VEGETABLE CROPS HOTLINE

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

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In This Issue

Root-knot Nematode of Watermelon

(Dan Egel, egel@purdue.edu, (812) 886-0198)

On a sandy hillside in a watermelon field, we noted vines that, from a distance, appeared undersized compared to the vines in the flats. Upon closer inspection, some of the vines had either wilted or a portion of the plant had wilted. The wilted vines had discolored vascular tissue. These vines were affected by Fusarium wilt of watermelon. The roots of many of the plants had galls caused by root knot nematodes. That is, many of the vines were infected with both Fusarium wilt and root knot nematode. This article discusses root knot nematode on watermelon.

Root-knot nematodes are small, colorless roundworms that dwell in the soil. They penetrate into plant root in the juvenile stage. Once they find a favorable location in plant tissues, they stop moving. Infested root cells start swelling and form galls that are the characteristic symptom of root-knot nematode infestation (Figure 1). Infested roots fail to absorb water and nutrients resulting in stunted growth, yellowing and wilt of above ground plants. Going through their life cycles, mature females lay eggs on root surfaces.

Figure 1: Root knot nematode damage on watermelon includes the galls on the roots seen here. The vines may be stunted and the yields may be reduced.

Root-knot nematode thrives best in well aerated, moderately dry soils; it is a problem in regions where winter is not harsh enough to kill root-knot nematode eggs. It causes damage on cantaloupe and watermelon. Movement of root-knot nematode in soils is extremely slow. Contaminated tools and plant materials, feet of human and other animals and rain or irrigation water may move nematodes. Once soils are contaminated, root-knot nematode populations increase quickly with the presence of host plants, and favorable soil conditions, i.e. warmth, moisture, and oxygen.

Good cultural practices can effectively prevent or reduce damage caused by root-knot nematode. The first step is to prevent soil contamination. Carefully clean and sanitize any tools and tractors, shovels etc.

Soil fumigation is by far the most effective approach to control nematodes, but many soil fumigants may be considered too expensive. Fumigants include Telone (1,3-dichloropropene) and Vapam HL (metam sodium). Telone may be combined in formulations with chloropicrin. Non-fumigants include Velum Prime (fluopyram) which may be put through the drip, Vydate (oxamyl) and Nimitz (fluensulfone).

Dry fallowing and cultivation to bring as much soil as possible to the surface are effective in killing root-knot nematode through starvation and desiccation. It is very important to keep the field

weed-free during fallowing. Dry fallowing and tillage, however, are destructive to soil fertility. Composts and other organic materials should be added to the soil following fallowing to restore soil fertility.

Using crop rotation to control root-knot nematode is difficult because of the wide host range of root knot which includes soybeans. Be cautious that some of the cool season legume cover crops such as hairy vetch and crimson clover are also hosts of root-knot nematode; they may encourage populations of root-knot nematode under high soil temperatures. Various *Brassica* species that can release toxic compounds after breakdown have nematicidal effects. However, results of growing cover crops as biofumigant to control root-knot nematode is mixed because these crops may be hosts of root-knot nematode, resulting in a population increase during cover crop cultivation when conditions are favorable.

As discussed earlier, the watermelon plants observed were infected both with Fusarium wilt and root knot nematode. It is possible that the root knot nematode may increase infection of Fusarium wilt. Therefore, watermelon crops planted in fields with both root-knot nematode and the Fusarium fungus may face yield losses greater than the losses from either disease alone. It is a good idea to know the disease history of the fields you plan to plant to watermelon.

Downy Mildew in Southern Michigan

(Dan Egel, egel@purdue.edu, (812) 886-0198)

Downy mildew has been observed on cucumber in Berrien County in extreme southwestern Michigan and in Monroe County in extreme southeast Michigan. The downy mildew spores that cause disease on cucumber will cause disease on cantaloupe and may cause disease on other cucurbits such as pumpkin and watermelon. The forecast is for the spread of the disease to move in a east to southeasterly direction. Therefore, cucurbit growers in northern Indiana should scout and manage for downy mildew.

The organism that causes downy mildew of cucurbits doesn't overwinter in Indiana. It has to be blown in every year. It is common for downy mildew to start the season in the Gulf States and migrate north with the cucurbit crops. Downy mildew apparently overwinters in northern Michigan/southern Ontario in greenhouses where cucumbers are grown year-round. Therefore, downy mildew is often found in Michigan before it is found in Indiana.

For infection to occur, free moisture must be present on leaves for at least 2 hours. The temperature optimum is from 59 to 68 degrees F, however, disease can occur in much warmer temperatures.

Some cucumber varieties have some resistance to downy mildew. For susceptible cucumber varieties or other types of cucurbits, specialized systemic fungicides will help to reduce the severity of downy mildew. Unfortunately, many of the most effective systemic fungicides for downy mildew are not effective on our more common cucurbit diseases. This is because the organism that causes downy mildew, *Pseudoperonospora cubensis*, is not really a fungus at all. *P. cubensis* is more closely related to a brown alga. This fungus-like organism is related to the organism that causes Phytophthora blight (*Phytophthora capsici*). Therefore, many of the same fungicides that are effective against downy mildew are also effective against Phytophthora blight.

The Midwest Vegetable Production Guide for Commercial Growers lists several products that will help to slow the progress of downy mildew of cucurbits. Contact fungicides such as those with the active ingredient chlorothalonil or mancozeb products may slow down the disease. Systemic products that are listed include: Elumin®, Forum®, Gavel®, Omega, Orondis Opti®, Orondis Gold®, Orondis Ultra®, Presidio, Ranman®, Zampro® and Zing®. Products with the active ingredient phosphite may be helpful. Be sure to check the label for the re-entry interval, the pre-harvest interval, the FRAC group and other important information. Always alternate FRAC groups.

To see forecasts of downy mildew of cucurbits online go to https://cdm.ipmpipe.org/.

One other item of interest: Downy mildew of cucurbits is not caused by the same organism which causes downy mildew of soybeans. Therefore, downy mildew of soybeans will not spread to the pumpkin field immediately adjacent.

Below, find a photo of downy mildew of cucumber (Figure 1). Note that the yellow lesions are scattered across the leaf, not concentrated on the edge of the leaf. Under moist conditions the underside of the lesions will have the dark, fuzzy growth of the fungus-like organism that causes downy mildew.

Here is a link to the original article from Michigan State Extension.

https://www.canr.msu.edu/news/cucumber-downy-mildew-outbreak-of-2020

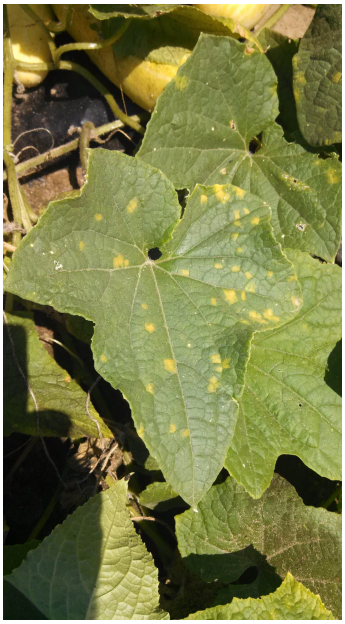

Figure 1. Downy mildew of cucumber.

Considerations for Mid-Season Weed Control in Cucurbits

(Stephen Meyers, slmeyers@purdue.edu, (765) 496-6540)

If they have not already, your early season residual herbicides will soon run out of steam. Depending on the crop and production system, you may soon lose the ability to cultivate row middles. Now what? For many vegetable crops, managing emerged weeds is difficult with few postemergence herbicide options. This article will focus on cucurbit crops, but many of the principles translate to other crops as well.

General Guidelines:

Do not rely solely on postemergence options: I know hindsight is 20/20, but if you have more escaped weeds than you'd like this year, now is the time to start evaluating changes for next season. With most crops, a weed control program that relies entirely on managing weeds after they've emerged is a formula for failure. Consider combining postemergence herbicides with other management tactics including stale seedbed, plastic mulch, mechanical cultivation, cover crops, or residual (AKA soil-applied) herbicides. Always "start clean".

Aim small: As with all other postemergence herbicide applications, target small weeds less than 4" tall. Larger weeds require higher herbicide rates, which can increase the risk of crop injury. Larger weeds are also more difficult to control.

Keep an eye on pre-harvest intervals: In order to avoid exceeding the allowable amount of pesticide residue, allow enough time between herbicide application and harvest. For example, the pre-harvest interval for clethodim (ie Select®) products is 14 days for all cucurbit crops. However, the pre-harvest interval for sethoxydim (ie Poast®) is 14 days for squash, pumpkin, and watermelon, but only 3 days for cantaloupe and cucumbers.

Crop oil concentrate (COC) vs non-ionic surfactants (NIS): Most postemergence herbicides will benefit from the addition of a crop oil concentrate or non-ionic surfactant. Consult the herbicide label to make sure the product you are using does not already contain COC or NIS. Both NIS and COC achieve the same objective of helping the herbicide get into the targeted weeds (and crop) although they work in different ways. While NIS's simply reduce surface tension and allow spray droplets to spread over more of the leaf surface area, COC's actually degrade some of the wax on the leaf surface to assist increased uptake.

In general, under "normal" conditions either is fine. However, under conditions of elevated temperature or plant stress, NIS typically results in less foliar burn than COC (Figure 1.). Both types of products are sold under various names and formulations. Consult the product labels for information specific to your NIS or COC. Although many NIS and COC labels will provide a range of rates, I don't see much advantage of including more than 0.25% NIS (1 quart NIS per 100 gallons of solution) or 1% COC (1 gallon COC per 100 gallons of solution).

Figure 1. Foliar burn and chlorosis (yellowing) on a cantaloupe plant from an application of clethodim plus 0.25% non-ionic surfactant.

Herbicide Options:

Row middles: If your vines have not grown into the row middles, a directed or hooded application can be made with broad-spectrum herbicides glyphosate (ie Roundup®) or carfentrazone (ie Aim®) (Figure 2). Avoid contacting the crop, which could result in crop injury or crop death. Halosulfuron (ie Sandea®) can also be applied as a post-directed application to row middles in summer squash (30*), gourd (30), watermelon (57), pumpkins (30), winter squash (30), cucumber (14), cantaloupe (57), honeydew (57), and crenshaw melons (57). While glyphosate will control both broadleaves and grasses, halosulfuron and carfentrazone offer little grass control. *Required days between application and harvest.

Figure 2. Glyphosate applied POST-directed between rows of no-till pumpkins prior to vine-running. Note the weed escapes in the row.

Grasses: Use clethodim or sethoxydim following the product label rate based on weed size and species.

Broadleaves: Halosulfuron (ie Sandea®) is really the only postemergence broadleaf product labeled for over-the-top use across cucurbit crops. In Midwestern states the label states that Sandea can only be applied over-the-top to bare ground cucumbers, cantaloupes, honeydews, crenshaw melons. The

production system (bareground vs plasticulture) is not specified on the label for pumpkins and winter squash. Applications should target seeded or transplanted cucurbits beginning at the 3-5 true leaf stage and prior to the appearance of female flowers. Postemergence applications of Sandea may result in yellowing and stunting of the crop which may result in delayed crop development. Halosulfuron also has activity on yellow nutsedge.

Be patient: Systemic herbicides take longer to work than contact herbicides. For example, when using grass-selective herbicides, it may take two weeks or more for grassy weeds to die. Several days following the application of a grass-selective herbicide you should notice slowed grass growth, stunting, and/or chlorosis (yellowing) or reddening of leaf tissues (Figure 3). To confirm the herbicide is working you can pull the newest leaf from the plant (Figure 4). You should notice water-soaked or necrotic tissue near the base of the leaf (Figure 5).

Figure 3. Grass displaying some slight chlorosis (yellowing) four days after an application of clethodim plus non-ionic surfactant.

Figure 4. Gently pull the newest leaf up.

Figure 5. A water-soaked or necrotic (dead) leaf base indicates proper uptake and translocation of a grass-selective herbicide.

Common Lambsquarters

(Jeanine Arana, jcordone@purdue.edu, (765) 588-7787) & *(Stephen Meyers, slmeyers@purdue.edu, (765) 496-6540)*

Scientific name: *Chenopodium album*

Common lambsquarters is originally from Eurasia. It is an aggressive weed, adapted to grow vigorously in many different climates and soils, and has been able to establish worldwide. In North America it was once grown as a vegetable crop. In Asia and Africa, it is still cultivated to use as a spinach alternative or as animal feed.

Identification: Cotyledons are linear to lanceolate. The leaf surfaces and stems of the youngest seedlings are covered with clear, shiny granules that turn into a white powdery coating (Figures 1 and 2). Common lambsquarters with a purplish powdery coating can also be found (Figure 3). Margins on young leaves are entire or have few teeth. Mature leaves are alternate, often broadly triangular with irregular, usually shallow toothed margins and are pale gray-green in color. They often fold upward along the central vein. Stems are vertically grooved with red, purple or light green stripes.

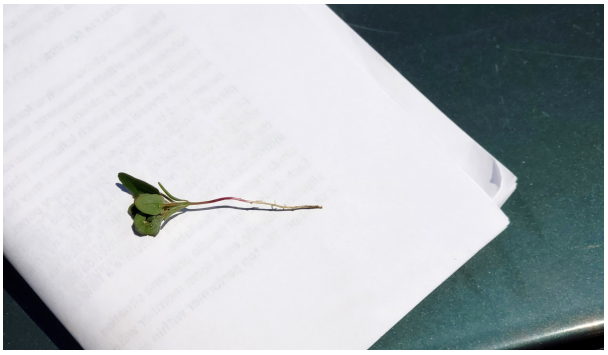

Figure 1. Cotyledons and white powdery coating underneath foliage.

Figure 2. Young seedling showing white powdery coating.

Figure 3. Lambsquarter with purplish powdery coating.

Growth habit: Erect summer annual. Can reach over three feet in height. Optimum temperatures for germination ranges from 64 to 82°F.

Reproduction: Propagates by seed. Flowers from June to September. Flowers are very small, greenish, densely grouped together into small, thick, granular clusters along the main stem and upper branches. Flowers do not have petals, only 5 green sepals. Produces as many as 176,000 seeds per plant. Seeds are circular and flattened, each 1 to 1.5 mm.

Dormancy: Seeds can persist in a dormant state in the soil for years. Dormancy increases as depth increases.

Integrated weed management:

Biological control: Common lambsquarters attracts leaf miner. Leaf miner will feed on lambsquarters but can also become a problem in the crop. Field mice, sowbugs, millipedes, crickets, slugs, and carabid beetles can feed on common lambsquarter seeds lying on the soil surface.

Cultural and mechanical practices:

- Tillage: Small, emerged common lambsquarters and other emerged weeds will be controlled. Seeds that are buried deep can be moved to the surface where they can be biologically controlled or encouraged to germinate prior to a repeated shallow cultivation event.
- Planting date: It is possible to reduce lambsquarters pressure by delaying planting from mid-May to early June after weeds have been controlled with stale seedbed practices.
- Mulching: Plastic or plant-based mulches can reduce emergence near the crop by creating a physical barrier.
- Hand-weeding or hoeing: Remove weeds before they set seeds. This practice is very labor-intensive and often only practical at low weed densities and/or low acreage situations. Higher densities should be controlled with herbicides.
- Flaming: Studies have determined that common lambsquarters is sensitive to flaming when it has just emerged. The key is to target small lambsquarters (less than 5 leaves).

Chemical control:

Common lambsquarters populations have documented resistance to Groups 2 (ALS-inhibitor) and 5 (Photosystem II-inhibitor) herbicides. Some populations have demonstrated reduced sensitivity to glyphosate. Herbicides recommendations will differ by crop, production system, and stage of crop and weed development. For more specific information on chemical control options, consult the *Midwest Vegetable Production Guide* at https://mwveguide.org/ and the product labels.

References

Loux, M. M., Doohan, D., Dobbels, A. F., Johnson, W. G., Young, B. G., Legleiter, T. R., & Hager, A. (2017). Weed control guide for Ohio, Indiana and Illinois.

United Soybean Board (2020). Common Lambsquarters Management Fact Sheet. Take Action Pesticide Resistance Management. Retrieved June 16, 2020, from https://www.canr.msu.edu/weeds/extension/factsheets/50737FINALFactSheetLambsquarters.pdf

Using Shadecloth on High Tunnels for Tomato and Colored Bell Pepper Production

(Wenjing Guan, guan40@purdue.edu, (812) 886-0198)

On hot days in the summer, high tunnel growers may wonder whether to place shadecloth on high tunnels. Considering excessive heat inside the structures that may lead to plant stress, blossom drop and unmarketable fruit, there is a rational for doing it. However, it is important to realize the limitations of placing shadecloth on high tunnels in the Midwest.

A few years ago, we compared the effect of 30% black shadecloth on temperature and light levels inside a high tunnel. We found shadecloth significantly decreased maximal temperatures for about 10 degrees Fahrenheit while it had no effect on nighttime temperatures. In terms of light reduction, it ranged from 60% in a sunny day to 30% in a cloudy day. More information about this comparison can be found in the article *Temperature and Light Intensity in a High Tunnel Covered with 30% Black Shadecloth* in Issue 619. In our experience of growing determinate tomatoes in the high tunnel with 30% shadecloth, we noticed there was less yellow shoulder fruit. However, we had to deal with plants with extended shoot length, which means the plants need to be tied more frequently to prevent them from falling down.

A study recently published by Dr. Ajay Nair and his group at Iowa State University closely studied the effects of placing shadecloth on high tunnels for growing colored bell pepper in the Midwest.

This study compared bell pepper yield, quality, and plant growth when they were grown in high tunnels with no shadecloth, 30% light-reducing shadecloth, and 50% light-reducing shadecloth (shadecloth was installed in June and remained on the high tunnel throughout the entire season). The study found the harvest of colored bell pepper was delayed for about a week in the high tunnels placed with shadecloth. This is likely attributed to reduced average air temperatures under the shadecloth. On the positive side, shadecloth reduced the incidence of sunscald on colored bell pepper. The highest yield was observed in the high tunnel without shade cloth although this was not significantly different from 30% shadecloth; The lowest yield was observed in the high tunnel with 50% shadecloth. The shade treatments did not affect sugar content of colored bell pepper. Detailed information about this research can be found in the article *Cultivar Selection and Placement of Shadecloth on Midwest High Tunnels Affects Colored Bell Pepper Yield, Fruit Quality, and Plant Growth*.

Figure 1. Compare colored bell pepper production in high tunnels with and without shadecloth. Photo by Ajay Nair.

The take home message, the use of black shadecloth above 30% light reduction is not appropriate in Midwest high tunnel production systems. Using 30% shadecloth may increase marketable fruit but did not increase total fruit yield. Harvest of colored bell pepper in high tunnels may be delayed by using shadecloth.

Outlooks Showing Confidence for Below-normal Precipitation

(Beth Hall, hall556@purdue.edu)

The roller coaster ride of Indiana weather continues. Things were drying out across the state with signs of browning lawns, rolling vegetation leaves, and lowering pond and stream levels. Then the rains came. Most of the state received between 2 and 3 inches of precipitation from June 20 through 29th – with wetter areas to the south and drier areas to the northeast. While this may seem good enough to relieve any concerns about drought developing, the temperatures have been high to encourage the evaporation of those wet surfaces. As a result, the US Drought Monitor has kept most of the state at “Abnormally Dry”. The climate outlook for July 8-14 shows increased confidence of below-normal precipitation with the possibility of this dryness continuing into mid-July. Additionally, probabilities are significant that temperatures will be above normal – further exacerbating any dryness due to lack of rainfall. The climate outlook for July – provided by the national Climate Prediction Center – is showing strong confidence for above normal temperatures, but uncertainty regarding precipitation (Figure 1).

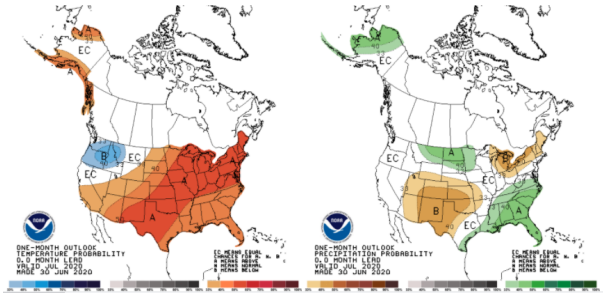

Figure 1. July one-month outlook.

With temperatures continuing to be above normal, accumulated modified growing degree days continue to catch up to levels seen in previous years (Figures 2-3). Beware of elevated heat index values that can increase health risks when working outside. Learn more about how to stay safe during extreme heat and high heat index conditions from the Centers for Disease Control and Prevention.

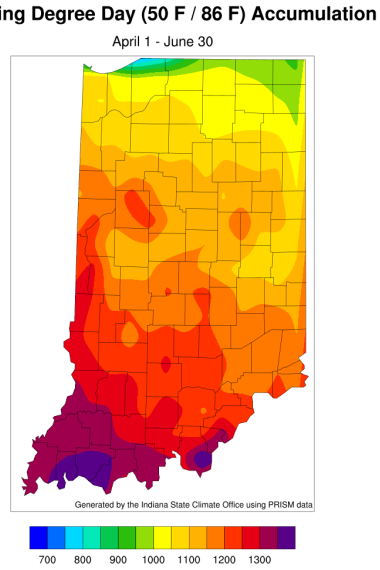

Figure 2. Modified growing degree day accumulations since April 1, 2020.

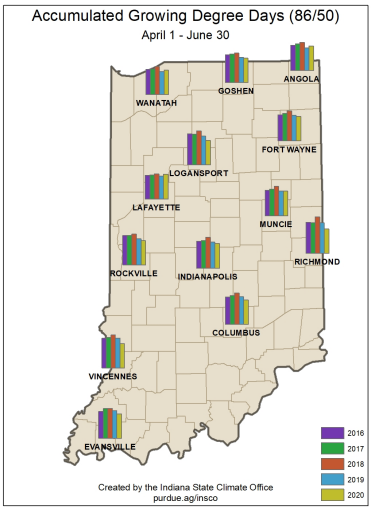

Figure 3. Comparison of the 2020 accumulated modified growing degree days since April 1st to previous years.

Clean Sweep 2020 – Free Opportunity to Dispose Unwanted Pesticides

WHAT: An Indiana Pesticide Clean Sweep Project designed to collect and dispose of suspended, canceled, banned, unusable, opened, unopened or just unwanted pesticides (weed killers, insecticides, rodenticides, fungicides, miticides, etc.) is being sponsored by the Office of Indiana State Chemist (OISC). This disposal service is free of charge up to 250 pounds per participant. Over 250 pounds there will be a $2.00 per pound charge. This is a great opportunity for you to legally dispose of unwanted products at little or no cost.

WHO: All public and private schools, golf courses, nurseries, farmers, ag dealers, cities, towns, municipalities and county units of government or others receiving this notice are eligible to participate.

WHEN/ 9:00 am to 3:00 pm Local Time

WHERE: August 18, 2020: Noble County Fairgrounds, 580 Fair St. Kendallville, IN
August 19, 2020: White County Fairgrounds, 12 N 25 E Reynolds, IN
August 20, 2020: Hancock County Fairgrounds, 620 Apple St. Greenfield, IN
August 25, 2020: Decatur County Fairgrounds, 545 S CR 200 W Greensburg, IN
August 26, 2020: Dubois County Fairgrounds, 4157 S St Rd 162 Huntingburg, IN
August 27, 2020: Hendricks County Fairgrounds, 1900 E Main St. Danville, IN

HOW: Complete the enclosed Pesticide Clean Sweep Planning Form to the best of your ability. Mail, fax or e-mail the completed form to Garret Creason at (765) 494-4331 or gcreaso@purdue.edu no later than Mon., August 10, 2020. Then bring your labeled, leak free and safe to transport containers to the collection site. DO NOT mix materials. In case of an emergency, you should bring with you a list of products you are carrying and a contact phone number.

COVID-19 Guidelines: When you arrive to drop off materials please stay in your vehicle and a team member will check you in. Our team will be unloading one vehicle at a time to maintain physical distancing. If you must exit your vehicle, face masks are encouraged.

*NOTE: OISC reserves the right to cancel this Pesticide Clean Sweep Project if there is not adequate demand. Participants submitting the enclosed planning form by August 10, 2020 will be contacted immediately if cancellation is necessary.

2020 PESTICIDE CLEAN SWEEP PLANNING FORM

I have the following pesticides (weed killers, insecticides, rodenticides, fungicides, miticides, etc.) to bring to the Indiana Pesticide Clean Sweep. I understand that there will be no charge for disposal of up to 250 pounds of pesticides per participant. I also understand that if there is not adequate demand for these disposal services, I will be contacted by the Office of Indiana State Chemist to be notified of the program cancellation.

Contact Name_____ **Contact Phone #** _____

Please indicate at which location you will be participating.

☐ **Kendallville, IN – August 18** ☐ **Greensburg, IN – August 25**

☐ **Reynolds, IN – August 19** ☐ **Huntingburg, IN – August 26**

☐ **Greenfield, IN – August 20** ☐ **Danville, IN - August 27**

List of pesticide products to be disposed:

1. Trade Name _____

Active Ingredient _____

Check One: ☐**Solid** ____**Pounds** ☐**Liquid** ____**Gallons** ☐**Aerosol**

2. Trade Name _____

Active Ingredient _____

Check One: ☐**Solid** ____**Pounds** ☐**Liquid** ____**Gallons** ☐**Aerosol**

3. Trade Name _____

Active Ingredient _____

Check One: ☐**Solid** ____**Pounds** ☐**Liquid** ____**Gallons** ☐**Aerosol**

RETURN BY August 10, 2020 To Garret Creason, gcreaso@purdue.edu **OR 765-494-4331 (fax). Questions may be directed to Garret at 765-494-1585. Additional pesticide products to be disposed of may be listed on the back of this form or a separate sheet.**

COVID-19 Guidelines: When you arrive to drop off materials please stay in your vehicle and a team member will check you in. Our team will be unloading one vehicle at a time to maintain physical distancing. If you must exit your vehicle, face masks are encouraged.

Online Sales Platform – Hoosier Food Market

Hoosier Food Market, an online sales platform where farmers can sell directly to consumers with no overhead costs.

COVID-19 has changed the way we do a lot of things. Purdue Agriculture recognized that many farmers markets may not be operating at the same capacity, and restaurants may not be purchasing the same amount of product as they were before the pandemic. Faculty and staff from the Purdue College of Agriculture teamed up with Microsoft in a collaboration to provide a free online virtual marketplace **that was adapted from the Open Food Network** where growers can make their own individual shops to sell their products, and market masters can work with their growers to offer the same goods they offered before, but just online. They call this platform **Hoosier Food Market** (www.hoosierfoodmarket.com).

You can read more about this platform in the press release from Purdue Agricultural Communications: https://ag.purdue.edu/stories/how-microsoft-and-purdue-ag-are-working-together-to-help-hoosier-farmers/

On-Farm Readiness Reviews (OFRR), a Free Resource to Indiana Produce Growers

During an OFRR, produce safety experts from ISDH, ISDA, and Purdue Extension will visit produce farms in the state to assess readiness for a FSMA inspection. These reviews are free, voluntary, and confidential. An OFRR takes approximately 2 hours, and it is scheduled at a time that is convenient for the grower. The reviewers will not take any notes or photos, as these reviews are simply designed to assist produce growers in implementing practices to meet food safety regulations. At the conclusion of the visit, the reviewers will provide feedback on areas for opportunity and suggestions for improving compliance. This is a great tool for growers to prepare for their first inspection!

Growers can schedule a review by calling Tari Gary at (317) 407-9802, or email TGary@isda.in.gov. If anyone has questions, they may reach out to Tari or contact Dr. Amanda Deering at Purdue by calling (765) 494-0512, or email adeering@purdue.edu.

Question of the Issue (7-2-2020)

(Wenjing Guan, guan40@purdue.edu, (812) 886-0198)

What's this insect? Is it a friend or foe?

Answer to Question from Last Issue (6-18-2020)

(Dan Egel, egel@purdue.edu, (812) 886-0198)

What is causing the spots on the watermelon leaf?

A) anthracnose

B) early blight

C) a contact herbicide

The answer is that the leaf above has been affected by a contact herbicide. The herbicide caused lesions upon contacting the leaf. However, there was no growth of the lesion and no yellowing of the leaf since the herbicide caused no effect after the initial contact. While the distribution of the lesions in the photo above appears like a disease, the lack of ridges and yellowing in the leaf above is why it is not a disease. In the photo below, which is anthracnose of watermelon, the lesions have many ridges caused

by growth of the lesion. Plus, there is a bit of yellowing of the lesions.

Anthracnose of watermelon.

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