VEGETABLE CROPS HOTLINE

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

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<http://www.btny.purdue.edu/pubs/vegcrop>

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LATE BLIGHT OF POTATO AND TOMATO UPDATE - *(Dan Egel)* - These diseases have been confirmed on potatoes in southern Michigan in St. Joseph County and on tomatoes in Harrison County in eastern Ohio. Late blight of tomato has also been reported in northern Kentucky (***Vegetable Crops Hotline*** issue no. 523). More information about the Michigan outbreak can be found here <**www.ipmnews.msu.edu/vegetable/vegetable/tabid/151/articleType/ArticleView/articleId/2863/More-information-on-potato-late-blight-in-Michigan.aspx**> and more information about the Ohio outbreak can be found here <**http://wayne.osu.edu/top-stories/diseases-found-in-area-tomato-cucumer-and-squash-plantings**>.

Details of management recommendations are given in issue no. 523 of the ***Hotline***. Potato and tomato growers in close proximity to one of the disease outbreaks should consider a specialized fungicide program described in issue no. 523 of the ***Hotline***. All potato and tomato growers should scout their crops for symptoms and become familiar with management options should late blight become a threat. Please call Dan Egel for more information about disease management including publications or to report suspicious plants. Tomato or potato plants with suspicious symptoms can also be sent to the Purdue University Plant and Pest Diagnostic Laboratory (P&PDL), LSPS, Room 101, Purdue University, 915 W. State Street, West Lafayette, IN, 47907-2054; Phone: (765) 494-7071; Fax: (765) 494-3958; <**www.ppdl.purdue.edu**>.

DOWNY MILDEW OF CUCURBITS - *(Dan Egel)* - This disease was reported on cucumber in Holmes County in east central Ohio on June 23. Although westerly winds will tend to push the downy mildew spores east away from Indiana, all cucurbit growers should follow the progress of the epidemic at this website <**http://cdm.ipmpipe.org/**> or by reading the ***Vegetable Crops Hotline***. All cucurbit growers should scout their fields for symptoms of this disease and contact Dan Egel if symptoms are suspected. Below find some background information about downy mildew and management recommendations.

Downy mildew may affect all cucurbits including cucumber, muskmelon, squash, pumpkin, watermelon and zucchini. Downy mildew can be recognized by the yellow, often angular lesions on the surface of the leaves (Figure 1). The key symptom of this disease is the dark 'fuzz' that is present on the underside of leaves under moist conditions. Severely affected plants may be defoliated and thus yield and quality of the fruit may suffer.

Figure 1: Downy mildew causes a dark fungal growth on the underside of leaves under moist conditions while powdery mildew causes a white growth as seen here on this pumpkin leaf. Color photographs of downy mildew on cucumber can be found on page 163 of the ***Midwest Vegetable Production Guide for Commercial Growers 2010*** <**www.btny.purdue.edu/Pubs/ID/ID-56/**>. *(Photo by Dan Egel)*

The fungus that causes downy mildew of cucurbits does not overwinter in Indiana. The organism must be blown in on wind currents. Historically, the fungus overwinters in states that border the Gulf of Mexico where green tissue of cucurbits is available for infection year around.

In addition to Ohio, downy mildew has been reported this year in Canada, North Carolina, South Carolina, Georgia, Florida and Texas. Two field plots have been recently planted in Indiana to various cucurbits and will

be scouted weekly for this disease. A publication that describes downy mildew of pumpkins including color photographs may be found here <**www.ces.purdue.edu/extmedia/BP/BP-140-W.pdf**>. It is a good idea to become familiar with what fungicides are labeled for downy mildew. Growers may consult the ***Midwest Vegetable Production Guide for Commercial Growers 2010*** or the ***BP-134*** and ***BP-135*** <**www.btny.purdue.edu/Pubs/#vegetables**>. Since most of the fungicides that are effective against downy mildew are very specialized, it does not make economic sense to apply these products unless the disease has been observed near by. For most Indiana growers, I do not think it makes sense to apply specialized fungicides at this point. Contact Dan Egel with any questions or a copy of the publications listed above.

Weed Management Options in Wet Conditions - *(Liz Maynard)* - It's no news that wet weather makes weed management difficult. Cultivation may not be possible due to soil conditions, or may be ineffective if weeds re-root before they dry out. Soil applied herbicides can leach out of the zone where they are effective. Moist soil conditions mean weeds can continue to germinate and grow. Here are some things to keep in mind when making decisions about weed control.

Weeds that emerge before or shortly after the crop is planted have the greatest potential to reduce yield and will produce the greatest amount of seed, if allowed to survive. Controlling these weeds should be a high priority.

Weeds that are close to the crop row reduce yield more than weeds that are farther from the row.

If it is not possible to control all weeds when they are still small, make plans to prevent seed production and dispersal later in the season. This will likely mean hand weeding or hoeing; it can be worth it to reduce weed problems in future years.

In some operations, if weeds get out of control between crops on plastic mulch or beds, mowing weeds between the rows is an option to reduce competition and make it easier to manage the crop.

Post-emergent herbicide options are limited. Glyphosate products may be used between rows for most vegetables if applied with a hooded or shielded sprayer, or for some crops a wiper applicator. It is important to avoid any contact of glyphosate with the crop. For crops on plastic mulch, avoid spraying glyphosate on the mulch because if a crop leaf contacts the mulch it may absorb the herbicide. Preharvest intervals apply for some crops. The advantage of glyphosate is that it will control both grasses and broadleaves and thorough coverage of weeds is not essential because it is systemic. The disadvantage is the potential for systemic crop injury if the spray contacts the crop, and in fields with a long history of reliance on glyphosate there may be populations of weeds that are not well controlled.

Aim® (carfentrazone) is also labeled on many vegetables for application in row middles with a hooded sprayer. Aim® controls many emerged broadleaf weeds. It is a contact herbicide so thorough coverage of weeds is important. It will work best on small weeds.

The systemic grass herbicides Poast® (sethoxydim) and Select® (clethodim) are labeled for many vegetables. These products may be applied over the top of the labeled crops to kill grassy weeds. They will not affect broadleaf weeds or nutsedge. Preharvest intervals vary depend on the crop.

Other post-emergence herbicides are labeled on a smaller range of vegetable crops and most control a narrower range of weeds. Refer to specific crop sections in the ***Midwest Vegetable Production Guide 2010 (ID-56)*** and products labels for additional information.

Endosulfan Cancellation - *(Rick Foster)* - On June 9, the Environmental Protection Agency announced its plan to phase out and cancel all uses of the insecticide Endosulfan®, sold under the trade names Thionex® and Thiodan®. Endosulfan® is currently registered for control of various insects, especially those with sucking mouthparts such as aphids, on a number of vegetable crops, including beans, cole crops, cucurbits, fruiting vegetables and potatoes. Endosulfan® has been identified as a Persistent Bioaccumulative Toxicant, which is the reason for its impending cancellation. EPA and the manufacturer, MANA, will negotiate the details of the phase-out. Existing stocks of Endosulfan®can still be used according to label directions.

Fungicide Label Clarification - *(Dan Egel)* - Inspire Super® cannot be applied aerially in Indiana according to Syngenta. Some fungicide labels are unclear on this point. Note also that Inspire Super® must be applied in 20 gallons per acre for control of gummy stem blight of cucurbits (ground application only).