

VEGETABLE CROPS HOTLINE

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

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<http://www.entm.purdue.edu/entomology/ext/targets/newslett.htm>

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BACTERIAL SPOT OF TOMATO - (Dan Egel) - Although the weather has been relatively dry this season, I have observed several tomato fields with bacterial spot of tomato.

Leaf spots are usually 1/16 inch, black and angular. Spots are more often found on young than old plant tissue. Spots are usually surrounded by yellow plant tissue (Figure 1). Spots on fruit are black, raised and up to 1/3 inch in diameter. The disease prefers warm wet weather. Overhead irrigation will also spread this disease. The heavy dews/fogs that many areas have been experiencing will also help this disease to become established.



Figure 1: Bacterial spot lesions are often accompanied by considerable chlorosis. (Photo by Dan Egel)

Bacterial spot may be seed borne; the disease may have been brought in on your seed/transplants. However, the causal bacterium also survives on crop residue. Tomatoes should be rotated 2 to 3 years away from peppers or tomatoes. Treatment with copper hydroxide may reduce spread in the field. However, copper products will have little effect on tomato disease such as early blight and septoria leaf spot. There are no resistant tomato cultivars, however, some cultivars are more susceptible than others. Liz Maynard and I rated tomatoes for susceptibility to bacterial spot on Butch Zandstra's farm in 2006. The results are listed in the *Midwest Vegetable Variety trials for 2006* <www.hort.purdue.edu/fruitveg/reports.shtml>. For bactericides, make sure to consult the *Midwest Vegetable Production Guide for Commercial Growers* (ID-56) <www.btny.purdue.edu/Pubs/ID/ID-56/> and the *BP-136-W* <www.ces.purdue.edu/extmedia/BP/BP-136-W.pdf>.



APHIDS, APHIDS EVERYWHERE - (Rick Foster) - This year is turning out to be the year of the aphid in many crops. Somewhat surprisingly, soybean aphids have not turned out to be as much of a problem as some had predicted. However, in a number of other crops, aphids are continuing to cause problems. One apparent side effect of all the spraying of fungicides (sometimes with a pyrethroid insecticide thrown in) on field corn is outbreaks of aphids. This is likely the result of the fungicide killing some of the insect pathogens that normally keep aphid numbers down. Adding the pyrethroid would have the added effect of killing many of the predators and parasites. That combination is a perfect set up for an aphid outbreak. In most cases, the field corn has developed to the point that there will be little or no effect on yield.

In many of our vegetable crops, we have a similar situation. Most vegetables are sprayed on a regular basis with fungicides and insecticides such as the pyrethroids to control other pests. Again, this eliminates the natural enemies that normally keep aphid numbers in check, resulting in an outbreak. Pyrethroid insecticides in general provided limited control of aphids, but are quite toxic to the natural enemies, so I don't recommend them

for aphid control. In addition, pyrethroids for control of other insects should only be used when needed, to avoid outbreaks like we are seeing this year.

In peppers (Figure 1), our old standard is Orthene, which also control corn borers. However, I have had some reports of poor control with Orthene this year, and it has a 7-day PHI, making it impractical to use during harvest. The neonicotinoid insecticides, such as Actara,

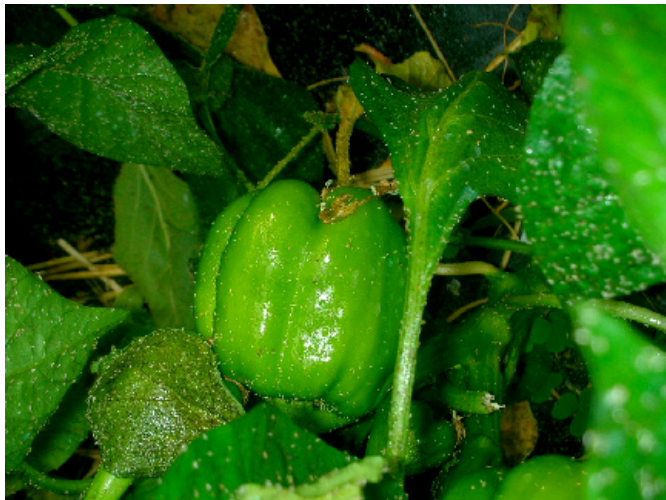


Figure 1: Aphids and honeydew on bell peppers. (Photo by Janna Beckerman)

Admire, Assail, Platinum, and Provado, generally provide excellent control, although I have had one report from a grower of poor control with Provado. Others have reported excellent results. Fufill is a different mode of action and will provide good to excellent control. Some other older products such as demethoate, endosulfan, and Lannate will usually provide good control. Lannate in particular has good knockdown action but has very little residual control. That can be a good thing if you are harvesting regularly.

In melons, the story is much the same. The neonicotinoids provide very good control. Some of the older products like diazinon, dimethoate, endosulfan, and malathion will provide good control. Fulfill is another good option with a different mode of action. Pyrethroids are not a good choice.

In sweet corn, we rarely see corn leaf aphids increase to a level that will affect yield or quality. We generally apply the rule of 50s. You should consider treatment if the field is less than 50% pollinated and at least 50% of the plants are infested with at least 50 aphids per plant. PennCap M and Lannate are the best alternatives for control on sweet corn.



NEW SOURCES OF DOWNY MILDEW - (Dan Egel) - Although downy mildew (Figure 1) still has not been observed in Indiana, this disease has spread to Oklahoma and an additional county in Missouri. This disease has also been observed in Illinois, Michigan, Ohio, New

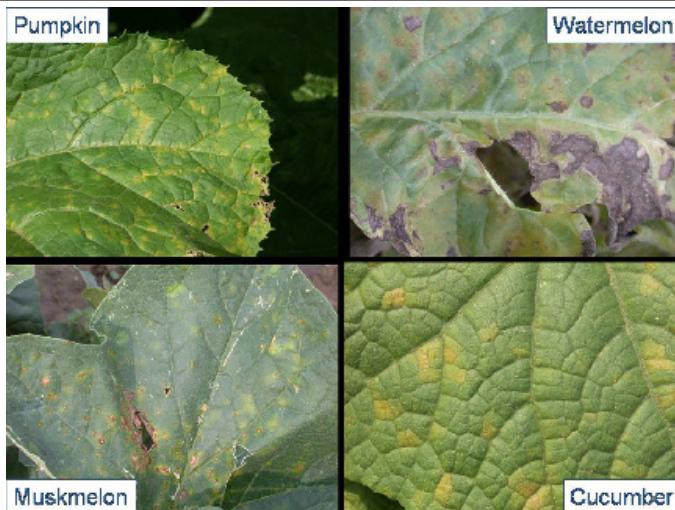


Figure 1: Downy mildew on various cucurbits. (Photos by Dan Egel)

York, Ontario, Canada, Virginia, both Carolinas, Georgia and Texas. Growers should consider applying one of the specialized systemics discussed in earlier issues of the *Vegetable Crops Hotline*. The specialized systemics should be alternated with a contact fungicide on 7-day schedule. If downy mildew is observed locally, affected growers should consider specialized systemic fungicides every 7 to 10 days. Read the label for resistance management, safety information and much more. Follow the epidemic using this link: www.ces.ncsu.edu/depts/pp/cucurbit/.



CORN EARWORMS ARE HERE - (Rick Foster) - The first major migratory flight of corn earworm moths occurred last weekend. Over the 3 nights of the weekend, we caught 120 moths in Vincennes and 20 at Lafayette. Our weather models predict that the migration will continue for at least the next several days. Growers with sweet corn that has green silks should be especially vigilant now. With the hot temperatures we are having, corn earworms eggs laid on the silks will hatch in 2 days. With the moth catches we had over the weekend, I would recommend applying an insecticide to silking sweet corn every 3 days in southern Indiana and every 4 days in the northern part of the state. If the moth counts increase too more than 100 per night, I would increase the frequency to every 2 days. If the temperatures cool off (high temperatures in the low 80s) or moth counts drop, I would add a day to the interval. Remember: sprays directed at corn earworms should not start until your sweet corn has begun to silk, with the ideal timing being at 50-70% silk. Also, you can terminate spraying when the silks turn brown. The pyrethroid insecticides Capture, Warrior, and Mustang Max are the best products currently available.



FUNGICIDE SELECTION - (*Dan Egel*) - Although dry weather has caused disease pressure to be low for most of the state, some vegetable growers report problems with foliar diseases such as gummy stem blight of watermelon and early blight of tomato. When considering what fungicides to apply, possible sources of information include the *BP-134-W*, *BP-135-W* *BP-136-W* and the *Midwest Vegetable Production Guide for Commercial Growers 2007*. In these publications, I have listed a broad range of fungicide choices. Not all possible fungicides are included in these publications. If you have a fungicide that you want to apply is not on the list, contact me. The most likely reason the fungicide is not listed is because I do not think the fungicide is appropriate for the disease. Users of the BP-134, 5 and 6-W will also notice that some products are marked with an 'L' when the product is labeled, but there is a better product available. All the publications listed above can be found at: <www.btny.purdue.edu/Pubs/#vegetables>.

Feel free to contact me with questions about fungicide products and schedules.



HOT WEATHER AND PESTICIDES - (*Dan Egel*) - The extremely hot, dry, sunny weather we are experiencing this week may alter how the pesticides we use every day interact with our crops. One is more likely to see symptoms of 'spray damage' during such weather. The reason is that crops plants may be stressed by the weather and any additional stress added by a pesticide may be too much.

How to avoid spray damage? Try these tips:

- It may be wise to wait until evening or early morning to apply pesticides to crops.
- For most diseases, spray intervals may be increased from 7 days to 10 to 14 days when the weather has been dry. In addition, the current temperatures we are experiencing are outside the optimum temperatures for many diseases. For example, the optimum temperature for early blight of tomato is 75 to 84°F.
- Pesticides with an EC formulation are more likely to cause damage than other formulations.
- Avoid crop oils if possible.

Of course, many exceptions exist to the above guidelines. Contact me or another extension specialists with comments or questions.



FIELD DAY - (*Announcement*) - Wednesday, August 22, 2007, Pinney Purdue Ag Center, located 5 ½ miles East of Valparaiso or 1 mile West of Wanatah on US Highway 30 then North ½ mile on County Line Road (Porter/LaPorte).

7:30-8:30 am CDT - Registration, Health Fair, and Exhibits (For Health Fair, please fast prior to the screening.)

8:30 am-12: 30 pm CDT - Tours and Program Presentations

Glenn Nice - Herbicide Resistance and Problem Weeds

Greg Shaner - Fungicides on Corn and Soybean???

Larry Bledsoe - Insect Updates for Field Crops

Lyndon Kelley - Getting the Most Out of Your Irrigation

Bob Nielson & Jim Camberato - Nitrogen Fertilization of Corn

Jerry Nelson - New Ventures in Agriculture

12:30 pm CDT - Pork Chop Lunch

12:45 pm CDT - Featured Speakers

Dr. France Cordova - New Purdue President

Dr. Allan Gray - Outlook for the 2007 Farm Bill

Twilight Program

6:00-8:00 pm - Tours and Program Presentations

Glenn Nice - Herbicide Resistance and Problem Weeds

Larry Bledsoe - Insect Updates for Field Crops

Lyndon Kelley - Getting the Most Out of Your Irrigation

You can receive PARP credit at either the day or twilight session.

Features include:

Exhibits from local agribusinesses

Certified Crop Adviser CEUs and Commercial Applicator CCHs applied for

Private Applicator Recertification Program (PARP) Credit - This is an opportunity to fulfill 1/3 of your Private Applicator Permit requirements (with payment of \$10 fee)

More information and directions are available at <www.agriculture.purdue.edu/pac/ppac/>.

If you have a disability that requires assistance for you participation in this event, please contact Port County CES at (219) 465-3555 Ext. 24 or Pinney PAC at (219) 733-2379 prior to the event.



PESTICIDE WASTE PROGRAM - (*Fred Whitford*) - Office of Indiana State Chemist will hold pesticide waste pickups in August around the state. Please Kevin Neal at (800) 893-6637. He will get their names, what they have, and in what quantities to help him in his planning. **NO ONE HAS EVER GOTTEN IN TROUBLE BY BRINGING IN THEIR UNWANTED PESTICIDES.** The state will pick up and pay the cost. Please check the following list for the date and location close to you.

August 14th - Whitley County Fairgrounds

August 16th - Decatur County Fairgrounds

If you have questions, please contact Fred Whitford, Coordinator, Purdue Pesticide Programs, 915 W. State Street, West Lafayette, IN 47907-2054; Phone: (765) 494-1284; Fax: (765) 496-1556; Email: fwhitford@purdue.edu; Web: <www.btny.purdue.edu/PPP/>.



2007 RURAL ENTREPRENEUR NETWORK (REN) WORKSHOP - (Announcement) - "Start Your Own Business" workshop series in Central and Southern Indiana now through October 4, 2007.

Content: How REN Helps Rural Business Start Ups; Characteristics of Successful Rural Entrepreneurs; Self Assessment Exercise; Available Rural Businesses; Steps in Successful Revenue and Profit Planning; Support Services for Rural Start Ups; Steps to Get Started; and more.

Instructor and Leader: James (Jim) R. Roudebush is an entrepreneur from Central Indiana with a rural background. He has an MBA in Marketing. Jim is the owner of two successful Indiana small businesses. He currently serves as adjunct professor and lecturer.

Who Should Attend: Rural individuals or family members who are interested in starting a business or are in the early stages of a business.

Cost: \$10 for Early Bird Registrations - must register by seven days prior to the workshop. If you register with a family member or a friend, the workshop will cost \$5 for each additional person. Registrations at the door are \$15 per attendee.

Workshop Dates, Locations, and Time: Each workshop will be held from 6:00-8:30 p.m.):

August 16 - Orange County - To be determined.

August 21 - Decatur County Purdue Extension Office, 545 S. Co. Rd. 200 W., Greensburg, IN 47240

August 23 - Madison County Farm Bureau 4-H Building, 512 E. 4th St., Alexandria, IN 46001

September 11 - Montgomery County - Crawfordsville District Public Library, 205 S. Washington St., Crawfordsville, IN 48933

October 4 - Greene County Community Learning Center, Hwy. 54, Switz City, IN 47465

Registration: Contact Hoosier Heartland RC&D Council, 6041 Lakeside Blvd., Indianapolis, IN 46278; Phone - (317) 290-3250; Fax - (317) 290-3150; email - hhracd@hhracd.org; website - www.hhracd.org.



PURDUE PUMPKIN AND SWEET CORN TWILIGHT MEETING SEPT. 11 - (Announcement) - Pumpkin and sweet corn trials will be featured at an evening plot tour planned for 5:00 to 8:30 p.m. Central Time, Tuesday, September 11, 2007, at the Pinney-Purdue Ag Center in Wanatah, Indiana. This will be a great opportunity to check out pumpkin and sweet corn cultivars in the field. If we're lucky the sweet corn will be ready for tasting! A comparison of weed management treatments in no-till pumpkins will also be discussed. Check the next issue of this newsletter for additional information and driving directions, or contact emaynard@purdue.edu, (219) 785-5673 after August 15.

It is the policy of the Purdue University Cooperative Extension Service, David C. Petritz, Director, that all persons shall have equal opportunity and access to the programs and facilities without regard to race, color, sex, religion, national origin, age, marital status, parental status, sexual orientation, or disability. Purdue University is an Affirmative Action employer. 1-888-EXT-INFO <<http://www.ces.purdue.edu/marketing>> Disclaimer: Reference to products in this publication is not intended to be an endorsement to the exclusion of others which may have similar uses. Any person using products listed in this publication assumes full responsibility for their use in accordance with current directions of the manufacturer.

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