Vegetable Crop Update

A newsletter for commercial potato and vegetable growers prepared by the University of Wisconsin-Madison vegetable research and extension specialists

No. 4 – May 7, 2014

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Calendar of Events

July 22– UW-Hancock Agricultural Research Station Field Day, Hancock, WI
August 12-14 – Farm Technology Days, Stevens Point, WI
August 21 – 1:00PM Antigo Field Day, Antigo, WI

Weed Management Update – Jed Colquhoun, Professor & Extension Weed Scientist, UW-Madison, Dept. of Horticulture, 608-890-0980 (office), Email: colquhoun@wisc.edu

Keep in mind the Dual Magnum 24(c) Special Local Needs label in Wisconsin

As you finalize weed management plans for your 2014 vegetable crops, please remember that Wisconsin growers have access to a Dual Magnum Special Local Needs 24(c) registration. This registration is worthy of a reminder as the use doesn't appear on most online label search services or in UWEX annual pest management guides. The special label is available via the DATCP web site referenced below.

This label is valid through December 31, 2017 in Wisconsin only.

Vegetable crops on the label include: transplanted bell and non-bell pepper (excluding Tabasco), transplanted broccoli, transplanted Brussels sprout, transplanted cabbage, transplanted cauliflower, transplanted Chinese cabbage (Napa), carrot, transplanted celery, cucumber, dry bulb onion, transplanted eggplant, daikon radish, garden beet, parsnip, radish, turnip, rutabaga, leek, green onion, spinach and Swiss chard. These crops have very few weed control options, so the Dual Magnum 24(c) can be a very useful management strategy.

The label is available through the Wisconsin DATCP special registrations web page: http://datcp.wi.gov/Plants/Pesticides/Special_Registrations/. As always, read and follow the label prior to use.

Greenhouse transplant update – Brian Hudelson, Senior Outreach Specialist, UW-Plant Pathology & Director of the Extension Plant Diagnostic Disease Clinic, 608-262-2863 (clinic), Email: bdh@plantpath.wisc.edu

UW-Plant Pathology & UW-Extension Plant Disease Diagnostic Clinic Website: http://labs.russell.wisc.edu/pddc/

Greenhouse Edema

More greenhouse-grown plant samples were coming in with edema. Pelargonium is a commonly susceptible crop, but pepper was also affected this week. Edema, a water imbalance in plants, is

often associated with dim lighting (cloudy skies), cool air and high soil moisture in the greenhouse. Plants take up all the water internally, but they unable to eliminate it all of it through regular transpiration. The imbalance creates a condition where the plants will push cells out of the leaf surface that eventually encrust and die.

Symptoms of edema include scaly-looking material on the bottom of the leaf surface, spotting, yellowing, and in severe cases, large areas of dead tissue. Edema, especially when found on greenhouse geraniums, may have the appearance of bacterial blight to growers, but no evidence of that has been found in the submitted samples. With sunnier, warmer weather, less edema should be a problem in greenhouses.

Photo credit: Joe LaForest,

Edema (UWEX): http://labs.russell.wisc.edu/pddc/files/Fact_Sheets/FC_PDF/Edema.pdf
Water [imbalance] (APS): https://www.apsnet.org/publications/apsnetfeatures/Pages/Water.aspx

Ethylene toxicity

A condition causing premature leaf loss and occasionally distorted growth can be attributed to ethylene gas generated by heating systems in the greenhouse. Ornamentals and tomato were affected in a greenhouse heated by propane gas and wood burning. A backdraft from the propane heater was noticed. When propane is not burned completely, ethylene can be a by-product. Ethylene is one of the gases typically produced from burning wood.

Avoiding ethylene problems (MSU):
http://www.flor.hrt.msu.edu/assets/Uploads/Avoidingethyleneproblems.pdf

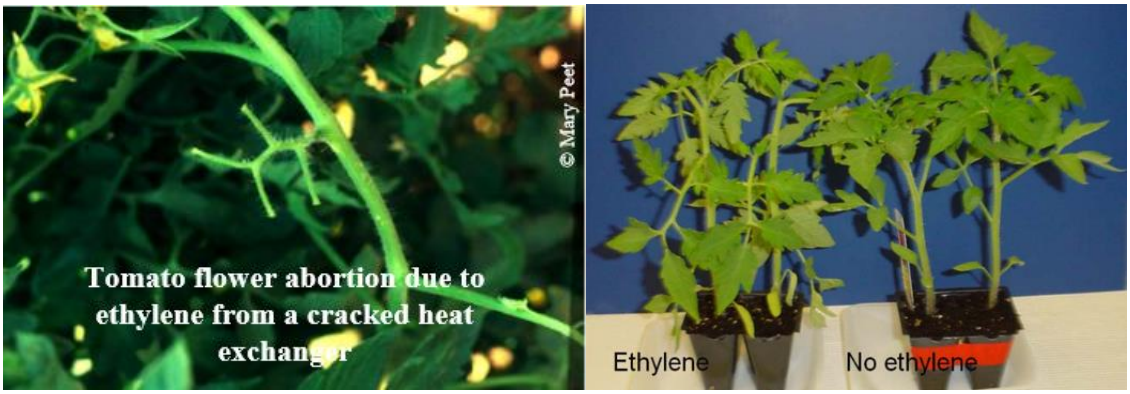

Photo Credit: Michelle Jones, Ohio State Univ. Image shows epinasty or the downward curvature of the petioles – common symptom of ethylene damage in tomatoes.

Vegetable Disease Update – Amanda J. Gevens, Assistant Professor & Extension Vegetable Plant Pathologist, UW-Madison, Dept. of Plant Pathology, 608-890-3072 (office), Email: gevens@wisc.edu & Dr. Ken Frost, Post Doctoral Research Associate, Dept. of Plant Pathology, Email: kfrost@wisc.edu.

Vegetable Pathology Webpage: http://www.plantpath.wisc.edu/wivegdis/

As we look ahead to disease concerns for production in 2014, let's first consider the resulting effects of this long, cold winter. While it is likely that a high percentage of our above ground debris-borne plant pathogens froze to death if snow cover was limited on open fields, the pathogens that live beneath the soil surface and have specialized protective fungal structures for long term survival may have survived just fine. Remember that many of our most persistent soilborne pathogens are adept at surviving winters in northern climes.

When soil temperatures do not get low enough to kill potato volunteers, the tubers can remain alive through the winter and emerge as unwanted plants in the spring. While the volunteers can create stubborn weeds in the following season, they can also harbor pathogens such as *Phytophthora infestans*, causal agent of late blight, and initiate the disease in the subsequent production season. A model for categorizing risk of survival of potato volunteers was developed by researchers at Michigan State University. The model is based on soil temperatures at 2 and 4 inch depths occurring between November 1 and March 31. Based on the accumulated hours of cold temperatures below -3◦C (27◦F) at Hancock and Arlington, Wisconsin (from Oct 1 2013 to Mar 31 2014) there is low risk for volunteer survival.

Hancock - 204 hrs below -3°C at 2"; 120 hrs below -3°C at 4"
Arlington - 984 hrs below -3°C at 2"; 563 hrs below -3°C at 4"

Indeed, risk will vary by location, soil type, vegetative ground cover, as well as snow cover, but the risk assessment provides helpful information in considering weed and disease management in the season to come. The categories of risk are outlined as follows:

- If tubers were exposed to temperatures < 27°F (-3C) for >120 (5 days) hours between Nov 1 and Mar 31 at 4 & 2 inches depth, then the risk of tuber survival is low.
- If tubers were exposed to temperatures < 27°F for <120 hours at 4 inches depth and >120 hours at 2 inches depth, then there is a moderate risk of tuber survival.
- If tubers were exposed to temperatures <27°F for <120 hours at 4 inches depth and <120 hours at 2 inches depth, then there was a high risk of tuber survival.