

# VEGETABLE CROPS HOTLINE

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

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[vegcropshotline.org](http://vegcropshotline.org)

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**PUMPKINS ROTTING FROM THE INSIDE OUT** - (Dan Egel, [egel@purdue.edu](mailto:egel@purdue.edu), 812-886-0198) - The title of this article is pretty scary. But it isn't entirely accurate. Pumpkins won't really rot from the inside out. In this article, I will describe one way in which pumpkins can seem to rot from the inside out.

Recently, I was asked to visit a field of pumpkins where the pumpkins were soft and rotting. Some of the pumpkins had already burst. Some were soft and when prodded, the insides flowed out. I set out to try to understand how this could happen.

Although it seemed that the rotted pumpkins were healthy on the outside, upon closer examination, I found lesions of bacterial spot on the outside of affected pumpkins. More information about bacterial spot can be found in Vegetable Crops Hotline No. 586.

Most lesions of bacterial spot on pumpkin are scab-like on the surface of the pumpkin (see Figure 1). Occasionally, however, such lesions will become infected with secondary organisms such as fungi. When this happens, the lesions may enlarge and cause a rot from the surface of the pumpkin into the interior of the fruit (see Figure 2).

When I examined the pumpkins that appeared to be rotting from the inside out, all of them had holes that started out as bacterial spot lesions. Frequent rains then allowed water to accumulate in the pumpkins. A variety of microorganisms then caused the pumpkin to rot, seemingly from the inside out. To make matters worse, bacterial spot lesions typically occur on the surface of the fruit where rain may easily enter the enlarged lesions.

There may, of course, be other reasons why

pumpkins appear to rot from the inside out. However, look carefully at such pumpkins to see if small lesions caused by bacterial spot have become large enough to allow water and microorganisms inside the pumpkin, causing a rot. While such pumpkins are awful to behold, they are a little less scary if one understands the cause.

This article was originally published on Oct. 16 at <http://veggiediseaseblog.org>.



Figure 1. Bacterial spot of pumpkin often causes scab-like lesions on pumpkins. In this photo, one of the lesions has become secondarily infected and is enlarged. (Photo by Dan Egel)



Figure 2. The pumpkin shown in Figure 1 has been split open through the enlarged lesion. Here it can be seen that rain water may enter the pumpkin from the open lesion. (Photo by Dan Egel)



**REVISED FDA PRODUCE SAFETY RULE OPEN FOR COMMENTS UNTIL DECEMBER 15** - (Liz Maynard, [emaynard@purdue.edu](mailto:emaynard@purdue.edu), 219-531-4200 ext. 4206) - Last year this at time many were discussing and commenting on the proposed Produce Safety Rule published by FDA. There were so many comments about parts of the rule that the FDA published a supplement in September 2014. The comment period on the supplement is open until Dec. 15. This article briefly summarizes parts of the revised proposal that address manure applications and water.

The initial proposal required a waiting period of 9 months between application of raw manure and harvest of a crop covered under the rule. (The rule covers fresh fruit and vegetable crops normally eaten raw.) The new proposal does not define any specific waiting period. The FDA explains that this change was made because the length of time necessary to reduce the risk will vary depending on many factors, and we don't yet have the scientific understanding to develop a rule that takes into account all those factors. The FDA will conduct a risk assessment and work with USDA and others to do research so that in the future, when a required waiting period is defined, it will be based on more complete information. This change also applies to other soil amendments from animal sources that are not treated.

If this part of the rule applies to you, stay tuned for opportunities to provide input on research that will address your production system. And recognize that even though no waiting period is specified, you are still responsible for using raw manure in a way that prevents presence of human pathogens on produce that goes to market.

For properly composted manure and other animal products, the initial proposal required a waiting period of 45 days between application and harvest. The new proposal does not require any waiting period.

The initial proposal required that if water used for irrigation or sprays would contact the edible portion of the crop, the source must be tested for *E. coli* on a regular basis. If the level of *E. coli* exceeded EPA recreational water quality criteria (more than 126 CFU/100 ml), the water could not be used unless it were treated. The revised proposal allows use of water that has doesn't meet the EPA criteria, if there is enough time between application and harvest to allow pathogens to die off. How much time is 'enough' is calculated by allowing for 68% (0.5 log) reduction in the *E. coli* count for each day between irrigation and harvest. So, if the *E. coli* level in a pond were 1000 CFU/100 ml, the water would not be suitable for irrigation on the day of harvest. However if there were two days between irrigation and harvest, the count would be reduced by 68% the first day (to 316), and another 68% the second day, to 100. This is below the EPA limit, and so the water could be used for irrigation two days before harvest. In addition, if postharvest activities such as washing and storage are expected to reduce pathogen numbers, that could be

taken into account, with supporting data.

The revised proposal also changes the water testing requirements, reducing the amount of testing based on results of baseline tests.

For additional information visit the FDA site <http://www.fda.gov/Food/GuidanceRegulation/FSMA/ucm334114.htm>. Feel free to contact me with questions.



**SOUTHWEST INDIANA MELON AND VEGETABLE GROWER MEETING.** The Southwest Indiana Melon and Vegetable Growers Association will hold their technical meeting and variety trial showcase on Thursday, November 20, 2014, in the basement of the Southwest Purdue Ag Center, 4369 N. Purdue Road, Vincennes, IN. The meeting will start at 5 P.M. with a general business meeting. At 6 P.M., dinner will be served. Then at approximately 7 P.M., the variety trial discussion will begin followed by a brief presentation by the Indiana State Department of Agriculture on Food Hubs. Any grower interested in becoming a member is invited to attend. Membership dues are \$15 per year and can be paid at the meeting. If you have questions or want to RSVP, please contact Sara Hoke or Dan Egel at (812) 886-0198 or email [shoke@purdue.edu](mailto:shoke@purdue.edu). RSVP are due by November 14<sup>th</sup>.



#### UPCOMING EVENTS

**Webinar - Crop Selection in High Tunnels.** Thursday, Nov. 20, 10-11 A.M. EST. Presented by by Liz Maynard, Purdue Extension vegetable crops specialist. No registration required. <https://gomeet.itap.purdue.edu/cropsht/>.

**Southwest Indiana Melon and Vegetable Grower Meeting.** Thursday, Nov. 20, 5 P.M. EST. Southwest Purdue Ag Center, 4369 N. Purdue Road, Vincennes, IN. New members welcome. \$15 per person at the door. Register by Nov. 14 by calling Sara Hoke or Dan Egel at 812-886-0198.

**Illiana Vegetable Growers Symposium.** Tuesday, January 6, 2015. Teibel's Restaurant, Schererville, IN. Program available in early December. Sign up to be on the mailing list at <https://ag.purdue.edu/hla/fruitveg/Pages/MailListSignup.aspx>, or call 219-531-4200 ext. 4206.

**Indiana Horticultural Congress.** January 20-22, 2015. Wyndham Indianapolis West, Indianapolis, IN. [www.inhortcongress.org](http://www.inhortcongress.org). Contact: Lori Jolly-Brown at 765-494-1296 or [ljollybr@purdue.edu](mailto:ljollybr@purdue.edu).

**Indiana Small Farm Conference.** March 5-7, 2015. Hendricks County Fairgrounds, Danville, IN. <https://ag.purdue.edu/extension/smallfarms/>. Contact: Steve Engleking, 260-499-6334, [englekin@purdue.edu](mailto:englekin@purdue.edu).

**END OF THE SEASON, TIME TO RENEW, NEW FORMAT FOR VCH?** - (Liz Maynard, [emaynard@purdue.edu](mailto:emaynard@purdue.edu), 219-531-4200 ext. 4206) - With Halloween comes the final issue of the Vegetable Crops Hotline for 2014. The first issue of 2015 is included with a 2014 subscription, but now is the time for subscribers who receive a paper copy in the mail to renew. A renewal form is included with this issue. Email subscribers will remain on the subscription list as long as the email address works.

I'm interested in hearing suggestions about how to make the newsletter more useful to you. Part of that is delivering it in a format that you like. You can subscribe to receive a paper copy of this newsletter by U.S. mail, sign up to receive an email announcement when the pdf issue is posted online, or just visit [vegcropshotline.org](http://vegcropshotline.org) and download an issue when you need it. Indiana Vegetable Growers Association members receive a paper copy as a benefit of membership.

Are there other ways you would like to receive or be notified about the Vegetable Crops Hotline? Let me know by completing the survey below and sending it in with your renewal (see form on page 4), or take the survey online at <http://bit.ly/1vdSQom>.

What format would you prefer for reading the Vegetable Crops Hotline?				
	Would not Use	Not likely to Use	OK	Preferred
Paper newsletter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Online pdf (printer-friendly version of paper newsletter)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Online, computer-screen friendly format	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Online, smart-phone friendly format	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Online, tablet-friendly format	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smart-phone app, Android	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smart-phone app, iOS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (describe) <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How would you prefer to be notified when a new issue is published?				
	No	Maybe	OK	Preferred
Receive it in the mail	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Email notice with link to pdf	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Email notice with links to individual articles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twitter post	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook post	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LinkedIn post	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smart-phone app, Android	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smart-phone app, iOS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (describe) <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please share any other comments or suggestions about the Vegetable Crops Hotline.

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# *2015 Vegetable Crops Hotline Subscription Form*

The *Vegetable Crops Hotline* newsletter provides the commercial vegetable grower with timely information about disease, insect and weed pests, fertility practices, post-harvest problems, pesticide label changes, meetings and much more. Each year, the Hotline is published 12 times during the growing season (April - September) with off-season issues in February, March and November.

Again this year, in addition to receiving the regularly scheduled *Hotline* issues, subscribers may also receive the ***Vegetable Crops Hotline - Bulletin*** either by email or FAX. This will require that subscribers to the 2015 *Hotline* indicate how they want to receive the bulletins. The *Bulletin* articles will also appear in the next regularly scheduled *Hotline* issue along with other pertinent articles written by the Purdue staff.

To subscribe, please fill in your name and address below, and send this form and a check for \$15.00 made payable to **Purdue University** to:

Vegetable Crops Hotline Subscription  
Southwest Purdue Agricultural Program  
4369 N. Purdue Rd.  
Vincennes, IN 47591

**Indiana Vegetable Growers Association members are automatically signed up for the *Vegetable Crops Hotline* at no additional charge.**

\_\_\_\_ Yes, I would like to subscribe to the 2015 *Vegetable Crops Hotline*. Enclosed is a \$15 check made payable to **Purdue University**.

**Mail to:** Vegetable Crops Hotline Subscription, SWPAP,  
4369 North Purdue Road Vincennes, IN 47591

\*\*\*\*\***(Please complete the following)**\*\*\*\*\*

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Phone: \_\_\_\_\_ (home) and/or \_\_\_\_\_ (work)

If you would like to receive email notification when ***Vegetable Crops Hotline Issues and Bulletins*** are published, please give us your email address or visit [lists.purdue.edu/mailman/listinfo/vch](http://lists.purdue.edu/mailman/listinfo/vch) to sign up:  
email address. \_\_\_\_\_

If you want the occasional ***Hotline Bulletins*** by fax, please include your FAX number (with area code): \_\_\_\_\_



## Indiana Vegetable Growers Association

### Membership Renewal/Application

**Benefits of IVGA Membership:**

- Midwest Vegetable Production Guide for Commercial Growers, (ID-56) (new edition usually available in Jan.)
- Vegetable Crops Hotline subscription
- Listing in IVGA Directory of Wholesale Vegetable Producers (optional)
- Your web site linked on www.ivga.org
- Corporate members: logo included on corporate members page at www.ivga.org
- Network with other vegetable growers
- Support education and research to improve vegetable production and marketing in Indiana

To renew or join, correct or fill out the form below and send in with your check payable to IVGA. Memberships run January - December. If you have already renewed for the current year, but haven't provided the information requested below, please check here , and complete and return this form so we have your current information.

**Your contact information** below will be printed in the membership directory that is sent to members only. It will also be used to mail you the Vegetable Crops Hotline, to fax or e-mail the Hotline Bulletin, and for IVGA correspondence.

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Tel: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

Web: \_\_\_\_\_

**ID-56 Delivery:** Where will you pick up your copy of the ID-56 or should we mail it to you?

- IHC (Indiana Hort Congress),
- IVGS (Illiana Veg Growers Symposium)
- SW Ind. Melon and Veg. Meeting
- Starlight Veg Meeting
- Please send by mail
- I do not want a copy of the ID-56

Would you like to receive **free subscriptions** to trade magazines that may be offered to IVGA members?

Yes  No

Check here if you want to receive the **Vegetable Crops Hotline by Email ONLY** (no hard copy)

**Membership Type:**

- Regular, \$40.00/year
- Industry/Corporate, \$80.00/year

**Make check payable to:**

Indiana Vegetable Growers Association (IVGA).  
Return to:  
Indiana Vegetable Growers Association c/o Maynard  
PO Box 1321  
Valparaiso, IN 46384-1321

The IVGA Directory of Wholesale Vegetable Producers will be updated periodically.

Check here to be included in the directory.

Check here if information has not changed since previous year. OR provide information below.

Contact information for Wholesale Directory, if different from elsewhere on this form:

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Tel: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

The wholesale directory is available to anyone who requests it and will be posted on the web. Indicate quantity of each item: S=small quantities; X=wholesale quantities; T=semi truckload quantities.

- |   |  |
|---|--|
| <input type="checkbox"/> apples                             | <input type="checkbox"/> onions, bulb        |
| <input type="checkbox"/> asparagus                          | <input type="checkbox"/> onions, green       |
| <input type="checkbox"/> beet                               | <input type="checkbox"/> peaches             |
| <input type="checkbox"/> black- or raspberries              | <input type="checkbox"/> peppers, bell       |
| <input type="checkbox"/> broccoli                           | <input type="checkbox"/> peppers, hot        |
| <input type="checkbox"/> cabbage                            | <input type="checkbox"/> potatoes            |
| <input type="checkbox"/> cantaloupe                         | <input type="checkbox"/> pumpkin             |
| <input type="checkbox"/> carrot                             | <input type="checkbox"/> pumpkin, mini       |
| <input type="checkbox"/> cauliflower                        | <input type="checkbox"/> radishes            |
| <input type="checkbox"/> chrysanthemums                     | <input type="checkbox"/> snap_bean           |
| <input type="checkbox"/> daylilies                          | <input type="checkbox"/> spinach or chard    |
| <input type="checkbox"/> greens (collards, mustard, turnip) | <input type="checkbox"/> squash, summer      |
| <input type="checkbox"/> corn, stalks                       | <input type="checkbox"/> squash, winter      |
| <input type="checkbox"/> corn, ornamental                   | <input type="checkbox"/> strawberries        |
| <input type="checkbox"/> cucumber                           | <input type="checkbox"/> sweet corn, bicolor |
| <input type="checkbox"/> eggplant                           | <input type="checkbox"/> sweet corn, white   |
| <input type="checkbox"/> gourds, ornamental                 | <input type="checkbox"/> sweet corn, yellow  |
| <input type="checkbox"/> herbs                              | <input type="checkbox"/> tomatillo           |
| <input type="checkbox"/> kale                               | <input type="checkbox"/> tomato              |
| <input type="checkbox"/> lettuce                            | <input type="checkbox"/> turnips             |
|   | <input type="checkbox"/> watermelon          |

Office Use Only: Check no. \_\_\_\_\_ Check Date \_\_\_\_\_

Date Rec'd. \_\_\_\_\_ Rec'd. by \_\_\_\_\_