

VEGETABLE CROPS HOTLINE

A newsletter for commercial vegetable growers prepared by the Purdue University Cooperative Extension Service

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JOE HUBER, FROM *THE COURIER-JOURNAL*, LOUISVILLE, KY - Joe Huber, whose pioneering you-pick farm business transformed Starlight, IN into an agri-tourist mecca, died March 10 at Baptist Hospital East in Louisville. He was 74.

Huber died of complications from an infection after battling cancer.

Huber is survived by his wife and long-time partner in business, Bonnie, his five children and 12 grandchildren.

The Huber family business includes a 260-acre farm, a market and gift shop, and two large barns for serving buffet-style company picnics.

Huber was the fifth of eleven children born to German descendants who'd settled the scenic community atop the knobs in western Clark County.

He milked cows and worked his parents' farm. At 17, his father chose him as manager.

He passed up a full scholarship to Purdue University, where he hoped to study agriculture after his father Joe Sr. told him that he needed "Junior" at home to work when an older brother left to serve during the Korean War.

The couple's children took the reins of the business 12 years ago, and oversee 140 employees during the fall busy season.

Huber said then that he's proud that all five of his children have a vested interest in the business, which should survive as a family-owned enterprise in Starlight for years to come. "It's been a good life," Huber said.

Visitation for Huber will be from 4 to 8pm Wednesday and 1 to 8pm Thursday at Kraft Funeral Service, 708 E. Spring St in New Albany. There will be a prayer service at 1 p.m. Thursday at the funeral home.

Huber's Funeral Mass will be held at 11 a.m. Friday at St. John the Baptist Catholic Church, with burial to follow in the church cemetery.

The family requests expressions of sympathy be made to the Crusade for Children, St. Elizabeth Home of Southern Indiana or the American Cancer Society <www.cancer.org/>.

All of us at Purdue extend our sympathies to the Huber family. Joe was a trailblazer in the Indiana agri-tourism industry and was a truly inspiring person.

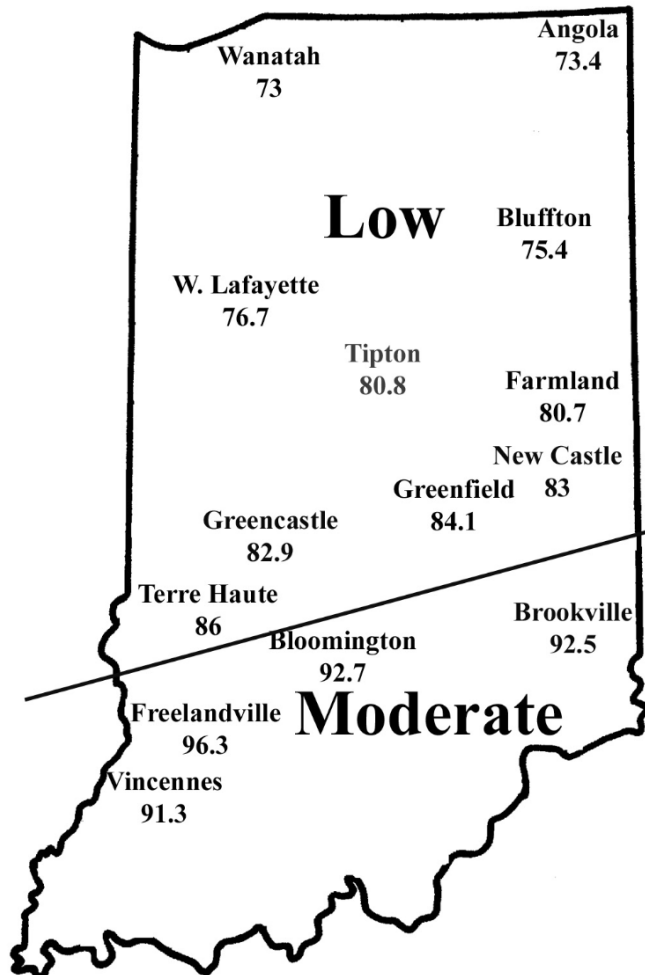
WINTER TEMPERATURES, CORN FLEA BEETLE SURVIVAL, AND POTENTIAL FOR STEWART'S WILT - (*Rick Foster, Dan Egel and John Obermeyer*) - Corn flea beetle is a sporadic pest in Indiana. Winter temperatures in regions where beetles were abundant last season will determine if there is cause to be concerned this season. This is especially important since this insect can transmit the bacteria that cause Stewart's wilt in sweet corn. The severity of the disease correlates well with winter temperatures because the bacterium survives in the gut of the overwintering beetles. Warmer temperatures result in higher beetle survival, and greater potential for Stewart's wilt. To determine the potential severity of Stewart's disease, add the average daily temperatures for the months of December, January, and February. If the sum is below 90, the potential for disease problems to develop is low. If between 90 and 100, moderate disease activity is a possibility. Sums above 100 indicate a high probability that severe problems will develop for susceptible corn. To help you better gauge the potential for corn flea beetle activity in your area, and thus the potential severity of the threat of the disease, we have created the following state map. According to the temperature model, there is low probability of corn flea beetle activity and subsequent disease in most of the state, north of a line from Terre Haute to around Farmland. Susceptible varieties of sweet corn grown below that line have a moderate chance of developing Stewart's wilt. This year, according to the model, no areas of Indiana have a high probability of developing problems with Stewart's wilt.

This temperature model for corn flea beetle has been around many years and has been fairly accurate in predicting the activity of this pest the following spring. However one inherent flaw is that the model is based on ambient air temperatures, not temperatures under leaf litter and grass clumps where this pest overwinters. Also, snow cover, which can provide an excellent insulating blanket for the insect, may protect some beetles

from winter kill. Even with this “disclaimer” statement, we think the 2007/2008 winter was cold enough to have negatively impacted overwintering beetles in most of Indiana. Also, flea beetle numbers have been low statewide, in general, for the last couple years.

There are two phases of Stewart’s wilt: a wilt phase and a leaf blight phase. In the wilt phase, plants wilt rapidly, usually at an early stage of growth. Leaves emerging from the whorl of infected plants are often the first to wilt. Internal tissues at the growing point are discolored or hollowed out. Faint green to yellow streaks containing corn flea beetle feeding marks are visible on one or more leaves. If stalks of wilted plants are cut, it may be possible to see yellow, moist beads of bacterial ooze. The leaf blight phase can occur at any time during the growing season, but often does not appear until after tasseling. Lesions are long and narrow, with pale green to yellow streaks and irregular or wavy-margins. Streaked areas die and become straw-colored. Severely infected leaves may die prematurely. Lesions on leaves of older plants may be confused with northern corn leaf blight. It is usually possible to see beetle feeding tracks in Stewart’s wilt lesions.

Sweet corn growers should choose varieties that are resistant if they are growing in high risk areas. See the Table 2 for a list of varieties with high levels of resistance to Stewarts wilt. In areas with a moderate or high risk for



flea beetles and Stewart’s wilt, growers should consider planting the varieties on this list if they meet the desires of your customers.

In areas where the risk of disease is moderate or low, growers may want to purchase sweet corn seed that has been treated with either Cruiser or Poncho. These systemic insecticides will provide good control of flea beetles and Stewart’s wilt in the early growth stages. The low rate can be expected to provide protection up to the 2-leaf stage and the high rate should work until the 5-leaf stage.

If treated seed are not used in moderate or high risk areas, growers should scout fields and treat with an appropriate foliar insecticide if damage and flea beetles are noticed. Recommended products include Ambush, Pounce, Asana, Capture/Brigade, Lannate, Lorsban, Mustang Max, PennCap-M, Sevin XLR, and Warrior.

Table 1. Mean winter temperatures and threat of Stewart’s wilt.

Site	Dec.	Jan.	Feb.	Sum	Disease Threat
Angola	26.5	25.5	21.4	73.4	Low
Wanatah	27	24	22	73	Low
Bluffton	25.5	26	23.9	75.4	Low
W. Lafayette	27.5	27	22.2	76.7	Low
Tipton	28.5	27	25.3	80.8	Low
Farmland	30	26.5	24.2	80.7	Low
Greenfield	31.5	28.5	24.1	84.1	Low
Greencastle	31.5	28	23.4	82.9	Low
Terre Haute	31.5	27	27.5	86	Low
New Castle	30.5	26.9	25.6	83	Low
Brookville	34.5	29	29	92.5	Moderate
Bloomington	33.5	30	29.2	92.7	Moderate
Freelandville	35	31	30.3	96.3	Moderate
Vincennes	32.5	29.5	29.3	91.3	Moderate

Table 2. Sweet corn hybrids with high levels of resistance to Stewarts wilt.

Sugary Enhancer Hybrids		
Yellow	White	Bicolor
El Toro	Denali	Ambrosia
	HMX 7367	Synergy
Shrunken-2 Hybrids		
Yellow	White	Bicolor
Garrison		Mirai 334
Shogun		BSS 1693
		Holiday
		BC503

DISEASE RESISTANCE IN VEGETABLES - (Dan Egel) - In a perfect world, every variety of vegetable would have complete resistance to all diseases and that resistance would last forever. Such is not the case. Disease resistance in vegetables is available, generally, in one of two situations:

The first situation is that resistance is complete. That is, no or insignificant symptoms are visible on the host plant. However, this resistance will not last forever. Fungi and bacteria can mutate and change to forms that overcome host resistance. This is the reason that races of pathogens develop. These races develop to overcome the resistance of the host. So, in selecting a host for resistance, it pays to know what races of the pathogen are important in your area.

The second situation is that resistance is incomplete (partial resistance). In this case, symptoms occur on the host plant. However, the symptoms are less than those that occur in a completely susceptible variety. Most importantly, yields in varieties with partial resistance are improved over varieties that have no resistance. Resistance of this type ranges considerably from variety to variety. Another name for partial resistance is tolerance. For varieties with partial resistance, it may be necessary to apply fungicides or bactericides and follow all the cultural controls for that particular disease. In some cases it may be possible to apply fewer fungicide applications for these varieties.

The table below has information on several vegetable diseases and the resistance situation for each.

Host	Disease	Resistance	Comments
Cabbage	Fusarium yellows	Partial	Type A resistance is complete. Type B resistance is active only up to 77° F.
Muskmelon	Powdery mildew (Fig. 1)	Complete	Resistance to breakdown reported in some parts of the US.
Pepper	Bacterial spot	Complete	Races of the pathogen exist; the race in your area may change from year to year.
	Phytophthora	Partial	Only bell peppers have any resistance
Pumpkin	Powdery mildew	Partial	Amount of resistance depends in part on whether both parents had resistance.
Sweet corn	Stewart's wilt	Partial	See < www.sweetcorn.uiuc.edu > for hybrids with resistance. Flea beetles transmit disease.
Tomato	Bacterial spot	Partial	All varieties are susceptible; however, some varieties are more susceptible than others according to Purdue University research. To find out more about this research see the Midwest Vegetable Trial Report for 2007 < www.hort.purdue.edu/fruitveg/rep_pres/2007-8/CD/Start.pdf >.
	Early blight	Partial	
	Fusarium wilt	Complete	Good resistance available.
	Rot knot	Complete	Good resistance available.
	Verticillium	Complete	Good resistance available.
Watermelon	Anthrachnose	Complete	Resistance only available to race 1. Race 2 causes most problems in Indiana.
	Fusarium wilt (Fig. 2)	Partial	See Midwest Vegetable Production Guide for list of varieties with partial resistance < www.btny.purdue.edu/Pubs/ID/ID-56/ >.



Fig. 1 : A muskmelon variety susceptible to powdery mildew. Resistant varieties have no detectable symptoms. (Photo by Dan Egel)



Fig. 2: A watermelon trial in which varieties exhibit a range of resistance to Fusarium wilt. (Photo by Dan Egel)

NEW PUBLICATIONS - (Announcements) - Midwest Vegetable Trial Report for 2007. Reports of vegetable trials from the Midwest and Northeast are published in the Midwest Vegetable Trial Report for 2007. The publication may be purchased in book <<https://secure.agricul->

[ture.purdue.edu/store/item.asp?itemID=18403](http://www.purdue.edu/store/item.asp?itemID=18403)> or CD <<https://secure.agriculture.purdue.edu/store/item.asp?itemID=18404>> format from Purdue Media Distribution. The full report or individual reports are also available online at <www.hort.purdue.edu/fruitveg/reports.shtml>.

Sweet Corn Hybrid Tolerance Ratings from University of Wisconsin. This publication rates the tolerance of over 130 sweet corn varieties to postemergence applications of the herbicides Accent and Callisto. The table is based on 3 years of field trials at multiple locations across the US. Ratings range from highly sensitive to tolerant. Herbicide use recommendations are included. Growers planning to use either of these herbicides will find this publication useful. Download a pdf file from <<http://ipcm.wisc.edu/Publications/tabid/54/Default.aspx>>.

USDA's Agricultural Marketing Service has released new grade standards for cantaloupe, effective March 10, 2008. In the new standards there is no grade of 'unclassified' and the rules for application of tolerances have been changed. The new standards are available on line at <www.ams.usda.gov/standards/vegfm.htm>.

UPCOMING EVENTS - (Announcements) - Marketing Made Easy, A Workshop for Direct Market Farmers. March 18, 8:30-3:30 Eastern Time, Plymouth, IN. Please register in advance. Cost is only \$20 and you receive a \$50 sign for your farm--you come out \$30 ahead! Contact Kelly Easterday at (574) 372-2340 or keasterday@purdue.edu.

Introduction to Hoophouse/High Tunnel Program. March 20, 7-9:30pm Eastern Time/6-8:30pm Central Time. Viewing locations in County Extension Offices in Hendricks, LaGrange, Monroe, and Pulaski Counties and at Pfendler Hall Room 241 on Purdue West Lafayette

ette Campus. Please contact Extension Office or Jerry Nelson (812) 886-9582, jnelson@purdue.edu to register. To view live streaming video the night of the program, go to <mms://video.dis.purdue.edu/agcomm>. Handouts and streaming video archive of the program will be available at <<http://tristateorganic.info>>.

Operating An Efficient Farmers' Market: A Workshop for Market Masters and Vendors. April 11, 8am-12:30pm Central Time. Lake County Extension Office, Crown Point. This workshop offers an overview of state regulations for food handling, updates on the WIC program, and results of a Farmers' Market Survey and a Farmers' Market Pricing Study. Cost is \$25. Contact Brad Clinehens, (219) 755-3240, bclinehens@purdue.edu.

MarketMaker: Marketing 101.

- **March 17,** Dubois County Area Development Corporation in Jasper, IN. Margie Zoglmann (812) 547-7084 mzoglmann@purdue.edu.
- **March 24,** Crawfordsville. Maria Marshall, (765) 494-4268, mimarsha@purdue.edu.
- **March 31,** 6-8pm Central Time, Pinney-Purdue Ag Center, Wanatah. Register with Kris Parker, (219) 465-3555, parkerkj@purdue.edu.

2008 Indiana Farm Sustainability Tours. For more information contact Jerry Nelson, (812) 886-9582, jnelson@purdue.edu. Register online at <www.conf.purdue.edu/FARMTOURS>.

- **March 20.** Value Added Processing: Ohio River Valley Food Venture, Jennings Co. Growers Meat Market, Thomas Winery, Satterfield Farms, Leane and Michael's Sugarbush.
- **April 17.** Extending the Season of Production and Availability for Local Foods: Cooley Family Farms, Juniper Spoon, Seldom Seen Farm, Two Cookin' Sisters.

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