bluffs Experimental Farm. A Jonathan/Delicious cross, it has a deep red skin, good flavor and texture, stores well, is moderately resistant to scab and fire blight, and hangs well into the Golden Delicious season. A recent release by the Iowa State University Alumni Association via e-mail stated that "Chieftain's are getting rave revues by students and staff all across campus." It is an excellent apple that never had the promotion to push it in the industry.

At the MAIA meeting, Dr. Susan Brown of Cornell describer her breeding program at Geneva, NY. The process has moved to high-tech over my horseradish breeding experience, as terms such as synteny, retrotransposon, transformation and apetalous were heard, but the terms of pollen parent and mother tree were also used. Goals of the NY program are cultivars that are different, distinct, better, more nutritious, and have disease resistance. Evaluation factors of "better" included crispness, firmness, juiciness, Brix and sensory factors. She reported that vitamin C increase is easy once the gene is identified in the parent material.

The last issue of the "Fruit Grower News" had a back to back page of colorful peach varieties from Michigan's Stellar and Paul Friday breeding programs. Elizabeth Wahle and I had the privilege of seeing most of those varieties at the Fruit Variety Showcase and some of them in orchards as well in September. Many of these will be in orchards for years to come, and only time will determine the best. The new Stellar is Autumn Star, which looked good. My pick of Paul Friday's group was PF 28-2007 for size and PF 24C that had flavor and reported cold-hardiness.

My calendar says it's time to mulch strawberries, remove spiral tree guards from trees that do not have air space between the trunk and plastic, wrap up the spray season and weatherize the sprayer, do something about deer, and celebrate Thanksgiving.

Chris Doll

Fruit Production and Pest Management

From the Dixon Springs Ag Center ... At this time of the year, we have finished harvesting apples and have cleaned up the plots from the summer crops. We are tending to a new .25 acre strawberry plasticulture field that is showing a lot of promise for good spring yields (thanks to the long warm fall). The yield data from the 2003 spring harvest of plasticulture strawberries was disappointing but also reflected the hail damage the field suffered on May 6 (two nights before the first harvest). Despite hail damage to our apple crop, we were able to harvest and sell several bushels from each variety except Golden Delicious, with positive consumer feedback. Pristine, Enterprise, and Goldrush all had good fruit size, but Liberty was quite a bit smaller. Just for fun, we conducted a little taste test among employees at the DSAC, and the men all preferred Liberty over Enterprise, but the women were just the opposite. Enterprise has a tougher skin than liberty but is more tart/sweet (good for making pie was the common comment). Liberty is not as crisp but is really sweet.

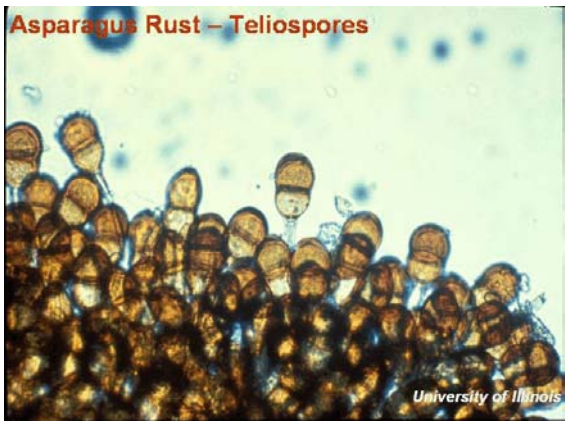
Bronwyn Aly (618-695-2444; baly@uiuc.edu)

Vegetable Production and Pest Management

Asparagus Rust

Asparagus rust, caused by the fungus *Puccinia asparagi*, occurs worldwide wherever asparagus is grown. All above-ground parts of plants may become infected. Severely diseased plants may be killed during summer. Asparagus plants weakened by rust are also susceptible to the Fusarium wilt and root rot. This diseases occur in Illinois every year.

Symptoms. Asparagus rust appears in four stages. The first symptom, occurring in early seasons, is the appearance of inconspicuous, light green, oval spots (brownish pycnia and then aecia) on the first shoots or spears. If these spears are harvested, the rust cycle will be broken and the disease does not develop further. Where the spears are not harvested, these spots develop into yellow, cup-shaped spore-bearing aecia in concentric ring patterns. The common, cinnamon-brown, blister-like pustules (uredinia) develop about two weeks later. Large numbers of brick-red, almost spherical urediniospores are produced in the small, dusty, cinnamon-brown pustules. During late summer or autumn, blackish-brown lesions, called telia, are produced which give a blackened appearance to the plants.



Disease management. Remove all infested crop residues to minimize the amount of primary inoculum. Destroy wild or volunteer asparagus within 1,000 feet of commercial plantings. Locate new planting or nurseries away away from established plantings. Fields should be clean cut after harvest, and spears should be cut below the soil level to avoid infection of the stubs by rust spores. Practices that promote the rapid drying of plant surfaces, such as planting rows in the direction of the prevailing wind, may help to limit infection.

Use resistant or tolerant asparagus cultivars when are available. If rust is a recurring problem, applications of chlorothalonil, mancozeb, or Nova are recommended.

For more information on asparagus rust, refer to the following web sites:
http://www.ag.uiuc.edu/%7Evista/abstracts/a934.html and http://www.ipm.ucdavis.edu/PMG/r7100111.html .

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

Brief Summaries of 2003 Research Projects

Relationships Between Weed and Ground Beetle Populations in the First Year of a Transition to Organic Production

The process of shifting from cropping systems that rely on synthetic fertilizers and pesticides to cropping systems using organic practices can be difficult for farmers. It is generally believed that weed populations and the difficulty of control increase as a field moves through transition. Once the field is through the transition process and becomes a stable organic system, it is thought that weed problems decrease. Research is needed to confirm these observations and to understand the underlying processes. The objectives of our research were to determine the distribution of weed and ground beetle populations in a field transitioning to organic, evaluate the impact of transition approach on those populations, and determine if initial ground beetle and weed populations were correlated. The three transition systems were: a low input pasture system with perennial grasses and legumes; a medium intensity agronomic system with cash grains; and a high intensity system with vegetable crops. The dominant weed species differed depending on the transition systems. The high intensity system with tomatoes largely had volunteer wheat due to the wheat straw used as a mulch between the crop rows being contaminated with seed. Common lambsquarters and velvetleaf were the two dominant species in the low and medium intensity systems. The medium intensity system with soybeans had the fewest weeds due to between-row cultivation and the competitiveness of the crop. The weeds were aggregated in the field and herbaceous ground beetle populations were correlated with the weed populations *(John Masiunas, masiunas@uiuc.edu)*.

Sweet Corn Varietal Tolerance to Callisto.

New options are needed to manage weeds in sweet corn. Broadleaf weed control in sweet corn relies on applications of atrazine, but several problems exist with the use of atrazine. Important weeds such as *Amaranthus* species and common lambsquarters (*Chenopodium album*) have developed resistance to atrazine. Atrazine can persist, limiting the crops that can be planted the following year. The herbicide has also been found in surface and ground waters. Other registered herbicides such as 2,4-D and Accent can injure sweet corn, or varieties vary in their tolerance. Callisto may be an alternative to atrazine. The objective of our research was to determine if sweet corn cultivars differ in their tolerance to Callisto. Approximately 150 sweet corn varieties were evaluated by Drs. Pataky, Sprague, and Wax. About 10% of the varieties were extensively injured by Callisto. Many of the varieties had common inbred parents, suggesting a genetic basis for the susceptibility. Dr. Williams and I evaluated the rate responses for eight cultivars differing in their tolerance to Callisto. Callisto at standard field rates caused greater than 50% injury and reduced yields of Shogun, Gallant, How Sweet It Is, and Polaris. Including atrazine with Callisto did not increase the injury. GH7749, GH2547, GH2684, and Bonus had less than 10% injury and yields were not reduced. When registered, it will be necessary to limit Callisto use to tolerant cultivars. *(John Masiunas, masiunas@uiuc.edu)*

The Influence of Cereal Rye Surface Residues and Staking on Eastern Black Nightshade Competitiveness with Tomato

Eastern black nightshade is a difficult weed to control in tomatoes. The two species have similar herbicide susceptibilities and growth habits. Eastern black nightshade can overtop tomatoes, and the two species primarily compete for light. Previous research has indicated that cereal rye surface residues control eastern black nightshade. It might be possible to modify tomato production systems to make the crop more competitive with nightshade. The objective of our research was to evaluate a rye cover crop and staking as techniques to increase the competitiveness of tomatoes with nightshade. The rye cover crop inhibited tomato and nightshade growth similarly, especially in wetter areas of the field. Tomato yields were also

substantially reduced in the cover crop treatment compared to bare ground. This growth and yield inhibition was due to soil compaction. Staking raised the tomato canopy over the nightshade and made the tomatoes more competitive for light. Light levels at the tomato canopy and tomato yields were greater in the staked plots than in the nonstaked plots. Staking fresh market tomatoes may be one way to increase competitiveness and thus yield in areas where eastern black nightshade is difficult to control. *(John Masiunas, masiunas@uiuc.edu)*

Strip-till Pumpkin Production

Planting of pumpkin transplants into strip-tilled, fall planted rye and rye/hairy vetch resulted in a better stand than direct seeding. Rodents were feeding on pumpkin seeds before germination in direct seeded plots, leading to a poor stand. There was no significant difference in number of orange fruits per acre, but there were higher numbers of green fruits in the rye & rye/hairy vetch plots. The average size of fruits in the strip-till plots was about 70% the size of fruits in bare ground plots. The ground between pumpkin rows was still covered with rolled rye mulch at harvesting time. *Maurice Ogutu (708-352-0109; ogutu@.uiuc.edu)*

Tomato and Pepper Variety Trials at the Dixon Springs Ag Center and Union County

Tomatoes at DSAC were grown on fumigated, raised beds covered with black plastic mulch and trickle irrigation. Plants were spaced 30 inches apart in single rows.

Table 1. Top ten tomato varieties from DSAC in descending order of pounds per plant of U.S. No. 1 fruit.

Variety	Total US No. 1 Fruit (Lbs. Per Plant)	Average Fruit Size (Oz.)
1. Carolina Gold	12.7	12.2
2. NC 0236	11.2	11.8
3. Florida 47	10.7	11.5
4. NC 00238	10.4	10.9
5. Amelia	10.2	11.1
6. NC 00239	10.2	10.1
7. Sunguard	10.1	11.0
8. NC 0256	10.1	11.7
9. NC 02226	10.0	11.0
10. Fabulous	10.0	12.8

Tomatoes in Union County were grown on flat, bare ground with no irrigation. Plants were spaced 30 inches apart in single rows.

Table 2. Top ten tomato varieties from Union County in descending order of pounds per plant of U.S. No. 1 fruit.

Variety	Total US No. 1 Fruit (Lbs. Per Plant)	Average Fruit Size (Oz.)
1. Amelia	12.6	12.2
2. Sunbrite	10.1	12.8
3. NC 0256	9.6	11.0
4. Carolina Gold	9.5	11.5
5. Sebring	9.3	11.4
6. BHN 543	8.4	11.3
7. Sunguard	8.0	11.6
8. Sunbeam	7.9	11.3
9. Floralina	7.7	11.2
10. NC 00239	7.5	9.4

Peppers at DSAC were grown on fumigated, raised beds covered with black plastic mulch and trickle irrigation. Plants were set in twin rows with a spacing of 12 inches by 12 inches, giving a population of 15,000 plants per acre.

Table 3. Top ten pepper varieties from DSAC in descending order of pounds per plant of U.S. No. 1 fruit.

Variety	Total US No. 1 Fruit (Lbs. Per Plant)	Bushels Per Acre
1. Lafayette	2.4	1440
2. Emerald Isle*	2.4	1440
3. Paladin*	2.3	1380
4. Brigadier	2.2	1320
5. Legionnaire	2.1	1260
6. King Arthur	2.1	1260
7. Valencia	2.1	1260
8. Colossal	2.0	1200
9. Patriot	1.5	900
10. Mavras	1.5	900

* Phytophthora resistant varieties

Peppers in Union County were grown on flat, bare ground with no irrigation. Plants were set in single rows with a spacing of 30 inches, giving a population of 5808 plants per acre.

Table 4. Top ten pepper varieties from DSAC in descending order of pounds per plant of U.S. No. 1 fruit.

Variety	Total US No. 1 Fruit (Lbs. Per Plant)	Bushels Per Acre
1. Lafayette	2.6	604
2. X3R Camelot	2.5	581
3. Emerald Isle*	2.5	581
4. Crusader	2.3	534
5. Patriot	2.1	488
6. Brigadier	2.1	488
7. Legionnaire	2.1	488
8. Paladin*	2.0	465
9. Sir Galahad	1.9	441
10. Valencia	1.9	441

* Phytophthora resistant varieties

Bronwyn Aly (618-695-2444; baly@uiuc.edu)

In Memoriam:

Harley Willaredt, a life-long vegetable and horseradish grower of Collinsville, died on November 19. Those who knew Harley will always remember his friendliness and then even more friendliness. He was a good grower and a great cooperator with applied research projects on his farm. He was a member of the TriCounty Vegetable Growers Association, the Horseradish Growers of Illinois, and was a past director of the Illinois Specialty Growers Association. Harley is survived by his wife Wilma, daughter Jeanne Sagovac, and son Don who continues to operate the family farm, as well as three grandchildren and two brothers and two sisters. Memorials are suggested to the St. John United Church of Christ in Granite City.

Chris Doll

This issue's words of wisdom ...

On Thanksgiving ...

> The Puritans gave thanks for being preserved from the Indians, and we give thanks for being preserved from the Puritans. (Finley Peter Dunn)
>
> Thanksgiving is a day off that's usually followed by an off day.
>
> After Thanksgiving dinner, the man who has trouble making ends meet ought to get himself a longer belt.

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

Extension Educators in Food Crop Horticulture		
Bill Shoemaker, St. Charles Res. Center	630/584-7254	wshoemak@inil.com
Maurice Ogutu, Countryside Ext Center	708-352-0109	ogutu@uiuc.edu.
Elizabeth Wahle, Edwardsville Center	618-692-9434	wahle@uiuc.edu
Extension Educators		
Mark Hoard, Mt. Vernon Center	618-242-9310	hoard@uiuc.edu
Suzanne Bissonnette, Champaign Center	217-333-4901	sbisson@uiuc.edu
George Czapar, Springfield Center	217-782-6515	gfc@uiuc.edu
Dave Feltes, Quad Cities Center	309-792-2500	dfeltes@uiuc.edu
Russel Higgins, Matteson Center	708-720-7520	rahiggin@uiuc.edu
Campus-based Specialists		
Mohammad Babadoost, Plant Pathology	217-333-1523	babadoos@uiuc.edu
Raymond Cloyd, Greenhouse insects	217-244-7218	rcloyd@uiuc.edu
Kelly Cook, Entomology	217-333-6651	kcook8@uiuc.edu
Mosbah Kushad, Fruit & Veg Production	217-244-5691	kushad@uiuc.edu
John Masiunas, Weed Science	217-244-4469	masiunas@uiuc.edu
Chuck Voigt, Veg Production (& herbs)	217-333-1969	c-voigt@uiuc.edu
Rick Weinzierl, Entomology	217-333-6651	weinzier@uiuc.edu

Return Address:

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