



# 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](mailto: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*

- **Web Marketing for Your Farm, March 16, 2009**, 6:30-9:00 p.m., University of Illinois Extension, Sangamon County Unit Office, Springfield, IL, featuring Simon Huntley, Lead Developer, Small Farm Central ([www.smallfarmcentral.com](http://www.smallfarmcentral.com)) and Andrew and Jennifer Miller, Rush Creek Farms (<http://www.rushcreekfarms.com>). \$30 registration fee for registrants who have not been enrolled in CIFB. To register, contact Deborah Cavanaugh-Grant, University of Illinois Extension and Co-Facilitator CIFB, 217-968-5512, [cvnghgrn@illinois.edu](mailto:cvnghgrn@illinois.edu).

### *Regional Updates*

**In southwestern Illinois**, signs of spring are apparent, including some rather nasty weather this past Sunday. Multiple tornadoes were reported in a wide circle around the St. Louis area, and heavy rainfall was common. The Mississippi River is on the rise and is expected to reach the 30 foot flood stage in the St. Louis area sometime Saturday afternoon, with more rain in the forecast. Temperatures have been all over the place – pushing 80 degrees F on March 10 and barely out of 30s since then.

Planting of early, hardy vegetables should start next week if soil conditions are good. Conditions the following week will determine if sweet corn planting gets started. Transplants for high tunnel production have already been seeded.

Fruit growers are busy as well. Pruning is ongoing in many crops, including apples, peaches, grapes, blueberries and brambles. In talking with Brad Taylor at Southern Illinois University, he mentioned that a dry period with cold overnight temperatures is to continue. These conditions are conducive to a radiation freeze, suggesting grape growers should only rough prune and save fine pruning until after the cold dry period. Sprayers need to be pulled out and calibrated in anticipation of dormant applications for disease and insect control. Check the spray guides for the

appropriate timing and rate for the various fruit crops. Leaf curl sprays on peaches need to be applied as soon as conditions allow if they were not already done last fall. Be ready for growth on orchard and vineyard floors to take off with the next warm-up. Growers should be prepared with a spring burndown and preemergent herbicide for residual control.

I have a few spray guides left over from schools if anyone would like to buy a hard copy. I have a few Midwest Commercial Small Fruit and Grape Spray Guides for \$13.00 and Midwest Tree Fruit Spray Guides for \$12.00 delivered within continental US, first come, first serve. After I run out, additional copies can be purchased through University of Illinois Publications at <https://pubsplus.uiuc.edu/>.

For those unable to attend, I have posted many of the presentations from the 2009 Illinois Small Fruit and Strawberry Schools on the following website: <http://web.extension.uiuc.edu/edwardsvillecenter/>. Select "Food Crop Horticulture", and then scroll down a bit to view the various resources.

*Elizabeth Wahle (618-692-9434; [wahle@illinois.edu](mailto:wahle@illinois.edu))*

**In northern Illinois**, the warm and cold temperature fluctuations have been noteworthy as well. In the last couple of weeks, day temperatures have exceeded 60 degrees ... and night temps have dropped into the single digits. Precipitation – in the form of 2-5 inches of snow and 2-6 inches of rainfall – interrupted pruning of small fruits and tree fruits, and little or no tillage has been completed so far. Planting of small fruits and tree fruits will commence as soon as the ground can be worked. I have observed some rodent damage on trunk of young fruit trees and some winter injury on shoots of young fruit trees that might have occurred due to extremely cold temperatures recorded in the region in January.

*Maurice Ogutu (708-352-0109; [ogutu@illinois.edu](mailto:ogutu@illinois.edu))*

### ***Notes from Chris Doll***

The calendar says spring is only a long week away, but last weekend felt like it was here. The three-day temperature range of 58 to 82 degrees caused a break in dormancy for a number of plants. A check of the Back-40 showed pussy willows in bloom, some open flowers on Goldbar apricot and near pink on other varieties, swollen bud on Japanese plums, half-inch green on some pears, swollen bud on early blooming peach, and silver tip to some green tip on apple. The small fruits show half-inch green on blackberry and red raspberry, and swollen bud on blueberry. Not much winter kill is visible today, and a good peach crop is expected. These developmental stages seem early, but pink on peach is at least later than the 42-year record of March 5, 1992, and March 9, 1990. More recently, peach pink was March 22, 2007, and April 9, 2008. For pink on apples, the early dates were March 28, 1991, and March 30 in 2000 and again in 2007. Last year it was April 18.

I use the Floral Development charts on pages 54 and 54 of the Spray Guide to record the date at each stage, which is good as long as the copy is not destroyed. The constant in these charts is the critical temperatures for flower bud kill, but this sometimes depends on variable weather conditions with minimum temp, wind, and moisture.

Ground conditions are generally wet, limiting planting. Early planting is advantageous for root development and tree establishment, but planting under wet conditions can offset these benefits. Augured holes can have glazed walls which inhibit root growth, and tree planters in wet soils make it difficult to get the good soil contact with the trees' roots. Adverse conditions also make it more difficult to get the trees at the right depth for long term stability.

The fast break in dormancy might preclude the best timing of the oil and leaf curl spray on peach. Copper sprays should be on apples for help in reducing fire blight bacteria. Pruning of all trees and plants can continue even with bud break, with the usual precaution of having new pruning wounds on fireblight susceptible apples and pears. It is also a good time to do the bud notching on vigorous shoots and water sprouts of apple to help initiate bud break on a shoot or spur above the notch.

A takeoff of last month's list of 10 things to do for productive and profitable orchards is given below as the "10 Things **Not** to Do for the Best Orchard":

- Pay no attention to site selection.
- Don't worry about perennial weeds and vines.
- Forget about soil testing or previous crop history.
- Buy cheap trees, maybe because of quality.
- Pay no attention to the rootstock and plant too deep or too shallow.
- Poor orchard layout by lay of the land or variety mix.
- Forget about the competition that weeds give to trees.
- Do inadequate thinning or no thinning to produce small fruit of low quality.
- Poor cultural practices in establishing and production years.
- Keep unproductive or non-profitable blocks.

The Illinois Small Fruit and Strawberry Schools at Mt. Vernon had an excellent line-up of presentations that I hope will appear on-line for reading in the near future. (Editor's note ... see Elizabeth Wahle's update above.) I spent so much time listening instead of taking notes that only a few references will be made here.

Blueberry growers heard informative presentations by Jennifer Martin of Bluegrass Blueberries, Edmundton, KY. She gave most of the planting, cultural and marketing specs that usually make blueberries profitable. But she emphasized that having a soil pH of 4.5-5.0 is as important as the marketing concept of Location, Location, Location. In her area, birds have not been too much of a problem, but Japanese beetles have become a major problem. Proper planting at a shallow depth is also critical. The marketing apparently has been quite successful because of raising good berries, but doing a good job of advertising by giving newspapers front page stories and creating TV spots definitely helps as well.

Brett Palmier of Edwardsville is raising red raspberries in high tunnels successfully and receives top prices for his fruit by being first and last at the Farmers Markets with consistent quality.

Brad Bergefurd, a researcher at Ohio State University's station near Piketon, Ohio, talked about both matted row and plasticulture strawberry culture. For both cultures he said that excess plant density from runner plants is the crop's worst weed. Matted row berries do best if the winter straw mulch is removed on the early side rather than too late. Fruit set and yield is improved by bees at two hives per acre. All sprays during bloom should be done in the evening so as to reduce any injury to bees. Planning for success includes a three-year crop rotation aimed at weed destruction and soil build-up, and for a 2- to 4-year duration of the planting. Irrigation is a critical component of preventing growth to be retarded by lack of water. For the high investment in plasticulture establishment, he said that production skills, labor management, marketing skills, and weather are key factors for success.

Mohammad Babadoost, University of Illinois plant pathologist, summarized the causes of black root rot in strawberries as fungi, nematodes, winter injury, fertilizer damage, herbicides, drought, soil compaction, soluble salts, high soil moisture, and maybe improper pH of the soil ... and then discussed what to do about it. Strawberry growing is a great sport!

*Chris Doll*

## ***Fruit Production and Pest Management***

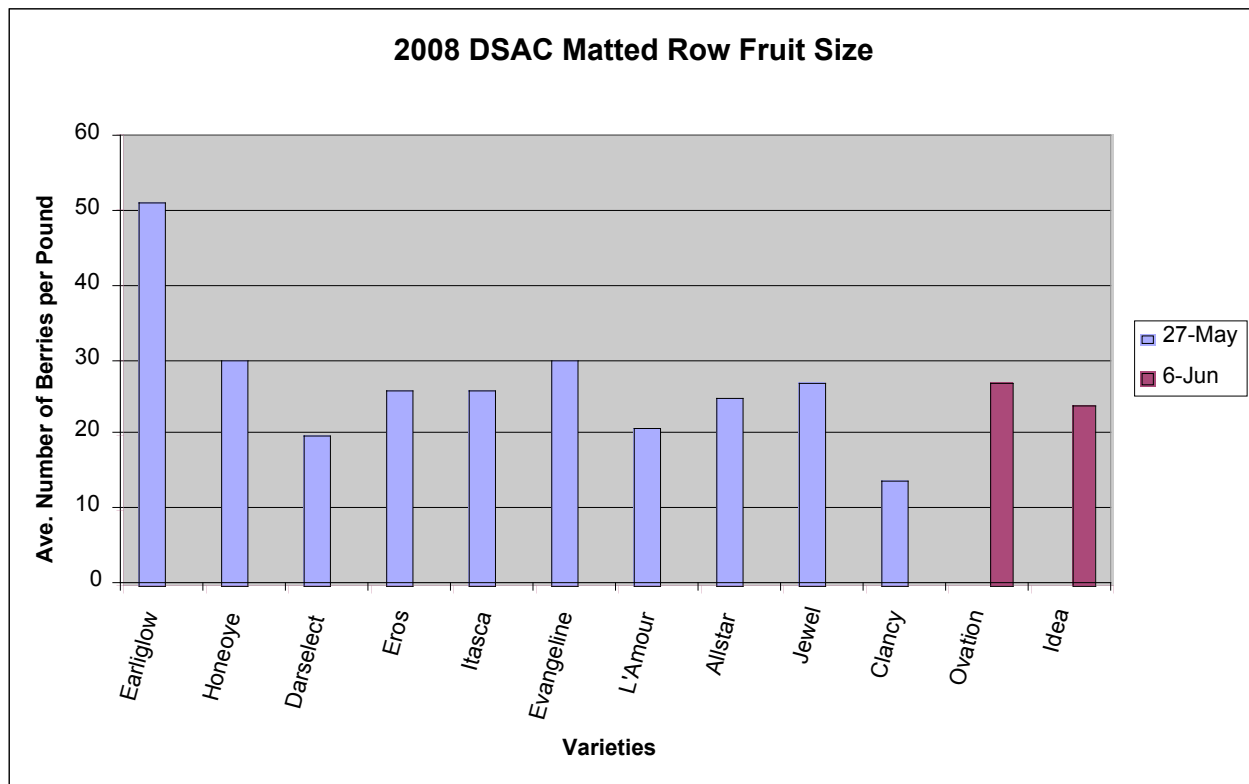
### ***2008 DSAC Matted Row Strawberry Yield Data***

A matted row strawberry variety trial was established at the University of Illinois Dixon Springs Ag Center in April 2007, looking at 12 different varieties. Plants were set with a spacing of two feet between plants and four feet between rows. For the 2008 season, harvest began on May 16 and ended on June 6, 2008. Table 1 lists the varieties by total yield in descending order. Figure 1 provides average fruit size in number of berries per pound.

Table 1. Total yield in pounds per acre for the matted row strawberry varieties trialed at DSAC in 2008.

Variety	Total Yield (lbs/Acre)
Clancy	28,098
Honeyoye	21,346
Itasca	21,019
Darselect	18,296
Earliglow	17,752
Evangeline	14,920
Idea	12,851
Eros	12,415
L'Amour	12,088
Allstar	11,544
Jewel	9,801
Ovation	4,465

Figure 1. Average fruit size for matted row strawberries trialed at DSAC in 2008.



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

## ***2008 DSAC Blackberry Variety Trial***

A blackberry cultivar trial was established at the University of Illinois Dixon Springs Agricultural Center on May 15, 2006. Selections for this trial included experimental varieties from Dr. John Clark, University of Arkansas, as well as two named varieties, *Prime Jim* and *Prime Jan*, donated by Indiana Plant & Berry Company but also originating from Dr. Clark's breeding program. Of the eight selections in this trial, the following four are a thornless, floricanne fruiting type: A-1937, A-2315, A-2215, and *Natchez*. The rest of the selections in the trial are thorny, primocane fruiting types. They include APF 41, APF 40, *Prime Jan*, and *Prime Jim*.

Each variety was replicated twice with six plants per plot. The plants were set three feet apart on raised beds with black plastic mulch and trickle irrigation. Beds were spaced on 12 feet centers. Table 2 provides the average floricanne yields in pounds per acre for each variety. Table 3 provides the average primocane yields in pounds per acre for each variety.

Table 2. Average floricanne yields for the 2008 DSAC blackberry variety trial.

<u>Variety</u>	<u>Total Floricanne Yields</u> (lbs/Acre)
1937	15155.4
A 2215	12523.6
Prime Jim	12414.7
Natchez	12160.6
APF 41	11797.6
Prime Jan	10690.4
A 2315	10672.3
APF 40	4101.9

Table 3. Average primocane yields for the 2008 DSAC blackberry variety trial.

<u>Variety</u>	<u>Total Primocane Yields</u> (lbs/Acre)
Prime Jan	3811.5
APF 40	2613.6
APF 41	1815.0
Prime Jim	907.5

Figure 2. 2008 DSAC blackberry florricane harvest dates (1 lb/plot = 182 lbs/acre).

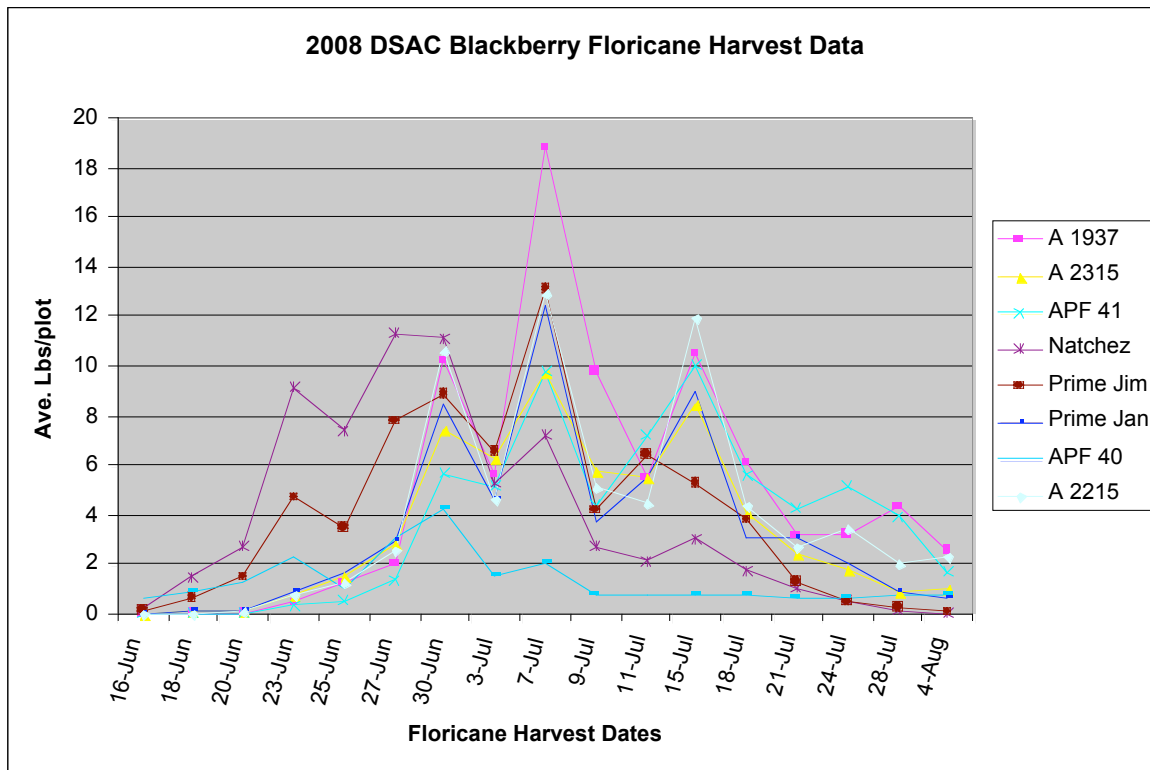
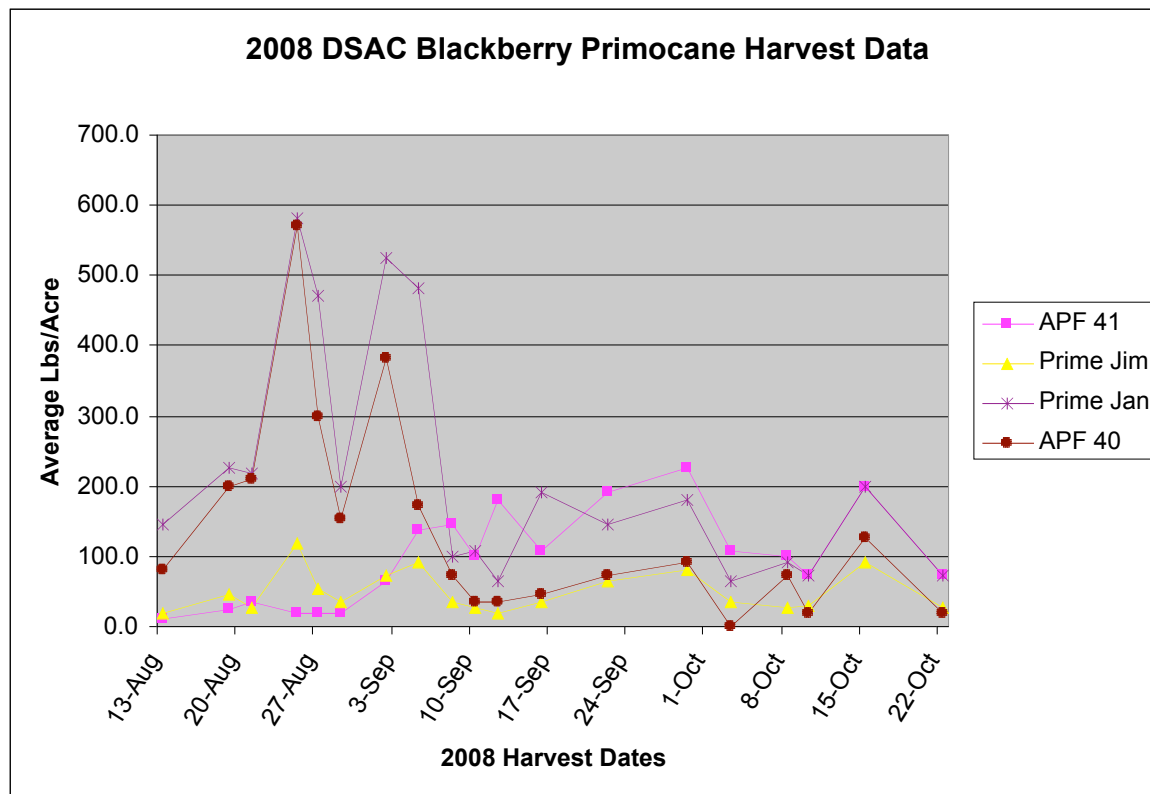


Figure 3. 2008 DSAC blackberry primocane harvest dates.



## ***Notes on Fruit Insects and Insecticides***

Some early-season reminders related to insect management:

- There are several new insecticides labeled for use in grapes, but one of the most noteworthy may be Movento. Movento 2EC is labeled for use post-bloom in grapes at 6-8 oz per acre against the foliar phase of grape phylloxera. It moves systemically in plants – up and down – and limited information from the western US suggests that it may move to roots and give some control of the root phase of phylloxera when used at the 8-oz rate. Movento must be tank-mixed with a spray adjuvant to increase leaf penetration and maximize systemic effectiveness; note label precautions regarding the potential phytotoxicity of various adjuvants and their interactions with other pesticides such as Captan.
- In apples, alternative insecticides that have proven to be very effective in controlling codling moths that are resistant to organophosphates include Assail, Rimon, Altacor, and Radiant.
- In peaches, alternatives to pyrethroids and organophosphates for oriental fruit moth control include mating disruption (Calhoun County growers have used Isomate OFM Rosso very effectively), Altacor, Assail, and Delegate. None of these alternatives controls caftacing insects such as plant bugs or stink bugs, and the use of pyrethroids and orchard ground cover management remain key against these pests.
- I'll not repeat all the recommendations I've offered in previous years on the use of pheromone traps in fruit crops, but you can find that information in the March 8, 2007 issue of this newsletter. It's available online at <http://www.ipm.uiuc.edu/ifvn/volume13/frveg1301.html#fruit>.
- Early-season fruit insects to be watchful for or deal with:
  - eastern flower thrips on strawberries as soon as blossoms begin to open.
  - cutworms and flea beetles on grapes as soon as buds begin to swell and open.
  - European red mite, rosy apple aphid, and San Jose scale on apples ... these pests all are susceptible to control with emulsifiable oils at 1 to 2 percent by volume from green tip through pink.

Rick Weinzierl (217-244-2126; [weinzier@illinois.edu](mailto:weinzier@illinois.edu))

## ***Vegetable Production and Pest Management***

### ***2008-09 Winter Temperatures and Probability of Stewart's Wilt on Sweet Corn***

For nearly 80 years, the occurrence of early-season Stewart's wilt has been predicted based on observations made by Illinois State Natural History Survey scientist N.E. Stevens in the early-1930s. If the average daily temperature for December, January and February is above freezing, many flea beetles survive and Stewart's wilt is likely to be severe on susceptible hybrids. If the average daily temperature for these three months is below 27 F, few flea beetles survive and Stewart's wilt is unlikely to be severe even on susceptible hybrids. Forecasts based on winter temperatures can be used as a "rule of thumb," even though they are not extremely accurate predictors. At least part of the inaccuracy occurs because the forecast does not consider the resistance or susceptibility of the hybrid being grown.

The winter of 2008-09 has been the coldest of this decade (see the table below). Based on the Stevens' forecast, Stewart's wilt is expected to be non-existent or relatively rare except in southern and southwestern Illinois (Carbondale and Belleville, respectively, both south of I-70).

	2008-09							
	Winter			Winter means				
Location	mean	2007-08	2006-07	2005-06	2004-05	2003-04	2002-03	
Dwight	21.9	23.7	25	27.7	28.4	25.5	23.0	
Monmouth	21.6	22.4	25	28.1	29.7	26.5	25.0	
Goodfield	23.9	25.6	25.5	30.1	31.1	28.7	26.4	
Urbana	25.5	27.6	28.7	31.4	31.6	29.3	26.3	
Perry	28.7	28	29.4	32.3	32.5	29.8	27.7	
New Berlin	26.9	28.5	29.9	32.4	33.3	32.2	30.5	
Brownstown	29.8	31.1	32.1	33.1	35	33.7	29.9	
Carbondale	34.3	35.1	36	37.2	38.2	34.7	31.7	
Belleville	33.5	34	36.8	38.4	38.5	36.1	33.6	
mean	<b>27.3</b>	<b>28.4</b>	<b>29.8</b>	<b>32.3</b>	<b>33.1</b>	<b>30.7</b>	<b>28.2</b>	

For the past five years, we've monitored the incidence of Stewart's wilt on sweet corn hybrids with different levels of resistance in order to improve the predictive ability of the winter temperature forecast. Data from those trials for the hybrids 'Jubilee' (susceptible) and 'Bonus' (resistant) are presented below as the 'worse case' and best case' scenarios.

Location	Incidence (%) of seedlings systemically infected by Stewart's wilt												
	Jubilee						Bonus						
	2008	2007	2006	2005**	2004	2003	2008	2007	2006	2005**	2004	2003	
Dwight	0	1	0.6	0**	4.3	0	0	0	0	0	0	0	
Monmouth	0	1	2.8	0**	0.1	0	0	0	0	0	0	0	
Goodfield	0	0.4	0	0**	2.3	0.3	0	0	0	0	0	0	
Urbana	0	2.6	1.3	0**	8.2	3.2	0	0.6	4	0**	1.7	0	
Perry	0	6	1.9	0**	7.7	8.8	0	1.6	0	0**	0.8	0.2	
New Berlin	0	16	0	0**	7.2	10	0	2.7	0	0**	0.6	0	
Brownstown	***	1.2	2.8	0.3	35.9	3.9	0	0.6	0	0	0	0	
Carbondale	0.2	6.8	1.9	1.1	2.3*	7.9	0	0	0	0	0	0	
Belleville	***	8.2	0	2.5	2.1*	5.7	0	0.4	0	0	5.6	0	
				*planted late (after May 15)									
				** near freezing T May 1-4 after planting									
				*** no trial									
processing	If incidence of Stewart's wilt >5%, estimated value of seed treatment is > \$11.7 / A for \$325 / A crops												
fresh	If incidence of Stewart's wilt >1%, estimated value of seed treatment is > \$11.7 / A for \$1625 / A crops												
	<b>Value of seed treatment = crop value x 0.8 x (incidence/100) x 0.9</b>												
	0.8 - estimated efficacy of seed treatments: Poncho, Gaucho, Cruiser												
	0.9 - estimated yield loss from Stewart's wilt (slope coefficients from yield loss regressions)												

Based on previous efficacy studies for seed treatment insecticides (Poncho, Gaucho and Cruiser) and regression models derived from Stewart's wilt yield loss studies, the value of these seed treatment insecticides was estimated to be about \$10-12 per acre when incidence of Stewart's wilt was about 5% on processing crops (valued at \$325 per A), and about \$10-12 per acre when incidence was about 1% on fresh market crops (valued at \$1625 per A). An equation to calculate those estimates is presented in the table above in case you wish to modify any aspect of the estimate.

Based on Stevens' forecast and data from the past six years, it is unlikely that Stewart's wilt will be prevalent in 2009. Stewart's wilt was not prevalent in 2008, so fewer flea beetles were harboring the bacterium in the fall of 2008; and winter temperatures should have reduced the size of the overwintering populations of the insect throughout Illinois



except for the southern and southwestern areas. Thus, incidence of Stewart's wilt on susceptible hybrids, such as 'Jubilee', may be high enough to warrant the use of seed treatment insecticides south of I-70.

Jerald Pataky ([j-pataky@illinois.edu](mailto:j-pataky@illinois.edu))

### ***Less seriously (or not?)***

Pictures worth a thousand words ...



Yes, that's a power cord floating on two flip-flops. Ever heard of the Darwin Awards?



Commitment to a job well done?

***University of Illinois Extension Specialists in Fruit Production and Pest Management***

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

Return Address:

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



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