VEGETABLE CROPS HOTLINE

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

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FARM SUSTAINABILITY TOURS - *(Jerry Nelson)* - The Indiana Farm Sustainability tours will be held from 10 a.m. to 3 p.m. the third Thursday of each month with the exception of August. Due to the Indiana State Fair, the tour will be the fourth Thursday of August.

Future tour dates are listed below:

* May 17; "Farm Business Structures"; Cook's Bison Ranch of Wolcottville and Gunthorps' Pastured Pork and Poultry of LaGrange.
* June 21; "Urban Fringe Marketing: Meeting the Needs of the Urban Consumer"; Tuttle's Orchard and Farm Market of Greenfield.
* July 19; "Organic Production and Marketing" Bloomingfoods, Stranger's Hill Organic Farm and Bloomington Farmers' Market, all of Bloomington.
* Aug. 23; "Agritourism: Enhancing the Visitor's Experience"; Traders Point Creamery of Zionsville.
* Sept. 20; "Family Farming: Keeping the Family in the Family Farm"; Swiss Connection Cheese of Clay City and Moody Meats of Ladoga.
* Oct. 18; "Specialty-Marketing Partnerships"; Birky Family Farms, Valparaiso Farmers' Market and Crème de la Crop CSA, all of Valparaiso.
* Nov. 15; "Food Trends, a Look at Consumer Food Expectations and How We Can Meet Them"; Purdue Food Science facilities of West Lafayette.

For more information and to register, visit <www.conf.purdue.edu/farmtours>. Each tour is $15 per person, which includes lunch, refreshments and materials. Individuals have the option to register for all of the tours or to select one or two at a time. Registration is due seven days prior to a tour.

The 2007 Indiana Farm Sustainability Tours are sponsored by the Purdue Small Farms Team, the Purdue New Ventures Team, Indiana State Department of Agriculture (ISDA) and the North Central Region Sustainable Agriculture Research and Education (NCRSARE).

For questions and more information, please contact Jerry Nelson, New Ventures Extension educator and tour coordinator, at (812) 886-9582 or jnelson@purdue.edu or Roy Ballard at (317) 462-1113 or rballard@purdue.edu.

PURDUE RESOURCES HELP FARMERS WITH ARTHRITIS - *(Olivia Maddox)* - Most people look at farming as being a healthy occupation, where farmers are outside and doing a lot of work. But according to a Purdue University expert, farming is an occupation that has a lot of repetitive types of activities, which can have an especially disabling effect on farmers and ranchers.

"About one-third of all farmers in this country have some form of arthritis that keeps them from doing the daily chores they would like to do because of either stiffness or pain in the joints," said Bill Field, Purdue Extension safety specialist. "It's the kind of thing that prevents them from being comfortable in doing some of the work they would like to do."

May is National Arthritis Awareness Month, which strives for increased awareness and understanding of arthritis.

Purdue Extension, Purdue's Breaking New Ground Resource Center and the Arthritis Foundation, Indiana Chapter, have teamed up to produce "Gaining Ground on Arthritis: Managing Arthritis in the Agricultural Workplace," an educational DVD to help people understand arthritis and to provide practical tips on protecting joints, managing stress and modifying work practices through special tools and other devices.

"As we became more acquainted with farmers, we saw how difficult it was for some of them to keep working and to stay active longer in their life," Field said. "We felt it was important to take on that task of educating farmers about arthritis issues and then trying to come up with some adaptive aids or solutions that reduce the stress on their joints and make it easier for them to work."

Mike Williams, a Daviess County farmer, who has three different types of arthritis, credits Breaking New Ground's Outreach Program and the state's Vocational Rehabilitation program with making it possible for him to continue farming.

"Steps on the tractors make it a lot easier to get on because we have mostly older equipment," Williams said. "The Mule (utility vehicle) has been a tremendous help. It enables me to go to the barn and pick up parts and come back out here and work on different things. These devices make my job easier to where I can still get out there and still work. We didn't realize anything like this existed. It was a total surprise to us."

Williams has worked on a family farm his entire life.

"I was always big and strong and could carry four buckets of water at a time," said the 61-year-old Williams. "But the years of hard work has taken a toll on my joints." Williams encourages farmers, such as his son Kyle, to adopt practices explained in the DVD as preventive measures while they are still young and healthy.

The DVD will premiere at a fund-raiser for the Arthritis Foundation from 6-8 p.m. May 11 at the Presbyterian Church, 5434 W. Indiana 26, Rossville, Ind. The DVD was filmed largely in Rossville and surrounding areas. The event, which includes dinner, costs $10 for the meal. All proceeds go to the Arthritis Foundation, Indiana Chapter to help distribute the DVD to farmers throughout Indiana. Call (800) 825-4264 or (765) 494-1221 for reservations.

The "Gaining Ground on Arthritis" DVD costs $25, with discounts available for bulk orders. Order online at the Purdue Extension Education Store <www.ces.purdue.edu/new> or from the Arthritis Foundation, Indiana Chapter, (317) 879-0321.

Black Cutworms - *(Rick Foster)* - Black cutworms (Figure 1) are the most important of the cutworm species attacking sweet corn. They do not overwinter this far north, so we like to monitor their flight activity with

Figure 1: Various instars of black cutworm larvae. *(Photo by John Obermeyer)*

pheromone traps to know when they arrive from the South each spring. Currently we have 38 traps being monitored around the state, so that gives us a pretty good idea of what is going on. Keep in mind that trap catches can be highly variable, so don't just look at the trap closest to you. Look at all trap catches from your area of the state to get an idea of what is happening.

Black Cutworm Adult Pheromone Trap Catches

County (Cooperator/Company)	4/19-25/07	4/26-5/2/07
Adam Roe (Mercer/Landmark)	7	4
Allen (Gynn/Southwind Farms)	2	2
Benton (Babcock/Ceres Solutions)	0	3
Benton (Babcock/Ceres Solutions)	0	0
Clay (Bower/Ceres Solutions, Brazil)	1	0
Clay (Bower/Ceres Solutions, Clay City)	5	
Clinton (Foster/Purdue Entomology)	9	16*
Daviess (Venard/ Venard Agri Consulting)	1	0
Elkhart (Kauffman/Crop Tech)	2	3
Fultonb (Jenkins/ Fulton-Marshall Co-op)	3	0
Gibson (Hirsch/ Hirsch Family Farms)	5	
Greene (Byarley/ Pioneer Hi-Bred)	0	4
Hamilton (Beamer/ Beck's Hybrids)	13	4*
Jennings (Biehle/SEPAC)	0	2
Knox (Bower/Ceres Solutions, Freelandville)	1	6
Knox (Bower/Ceres Solutions, Fritchton)	3	4
Knox (Bower/Ceres Solutions Oaktown)	2	0
Lake (Kleine/Kleine Farms)	3	0
Marshall (Barry/ Fulton-Marshall Co-op)	5	3
Marshall (Misch/Pioneer Hi-Bred)	0	1
Miami (Sweeten/ Advanced Ag Solutions)	0	1
Newton (Ritter/Purdue CES)	0	5
Newton (Babcock/Ceres Solutions)	0	1
Porter (Hutson/Purdue CES)	0	2
Putnam (Nicholson /Nicholson Consulting)	0	0

Randolph (Boyer/DPAC)	0	7
Rush (Doerstler/Pioneer Hi-Bred)	5	8
Shelby (Gabbard/Purdue CES)	0	0
Starke (Wikert/ Wickert Agronomy Services)	0	5
Sullivan (Bower/ Ceres Solutions, Sullivan W)	7	3
Sullivan (Bower/ Ceres Solutions, Sullivan E)	14*	4
Sullivan (Bower/ Ceres Sol., New Lebanon)	1	1
Tippecanoe (Krupke/ Purdue Entomology)	1	7
Tippecanoe (Obermeyer/ Purdue Entomology	3	15*
Tipton (Johnson/Pioneer Hi-Bred)	0	16*
Warren (Mroczkiewicz/Syngenta)	0	0
White (Reynolds/ ConAgra Snak Foods)	7	0
Whitley (Walker/NEPAC)	3	6

*Intensive capture (this occurs when 9 or more moths are caught over a 2-night period).

You can expect to see the first cutting of corn plants when 300-350 degree days (Base 50) have been accumulated since your first intensive moth (Figure 2) catch (9 or more moths over 2 nights). You calculate degree days by taking the average temperature for the day (high + low/2) and subtracting 50. For example if the low is 60 and the high is 80, the average temperature is 70 (60 + 80 = 140;140/2 = 70) and then subtracting 50 you get 20 degree days for that day. Add the degree days for each day since the significant moth flight and when you reach 300, you should start checking your sweet corn fields for cutworm damage. Don't just routinely treat, because cutworm damage is notoriously spotty. If you scout your fields and find 2% of the plants cut (Figure 3), then treatment will pay for itself. Appropriate insecticides would include Ambush/Pounce, Asana, Baythroid, Capture, Lorsban, Mustang Max, and Warrior. Treated seed will not provide sufficient protection from damaging populations of black cutworms.

Figure 2: Male black cutworm moth. Note the black dagger shape on the wing. *(Photo by John Obermeyer)*

Figure 3: Example of black cutworm damage to corn. *(Photo by John Obermeyer)*

Five Tips for Successful Transplant Establishment - *(Liz Maynard)* - Transplanting of processing tomatoes has begun in Northern Indiana; other warm season crops will not be far behind. Getting the transplants off to a good start is important for a successful crop. The five items below cover some of the common threats to transplant establishment.

1. Harden transplants by gradually exposing them to higher light, cooler temperature, and slightly drier conditions than during transplant production. One goal of hardening is to slow growth of the seedlings and increase their stored energy. A second aim is to acclimate the plants to the field environment. A properly hardened plant will recover from the stresses of transplanting more quickly and begin to grow sooner than a plant that has not been hardened.
2. Make sure there is moisture under plastic mulch. Apply plastic mulch over soil that is moist. If mulch is applied over dry soil, it is difficult to fully wet the future root zone of the crop.
3. Apply water to transplants after seeding, and, especially in cool weather, include starter fertilizer. Water applied at transplanting helps to settle soil around the root ball and provides roots readily available water. A starter fertilizer in the transplant solution assures nutrients are available in the root zone of the young plant. If using a starter fertilizer, take care to mix it at the rate recommended for transplants and make sure the fertilizer is completely dissolved and well mixed in the tank. High concentrations of fertilizer can injure and kill transplants (Figure 1).

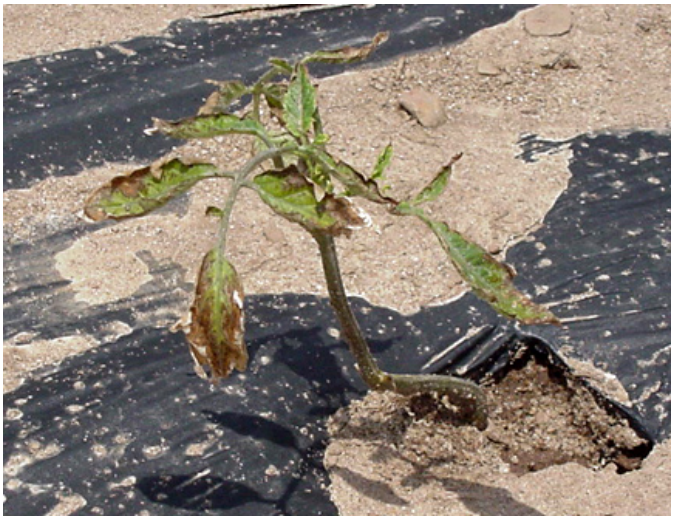

Figure 1: Tomato seedling showing marginal necrosis from desiccation and/or excess fertilizer salts. *(Photo by Liz Maynard).*

4. Assure good coverage of root ball. If a portion of the seedling root ball remains uncovered, it will dry out quickly and wick moisture away from the roots. Adjust planting and watering equipment so that soil covers the root ball.
5. Protect transplants from wind. Wind can desiccate small seedlings as well as cause physical injury. Strips of cover crops left standing are commonly used as windbreaks in some areas. Temporary fencing can also work as a windbreak. It is also possible to seed strips of a fast growing crop such as oats and kill it with a grass herbicide once the wind protection is no longer needed.

Healthy transplants treated well will quickly establish themselves in the field, setting the foundation for a productive crop.

Spanish Language Agricultural Thesaurus and Glossary - *(Lori Finch and Len Carey)* - The USDA National Agricultural Library (NAL) <www.nal.usda.gov> has published Spanish language versions of its NAL Agricultural Thesaurus (NALT) <http://agclass.nal.usda.gov/agt/agt.shtml> and Glossary of Agricultural Terms <http://agclass.nal.usda.gov/agt/glossary.shtml>. The NALT and Glossary in Spanish support increased Spanish language access to agricultural information throughout the United States and the world, accommodating the complexity of the Spanish language from a Western Hemisphere perspective.

This first Spanish language edition of the NALT comprises more than 15,700 translated concepts. Included are definitions for more than 2,400 of the concepts, in both English and Spanish, which are published in a separate interface as the Glossary of Agricultural Terms. Both publications can be downloaded and used through the NAL Services web page <www.nal.usda.gov/services/>.

The USDA National Agricultural Library, in Beltsville, Md., is the world's foremost agricultural library and part of the Agricultural Research Service, USDA's chief scientific research agency. Lori Finch is a Technical Information Specialist ((301) 504-6853, lfinch@nal.usda.gov) and Len Carey is a Public Affairs Officer ((301) 504-5564, lcarey@nal.usda.gov) for the National Agriculture Library.

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