



UNIVERSITY OF ILLINOIS EXTENSION

College of Agricultural, Consumer, and Environmental Sciences

Illinois Fruit and Vegetable News

Vol. 12, No. 7, May 24, 2006

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, weinzierl@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 email address above.

For your calendar ... June 16, 2006 – Illinois Summer Horticulture Field Day will be held at Boggio's Little Mountain Orchard near Granville, IL; and September 8, 2006 -- Illinois Pumpkin Field Day will be held at the University of Illinois Vegetable Research Farm near Champaign, IL.

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June 16 Field Day Details and Pre-registration Form

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

Regional Updates

In the Southern Region ... Rainfall has been highly variable; it looked like the start of another dry spell until May 10th, when most everyone received significant rainfall. Carbondale reported a 4" rain, whereas the St. Louis area received slightly over an inch. In general it has been fairly cool in the southern region, somewhat slowing the growth of sweet corn and requiring heat in greenhouses with cucurbit transplants. Thinning of peaches continues, both by hand and batting.

Reports of orange rust in blackberries continue to come in. In addition to chemical protectants for uninfected plants (see 2006 Midwest Commercial Small Fruit and Grape Spray Guide for the two critical chemical control periods), Mike Ellis from The Ohio State University provided some additional cultural practices that are critical in controlling the spread of orange rust. Identify and remove infected plants from the planting. For orange rust, it is particularly important to inspect the planting early in the growing season. The planting should be inspected on a routine basis (at least once a week) from the time growth starts in the spring through harvest. New leaves of early spring growth on orange rust-infected plants are chlorotic (yellowish), and shoots are bunched and spindly. They are easy to identify in the spring. It is important that infected plants be identified and removed prior to the development of the "orange rust" pustules on the leaves. If these pustules are allowed to develop, they will produce large numbers of aeciospores which will spread the disease. If infected plants are not removed early in the spring, they become more difficult to identify later in the growing season. In addition, remove wild brambles from areas near the planting. Wild brambles serve as a reservoir for orange rust.

Illinois, Kentucky, Missouri and Tennessee fruit growers are welcomed to the 2006 Mid-Mississippi Valley Orchard Tour beginning at 9:00 a.m. on May 26. (Yes, these are last-minute details for those who receive the newsletter via the web; I

hope those who receive a paper copy by US Mail noted the announcement of this program in the previous issue of this newsletter.) This year, growers will tour two facilities in Dunkin County, Missouri. The first stop will be the orchard of Bader Farms. Bill Bader has developed his operation into the premier peach orchard of the state. He also grows a few apples on his 800+ acres. You won't want to miss the opportunity to visit this orchard and processing facility. The afternoon segment will be a tour of Stewart's Orchard, which is a smaller operation. John Stewart is a long-time peach grower who started his orchard as a retirement project. He grows about 30 cultivars that are selected to ripen from very early to very late in the season. This year's program is strictly a tour—there will be no formal presentations. The tour is designed to give fruit growers an opportunity to see how other growers approach pruning, spraying and orchard maintenance. Participants will also have a chance to visit one-on-one with university Extension specialists and researchers. There is no charge for the program, and the complimentary lunch is being provided by sponsors. This annual event is a joint effort between University of Illinois Extension, University of Kentucky Extension, University of Missouri Extension, University of Tennessee Extension and Missouri State University.

Directions to Bader Farms, Campbell, Missouri, Phone: 573-246-2528. Take I-57 (eastern IL) or I-55 (western IL) to US-60, go west towards Dexter. Take MO-25, south to Malden. Take Business MO-25 into town. Take MO-J, west. Take MO-WW south (follow curves in road). Bader's is on the right side of the road. Stewart's Orchard is just a few miles down the road from Bader Farms. For more details contact Tim Baker, Horticulture Specialist, University of Missouri Extension, Voice: 573-888-4722, Fax: 573-888-6829, E-Mail: BakerT@missouri.edu

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

From the Dixon Springs Agricultural Center ... Harvest of plasticulture strawberries continues, and Chandler continues to bloom. Yields from the best treatments of our strawberry plasticulture study will exceed one pound per plant, which we feel is very good, especially since we lost the first (and in some cases second) cluster due to cold temperatures in April. Peach thinning has been a monumental task and continues in many orchards. Fire blight in apples ranges from severe to moderate on susceptible varieties where growers were not making applications to address the disease. The blueberry crop looks very good at DSAC and appears to be on track for harvest beginning in early June. The warm weather and sunshine experienced in southern Illinois the last several days has resulted in improved appearance and growth of tomatoes and peppers in the area. We remain excited about what we see in high tunnel tomato production. Plant growth and fruit set are unlike anything I have ever seen. As with all new cultural systems, we are learning from some first year mistakes, but the results show more than enough promise to dictate additional research and demonstration projects in coming years.



High-tunnel tomato production in southern Illinois.

Jeff Kindhart (618-695-2444; jkindhar@uiuc.edu)

In northern Illinois ... day temperatures have ranged from the 40s to the low 70s, and night temperatures have been in the upper 30s to low 50s for the period of May 10 to 23. The region received 1-2 inches of rainfall during the same period, and hail was reported in some parts of the region last week. The cool weather and rain showers that occurred most of last week slowed down outdoor farm activities, and most growers are trying to catch up this week.

Apples and pears are in fruit set stage and peach fruits are sizing well. There has been good fruit set in most orchards. Orchardists are going on with apple scab control spray programs, and bud break to bloom sprays are being applied in grapes. Codling moth traps are up in the orchards, and the number of codling moth adult catches has been increasing even in the orchards further north close to Wisconsin border.

In Kankakee County, most growers have planted sweet corn, peppers, green beans, and tomatoes, and planting of vine crops is going on this week. In the areas north of I-80, planting of tomatoes, peppers, and sweet corn is still going on, and it will soon be followed by planting of cucumbers, melons, squash, and pumpkins.

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

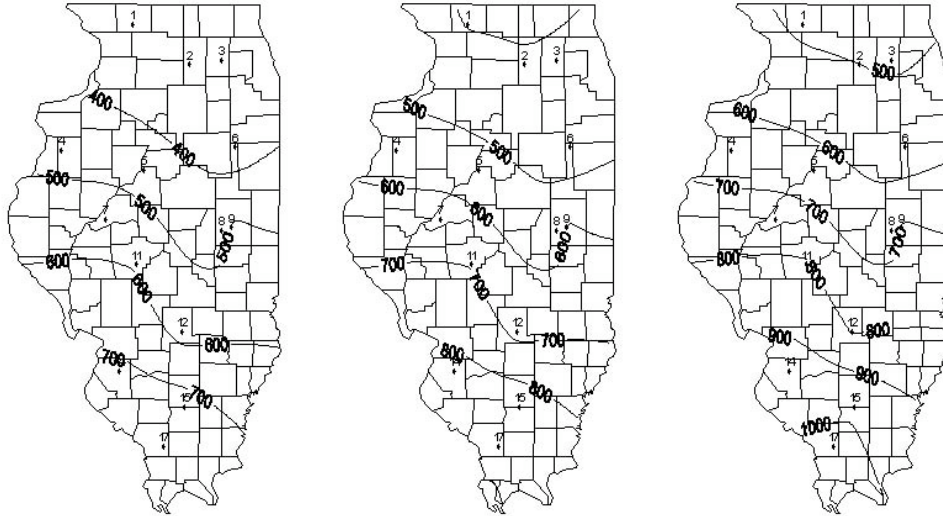
Degree-Days

Degree-day accumulations listed below for weather stations in the Illinois State Water Survey WARM data base have been summarized by using the Degree-Day Calculator site on the University of Illinois IPM site (<http://www.ipm.uiuc.edu/degreedays/index.html>). The list below includes only degree-day accumulations and projections based on a 50-degree F developmental threshold and a January 1 starting date, but other options that use different thresholds and specific biofix dates are available on the Degree-Day Calculator. The degree-day calculator is available as a result of a joint effort of extension entomologists (primarily Kelly Cook) and Bob Scott of the Illinois State Water Survey. If you have questions about how to use the site, contact me or Bob Scott (rwscott1@uiuc.edu).

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

Degree-day accumulations, base 50 degrees F, starting January 1.

| Station | County | Base 50F DD Jan 1 – May 23 Historic Average | Base 50F DD Jan 1 – May 23 2006 | Base 50F DD Jan 1 – May 30 (Projected) | Base 50F DD Jan 1 – June 6 (Projected) |
|-------------------|------------|---|---------------------------------------|--|--|
| 1. Freeport | Stephenson | 455 | 332 | 409 | 499 |
| 2. Dekalb | Dekalb | 502 | 335 | 420 | 515 |
| 3. St. Charles | Kane | 456 | 349 | 421 | 503 |
| 4. Monmouth | Warren | 562 | 475 | 560 | 659 |
| 5. Peoria | Peoria | 602 | 474 | 561 | 663 |
| 6. Stelle | Ford | 548 | Missing | Missing | Missing |
| 7. Kilbourne | Mason | 702 | 568 | 660 | 765 |
| 8. Bondville | Champaign | 632 | 441 | 533 | 638 |
| 9. Champaign | Champaign | 629 | 528 | 623 | 731 |
| 10. Perry | Pike | 663 | Missing | Missing | Missing |
| 11. Springfield | Sangamon | 678 | 607 | 711 | 826 |
| 12. Brownstown | Fayette | 757 | 584 | 693 | 814 |
| 13. Olney | Richland | 751 | Missing | Missing | Missing |
| 14. Belleville | St. Claire | 820 | 733 | 845 | 968 |
| 15. Rend Lake | Jefferson | 866 | 755 | 874 | 1005 |
| 16. Fairfield | Wayne | 822 | Missing | Missing | Missing |
| 17. Carbondale | Jackson | 850 | 796 | 909 | 1034 |
| 18. Dixon Springs | Pope | 894 | Missing | Missing | Missing |



Degree days, base 50 degrees F, since January 1, 2006.

Left: January 1 – May 23; center: January 1 – May 30 (projected); and right: January 1 – June 6 (projected).

Notes from Chris Doll

The closest phenological development to 2005 is my Concord grape, for which early bloom was listed as May 19 for both last year and this year. The recent cool weather has slowed most fruit crop development to be comparable with 2005. Apples have grown through the thinning stages, with Tom Ringhausen having the largest fruit that I have seen. He had a Firmgold that measured 35 mm. on May 18. Peach pit hardening has started, but most varieties have not yet loosened for easy thinning. Strawberry harvest is on-going, with problems of fast maturity, slow maturity, cold and wet picking, and some sunburned fruit when it warmed up.

The heavy set of peaches was a primary subject of the local twilight meeting in Calhoun County last week. Many growers report it to be heaviest ever, as the small fruits are clustered on spurs and roped on shoots. I made a very unscientific extrapolation of fruit number on one of Tom Ringhausen's Redstar trees that had been club thinned. There were 60 peaches per square foot in three sites under the tree, and based on a 10 x 10 canopy area, that would mean that 6000 peaches had been removed. On a smaller scale, two second-leaf trees that I planted on the Governor Stephenson Home grounds in Edwardsville last year had made only average growth but averaged 170 peaches per tree, while 24 fruits were left. (Only a retiree would have the time to do that)

Fruits on the heavily laden trees tend to be pretty small for the season, and need to be knocked off as soon as possible to reduce inter-fruit competition for water and nutrients. Any trees that received only half of the anticipated nitrogen rate also have smaller fruits. It is getting late for full benefit of additional nitrogen, and that would depend upon the rainfall to move it into the soil. Tree color and growth should be the determining factor.

Pest control efforts in visited orchards looks good. The apple diseases are at low ebb except for some light powdery mildew and fire blight infections. It is time for some codling moth egg hatch, but no reports of entries have been received. Locally, we are in the 280-330 DD from the codling moth biofix. The data logger now has recorded 135 wetting hours toward the sooty-blotch and flyspeck target of 175 hours for infection period. Some mildew infections on peaches has been seen, but no bacterial spots have been found. Growers using low rates of copper in the peach sprays should back up to the minimum rate of their copper source to avoid any phytotoxicity. If the peach orchard cover crop is mowed to conserve soil moisture, there is a chance that the tarnished plant bugs will move their feeding zone to the peach trees, in which case an insecticide spray would be needed.

New shoots in black raspberries are now 24-36 inches tall and are ready for tipping at the desired height of 24-30 inches. That will force several lateral shoots which can increase yield of the plants. Some thornless blackberry canes are near the top

wire (60 inches) in my trellis and they too can be pinched at about that height to induce side branching and easier training to the trellis.

Big berries are what most strawberry customers seem to want, and that idea was reiterated again this year. And the bigger philosophy seems to permeate throughout the industry. So as with strawberries, peach growers will have to strive for good fruit size for the majority of consumers. Some of the old data for good fruit size indicates that 30-35 leaves are needed per fruit. The spacing for that many leaves is usually between 8 and 10 inches. Bushels are not used very often any more, but it takes 112 fruits of 2.75-3.0 inch diameter to make a bushel in contrast to 185 if they are only 2.25-2.50 inches.

The new *Southeastern Peach Growers Handbook* contains 300 pages of information on peach production and pest management in the southeastern U.S., as well as some economic data. It contains the basic information on planting, varieties and pest control but does not give much information on the new systems of training or many varieties for this area. However, there are many illustrations and color photos which make it a good handbook. Copies are available for \$50.00 payable to Georgia 4-H Foundation, and sent to Betsy Bridges, Department of Entomology, University of Georgia, Athens, Ga. 30602.

Chris Doll

Fruit Production and Pest Management

Updates on Biofix Dates and Codling Moth Phenology

Based on data provided by Bronwyn Aly at Dixon Springs, Gary Grammer near Murphysboro, Sissy Erbacher of Eckert's Orchard at Belleville, Chris Doll at Edwardsville, Kenny Horn from the University of Illinois orchard at Urbana, Curt Christ near Elmwood, and Ken Hall near Poplar Grove, biofix dates for codling moth are listed in the table below, along with degree-day accumulations and projections for the weather station sites nearest each orchard. (Note that there is no reporting weather station near Edwardsville, so I've used the Brownstown station as the best option.)

| Orchard Location | Weather Station | Codling Moth Biofix Date | DD ₅₀ through May 23 | DD ₅₀ projected through May 30 | DD ₅₀ projected through June 6 |
|-----------------------------|-----------------|--------------------------|---------------------------------|---|---|
| Dixon Springs / Murphysboro | Carbondale | April 17 | 412 | 526 | 654 |
| Belleville | Belleville | April 20 | 352 | 466 | 590 |
| Edwardsville | Brownstown | April 23 | 257 | 367 | 490 |
| Urbana | Champaign | May 1 | 191 | 286 | 397 |
| Elmwood | Peoria | May 6 | 133 | 222 | 326 |
| Poplar Grove | Freeport | May 10 | 82 | 161 | 252 |

Developmental events for the codling moth based on degree-day accumulations are presented below. Remember that **“biofix” refers to the date of the first sustained capture of first-generation moths in traps**. An isolated catch of 1 moth in one of several traps followed by a few days of no captures does not constitute a biofix. On the other hand, traps do **not** have to catch lots of moths to mark a biofix. If traps were checked every 2 days, and the average on May 1 was 1 moth per trap, then on May 3 the average was 1.5 moths per trap, then on May 5, 2 moths per trap, consider the biofix date to be May 1 (or April 30).

Codling moth development:

| | |
|---|-------------------------------------|
| First egg hatch (for first generation larvae) | ~220 DD ₅₀ after biofix |
| 50 percent of first generation moths emerged | ~240 DD ₅₀ after biofix |
| 50 percent of first generation eggs hatched | ~500 DD ₅₀ after biofix |
| 99 percent of first generation eggs hatched | ~920 DD ₅₀ after biofix |
| First moths of second generation emerge | ~900 DD ₅₀ after biofix |
| Beginning of second generation egg hatch | ~1120 DD ₅₀ after biofix |

(Table based on *Orchard Pest Management* by Beers et al., published by Good Fruit Grower, Yakima, WA.)

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

Apple maggot

Apple maggot flies will begin emerging in the northern half of Illinois in a few weeks, and the standard advice is that traps should be hung in early June (June 1-10). Gus Howitt's book on fruit insects in Michigan states that adult emergence begins at 900 degree-days (January 1 starting date), but we sometimes see them a little sooner than that. When flies first emerge from the pupal stage, females are not ready to lay eggs for 8 to 10 days .

To monitor apple maggot, use at least three red sticky traps per block, with traps hung on the outside rows, especially on edges near wooded areas if they are present near the orchard. Traps may be baited or unbaited . . . the lure that is sold for use with apple maggot traps is a food lure often called an "apple volatile" (not a sex pheromone as is used for monitoring moths such as codling moth). The threshold for control based on captures of flies on red sphere traps is 1 fly per unbaited trap or 5 flies per baited trap per week. For the initial capture of the first apple maggot flies of the season, apply an insecticide within 7 or 8 days after the threshold is reached; later in the summer, apply an insecticide immediately after traps catch the threshold number of flies. Guthion and Imidan are very effective against apple maggot, as is Asana. Assail and Calypso are effective as well, though their labels call for higher rates against apple maggot than against codling moth. For organic growers, control options include the use of numerous traps (3 per dwarf or semi-dwarf tree) to "trap out" flies and thereby reduce egg-laying or the use of Entrust, an OMRI-listed insecticide that is rated as "fair" against apple maggot.



Top: apple maggot adults and larvae. Bottom: apple maggot trap.

Dogwood borer

Sissy Erbacher's reports of counts from traps at Eckert's orchard near Belleville show the beginning of the flight period for dogwood borer moths ("clearwing" moths that resemble small wasps) there. A couple of notes to consider: (1) If you use traps for this insect, hang them at a height of 4 feet; placing them too high or too low reduces captures, giving inaccurate

results. (2) This insect tunnels into dwarf apple trees at the burr knot that develops at the graft union; where plastic tree guards are wrapped around trees, they keep the bark moist and more favorable for dogwood borer survival and damage. To control dogwood borer, trunk sprays of Lorsban 50W are recommended. Use 3 lbs per 100 gallon, and spray at the time of peak egg hatch – mid June to mid July, depending on location within Illinois. Lorsban 50W may be used after bloom only as a trunk spray; do not apply it to fruits or foliage, and do not make trunk sprays within 28 days of harvest.



Dogwood borer adult (left) and larva in burr knot (right).
(Photos from Cornell University and Virginia Tech.)

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

Vegetable Production and Pest Management

Thrips in onions

A grower in northern Illinois recently noted large numbers of thrips in an area adjacent to a wheat field. Onion thrips overwinter in wheat and other small grains and move to onions and other crops when the small grains dry down and are harvested. Although it's a little early to talking about wheat drying down or being harvested in northern Illinois, it appears that some movement from small grains is underway ... or perhaps the thrips observed by this grower were another species, such as eastern flower thrips, a migrant from the south. Several species of thrips feed on onions, garlic, leeks, and shallots. Thresholds vary according to tolerance levels in specific cultivars of onions and related crops. Highly susceptible cultivars have a low threshold – 15 per plant; tolerant cultivars have a higher threshold – 35 per plant. Insecticides that are most effective against thrips in onions and related crops include Ammo, Mustang Max, and Warrior. Warrior is labeled for use only on dry bulb onions; Ammo and Mustang Max may be used dry bulb onions, green onions, garlic, leeks, etc. (all the bulb vegetables).



Onion thrips and damage to onion foliage. (Photos from Cornell University and the University of Minnesota.)

Words of Wisdom

These are the unavoidable laws of the natural universe...

1. Law of Mechanical Repair: After your hands become coated with grease your nose will begin to itch or you'll have to pee.
2. Law of the Workshop: Any tool, when dropped, will roll to the least accessible corner.
3. Law of probability: The probability of being watched is directly proportional to the stupidity of your act.
4. Law of the Telephone: When you dial a wrong number, you never get a busy signal.
5. Law of the Alibi: If you tell the boss you were late for work because you had a flat tire, the very next morning you will have a flat tire.
6. Variation Law: If you change lines (or traffic lanes), the one you were in will start to move faster than the one you are in now. (works every time).
7. Bath Theorem: When the body is fully immersed in water, the telephone rings.
8. Law of Close Encounters: The probability of meeting someone you know increases when you are with someone you don't want to be seen with.
9. Law of the Result: When you try to prove to someone that a machine won't work, it will.
10. Law of Biomechanics: The severity of the itch is inversely proportional to the reach.
11. Theater Rule: At any event, the people whose seats are furthest from the aisle arrive last.
12. Law of Coffee: As soon as you sit down to a cup of hot coffee, your boss will ask you to do something which will last until the coffee is cold.
13. Murphy's Law of Lockers: If there are only two people in a locker room, they will have adjacent lockers.
14. Law of Dirty Rugs/Carpets: The chances of an open-faced jelly sandwich of landing face down on a floor covering are directly correlated to the newness, color and cost of the carpet/rug.
15. Law of Location: No matter where you go, there you are.
16. Law of Logical Argument: Anything is possible if you don't know what you are talking about.
17. Brown's Law: If the shoe fits, it's ugly.
18. Oliver's Law: A closed mouth gathers no feet.
19. Wilson's Law: As soon as you find a product that you really like, they will stop making it.



Horticulture Field Day

sponsored by the
Illinois State Horticultural Society

Friday, June 16, 2006

Boggio's Orchard — Ill Route 71, Granville, Illinois, 61326, 815/339-2460

Boggio's Orchard is located in Granville, Illinois, approximately twelve miles southwest of LaSalle. Fourteen acres of orchard include 17 apple varieties, pears, apricots, sweet cherries, and plums. Vegetable crops sold through the market and to the wholesale trade include: sweet corn (40 A), tomatoes, peppers, and pumpkins (40 A). Keith and Denise Boggio operate an in-house bakery for pies, pumpkin donuts, breads and fudge, plus cider. Branded items include jams, jellies, and canned fruit and vegetables. Amish cheeses and products were added last year to expand the range of items available for sale. Visits by families and school children include such activities as a petting zoo, corn maze, pony rides, pedal cars, wagon rides and the Annual Pumpkin Harvest Craft Show. Additional tour locations to visit in the area include the Mid American Growers greenhouses (40 A), Illinois' largest wholesale greenhouse operation, and August Hill Vineyard.

Tentative Agenda

8:00 – 8:30 a.m. Registration

8:30 – 8:45 a.m. Welcome and Introduction

8:45 am – 12:00 p.m. Field Tours (Walking-Wagon-Tours)

Apple Orchard Fruit thinning and Apogee for management of tree growth (**Mosbah Kushad**)
Codling moth management updates (**Rick Weinzierl**)
Summer diseases and fire blight management (Mohammad Babadoost)
When to irrigate tree fruits (Maurice Ogutu)

Stone Fruit Insects in stone fruits (**Rick Weinzierl**)
Black knot and other diseases of stone fruits (**Mohammad Babadoost**)

Pumpkins Pumpkin production (**Alan Walters, Bill Shoemaker**)
Cucurbit pest management
(**Mohammad Babadoost, Rick Weinzierl, and Elizabeth Wahle**)

Tomatoes Production practices for tomato and pepper (**Bill Shoemaker**)

12:00 – 2:00 p.m. Lunch and Lunch-Time Presentations

Presentations Exhibitors comments (**Don Naylor**)
ISHS President's comment (**Dennis Ringhausen**)
Fruit and vegetable industries in northern Illinois (**Extension Specialists**)

2:00 p.m. - Touring the Mid American Growers and August Hill Winery

For additional information on presentations, contact M. Babadoost phone: 217-333-1523; email: babadoos@uiuc.edu.

Registration: Pre-registration is \$20 per person or \$25 at the door. Advance reservations are appreciated. Please pre-register by June 13. On-site registration begins at 8:00 a.m. Children are free.

Directions: Boggio's Apple Orchard is located in Granville about fifteen minutes southwest of LaSalle on Illinois State Route 71.

More Information: Several hotels are in the area. For a list of hotels or more information contact: Don H. Naylor, Executive Secretary at 15962 Old Orchard Road, Bloomington, IL 61704, telephone 309/828-8929, email: ilsthortsoc@yahoo.com or FAX 270/682-3892.

Sponsored by: The Illinois State Horticultural Society, the University of Illinois, Southern Illinois University, and The Illinois Specialty Growers Association.

Advance Registration Form
2006 ISHS Summer Field Day • Boggio's Orchard • Friday, June 16, 2006

Enclosed is \$ _____ for _____ reservations for the field day (\$20/person, \$25 on-site, children free)

Name of orchard or farm: _____

Names of attendees: _____

children _____

Address: _____

Email: _____

Telephone: _____

Send to: I.S.H.S., 15962 Old Orchard Rd., Bloomington, IL 61704 to arrive by June 13.

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