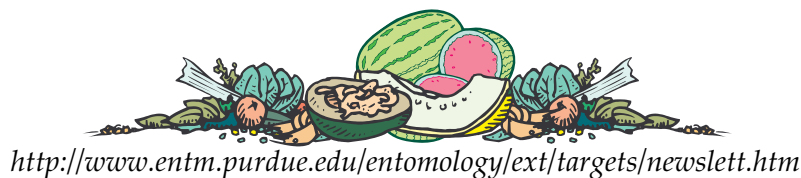


VEGETABLE CROPS HOTLINE

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

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IN THIS ISSUE

- BACTERIAL FRUIT BLOTCH
- MORE BACTERIAL FRUIT BLOTCH
- WATERMELON BOOK
- EXPANDING SALES WITH THE FARMERS' MARKET NUTRITION PROGRAM
- ACTIGARD UPDATE
- COLD WEATHER
- FUNGICIDE USE IN THE GREENHOUSE

BACTERIAL FRUIT BLOTCH - (Dan Egel) - The following article was written as a *Vegetable Crops Hotline* - BULLETIN, April 6, 2001. Several watermelon growers have been asked to destroy seeds or seedlings of the hybrid triploid variety Carousel (Lot. # HWT 0020101), due to contamination with the bacterium that causes Bacterial Fruit Blotch.

If you have planted this lot number and the seedlings have not yet or have just barely emerged, destroy the seedlings and flats. A good way to destroy the seedlings would be to bury them. It may be desirable to destroy any seedlings in flats that border the contaminated seedlings. If the seedlings have leaves and have been watered overhead several times, there is a chance that seedlings in the remainder of the greenhouse are contaminated. In such a case, it will probably be necessary to destroy the rest of the seedlings in the greenhouse.

Disinfect areas of greenhouses or entire greenhouses by first cleaning them of any soil or plant debris. Use a disinfectant such as 10% bleach or a quaternary ammonia compound such as Greenshield or Physan 20. Be sure to wear protective gear and follow the directions. Greenhouse sanitation methods and seedling health are discussed in BP-61 <<http://www.agcom.purdue.edu/AgCom/Pubs/botany.htm>> available from Media Distribution 1-888-EXT-INFO (398-4636).

Bacterial fruit blotch spreads by water splashed from seedling to seedling. Greenhouses, especially those that are watered overhead, provide perfect conditions for the spread of the disease. Unfortunately, the symptoms of the disease are not always obvious until fruit are present.

Lesions on seedling leaves include watersoaked, brown necrotic areas, often with a yellow halo.

Older lesions will have a necrotic area in the center of the lesion. The primary symptom is a dark green irregular blotch that occurs on the top of the watermelon fruit. Watermelons are the only host with economically important damage. Sometimes the rind will crack and white ooze will come out of the fruit. Although bacterial fruit blotch will seldom invade the fruit farther than the rind, the fruit may start to rot from other organisms.



MORE BACTERIAL FRUIT BLOTCH - (Dan Egel and Dr. Anthony Keinath, Clemson University) - Growers who may have discovered this disease in their fields or suspect the disease may be present should consider copper applications in the field.

Applications should begin when the first male flowers appear. Two different application schedules may be used: 1) apply 1 pound of copper hydroxide fungicide six times at weekly intervals OR 2) apply 2 pounds of copper hydroxide fungicide three times at 2-week intervals. Alternatively, 2.5 pounds of ManKocide, a combination product of mancozeb and copper hydroxide, may be used on the two-week schedule.

Copper formulations are not recommended for control of fungal diseases such as anthracnose or gummy stem blight.



WATERMELON BOOK - (Dan Egel) - A new book on watermelon arrived on my desk the other day. "Watermelons: Characteristics, Production and Marketing" is edited by Don N. Maynard and published by ASHS press. This paperback book covers almost every aspect of the watermelon industry in 227 pages. Those involved in the seed industry will be interested in chapters on *Breeding and Seed Industry* and *Biotechnology*. The remainder of the book does a

good job of relating production issues such as Cultural Management and pest control. Richard X. Latin, Professor of Botany and Plant Pathology and former Purdue employee, Gerald Brust, IPM specialist, are co-authors of chapters on diseases and insects, respectively. These chapters discuss Indiana problems as well as pests from other watermelon producing regions. The book also has chapters about *Harvest and Postharvest Handling and Marketing*.

The chapter on *Cultural Management* includes useful tables on fertility. Information is included on injection schedules for nitrogen and potassium for drip irrigated watermelons and plant tissue analysis at several different watermelon growth stages. Fertility recommendations are included from regions around the country; unfortunately, Indiana is not included. Similarly, in an Appendix having to do with production costs, Indiana data is not included. Nevertheless, the book should be a useful guide to individuals wanting to learn more about watermelon production on a nationwide basis.

"Watermelons: Characteristics, Production and Marketing" is available from ASHS Press, 113 South West Street, Suite 200, Alexandria, VA 22314 (703) 836-4606.



EXPANDING SALES WITH THE FARMERS' MARKET NUTRITION PROGRAM - (Liz Maynard) - Do you sell produce at a farmers' market? Would you like to encourage more people to buy vegetables at your stall? Read on!

The Farmers' Market Nutrition Program (FMNP) is designed to increase sales at farmers' markets and to make locally grown fruits and vegetables available to low-income women and their children. The program provides checks to low-income women who are pregnant or who have young children. The checks can only be used to buy locally grown, unprocessed fruits and vegetables at approved farmers' markets. Farmers receiving the checks can deposit them just like cash into a bank account. Last year, \$225,000 worth of checks were redeemed in 20 markets throughout Indiana, according to Ms. Kathy Lauerman from the Indiana State Department of Health.



The FMNP is associated with the Federal Special Supplemental Nutrition Program for Women, Infants and Children, popularly known as WIC. Funding for FMNP comes from the USDA and the State of Indiana. The Indiana State Dept. of Health manages the FMNP throughout the state.

In order for a farmers' market to get approved to accept the checks, someone associated with the market should contact Ms. Lauerman (see below) and arrange for a presentation about FMNP. There is no charge to the market or to individual growers for being involved with program. Just because a market is approved does not mean that all market members must join the program and accept the checks. Although farmers' markets are the primary source of produce bought under this program, growers selling their produce through a Community Supported Agriculture (CSA) arrangement may also be eligible to participate.

For more information, contact: Ms. Kathy Lauerman, ISDH, Division of Nutrition, Indiana WIC Program, 2 North Meridian, Section 7A, Indianapolis, IN 46204; phone: 317-233-5576; fax: 317-233-5609; e-mail: klauerma@isdh.state.in.us.



ACTIGARD UPDATE - (Dan Egel) - At this time, Actigard is labeled on tomatoes, spinach, and tobacco only. An article in issue 387 of the *Vegetable Crops Hotline* may have implied otherwise. We are sorry for any inconvenience this may have caused.



COLD WEATHER - (Dan Egel and Chris Gunter) - This past week brought sufficiently cold weather to damage many vegetable plants. This past week also brought several questions regarding how commercial growers can combat the cold weather. In particular, we fielded questions with regard to using water to keep plants from freezing.

Most of us have seen photographs of strawberry plants or citrus plants that are covered with ice as a result of having been overhead irrigated. Could such an approach help us here in Indiana?

First, let's investigate why ice formation on plants can help prevent freeze damage. Some folks may remember from physics that when ice forms, a certain amount of heat is released in the process. So when water that has been sprayed on plants later freezes, the heat that is released may help to keep the plant itself from freezing.

In order for the process to successfully protect plants, the water must be applied to the plant surface until the ice starts to melt the next day. This is because heat will only be given off as long as water continues to freeze. Turning off the water too early will immediately expose the plants to freezing temperatures. Because of

the way an overhead irrigation system, such as a center-pivot, moves over the plants, it will probably not give adequate protection to all the plants during a freeze. On the other hand, a solid-set irrigation system continues to put water on the plants that it reaches. The heat, given off as the water freezes on the plant surface will give some protection.

It is important to note that the water must be applied as long as the temperatures are below freezing. In some cases, as with fruit trees, if the freezing period is long enough, a thick layer of ice is formed. The weight of the ice can damage the crop. This can be greater than the damage that the freezing temperatures would have caused if you didn't try to protect the plant with water.

Additional information about the use of water to protect plants can be found at <<http://www.hort.Purdue.edu/fff/FFF96/FFF9603.pdf>>. A good general article about cold weather damage on plants is HO-203, which can be accessed at <<http://www.hort.purdue.edu/AgCom/PubsHO/HO-203.html>> Or call 1-888-EXT-INFO (398-4636).



FUNGICIDE USE IN THE GREENHOUSE - (Dan Egel) -

Fungicides are generally not necessary in the greenhouse. The very nature of greenhouses should help to prevent the introduction of bacteria and fungi that can cause disease. However, vegetable growers often ask about fungicides to use in the greenhouse. Plus, there are times for which fungicide use is appropriate.

Only fungicides which specifically mention greenhouse use are labeled for the greenhouse. Few fungicides are labeled for use in the greenhouse on vegetables. Some formulations of Dithane (e.g., Dithane F-45) are labeled for greenhouse use on vegetables. Some copper formulations (e.g., Kocide 101) are labeled for greenhouse use on tomatoes. A fumigant, Exotherm Termil, is labeled for use on tomatoes for certain diseases. Check with your chemical supplier and be sure to read the label. The Midwest Vegetable Production Guide for Commercial Growers 2001 has information on fungicides labeled in the greenhouse.

One of the most common transplant disorders is damping-off. However, there are no fungicides labeled for greenhouse use on vegetables that will combat this disease. Note that the foliar fungicides listed above will not affect fungi in the soil or have any affect on fungi already within the plant.

Managing transplant disorders relies on prevention since few fungicides are labeled for use in the greenhouse. This is particularly true with damping off. Prevention issues have been addressed elsewhere, BP-61 <<http://www.agcom.purdue.edu/AgCom/Pubs/botany.htm>>

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