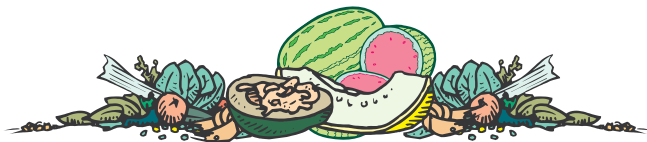


VEGETABLE CROPS HOTLINE

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

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

No. 391
May 31, 2001



<http://www.entm.purdue.edu/entomology/ext/targets/newslett.htm>

IN THIS ISSUE

- *FUSARIUM WILT*
- *BACTERIAL FRUIT BLOTCH*
- *COOL TEMPERATURES*
- *WHY RINSE PESTICIDE CONTAINERS?*
- *THIAMETHOXAM INSECTICIDES*
- *MAGNESIUM AND MANGANESE PROBLEMS ON MELONS*
- *DUAL MAGNUM SECTION 18*

FUSARIUM WILT - (Dan Egel) - I have received numerous calls regarding watermelon seedlings that have wilted in the field. All the cases I have observed so far are due to Fusarium wilt of watermelon. Fusarium wilt is caused by a fungus that survives long periods in the soil. Plants may wilt a leaf at a time or suddenly, depending on the amount of fungus in the soil and weather conditions. The roots and exterior of the stem of wilted plants appear to be unaffected; however, the internal stem tissue of affected plants often appears brown. Fusarium wilt often occurs among clusters of plants scattered across a field.

Management of Fusarium wilt may be accomplished through variety selection and rotation. However, no varieties are completely resistant to the Fusarium wilt fungus. High populations of the soil fungus will cause many varieties to show symptoms. Crop rotations of 5 to 6 years will help lessen the incidence of Fusarium wilt; however, the fungus will survive upwards of 10 years in the soil without watermelon.

Transplants replanted in affected fields may later show symptoms of Fusarium wilt. Growers desiring to replant can help lessen the impact of the disease by using varieties with partial resistance to Fusarium wilt. The fungus that causes Fusarium wilt in watermelon does not affect muskmelon, cucumbers and pumpkins. Therefore, these plants may be replanted into affected fields.



BACTERIAL FRUIT BLOTCH - (Dan Egel) - The watermelon hybrid triploid variety Carousel (Lot. # HWT 00218A) has been associated with an outbreak of bacterial fruit blotch. Note that this is an additional lot # to that reported earlier in the Hotline.

If you have planted this lot number and the seedlings have not or just barely emerged, destroy the seedlings and flats. 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.

Growers who may have discovered this disease in their fields or suspect the disease may be present should consider copper applications in the field.

Please see **Hotline** Issue 388 for additional information and management guidelines.



COOL TEMPERATURES - (Liz Maynard) - The past week has brought cool temperatures, with highs in the low 60s and lows in the 40s in NW Indiana. Crop growth has slowed. Warm season crops including squash, melons, and cucumbers may show signs of chilling injury and sunken spots of the leaves. If the soil is not warmed by plastic, slow root growth and even root death can occur.

Flower and fruit development are also affected by cool temperatures. In cucumber, squash and pumpkin, the cooler temperatures promote development of female flowers rather than male flowers. For some summer squash, this may mean that some female flowers open before any male flowers are open. If that occurs, and the female flowers do not get pollinated then some fruit may abort.

Pepper fruit shape is affected by low temperatures. Night temperatures 45 to 50°F during flower development can cause the fruit to be smaller than normal and somewhat flattened, sometimes with a point on the blossom end. With night temperatures of 55°F-60°F, pollen may not develop properly causing some fruit to be small and seedless.

Tomato flower clusters respond to low temperatures with increased branching and larger flowers when exposed early in development (weeks before buds are visible). Temperatures of 60°F days and 50°F nights, 4 to 5 weeks before flowering of a cluster, may increase the amount of catfaced fruit (large, misshapen fruit with large blossom-end scars).

While we see the slowed crop growth now, the effects on fruit won't be apparent for weeks or months.



WHY RINSE PESTICIDE CONTAINERS?

- (Sponsored by: Indiana Farm Bureau Inc., Indiana Plant Food & Ag Chemical Assn., and Office of the Indiana State Chemist; In cooperation with: Solid Waste Management Districts and Purdue University Cooperative Extension Service) - It's easy, saves money, helps protect people, and the environment.

1. Rinsate from the containers, when added right into the sprayer tank, efficiently and economically uses all pesticides in the container. This eliminates the need to store and later dispose of the rinsate.
2. Unless rinsed from the container immediately, some pesticides will solidify quickly and become difficult to remove.
3. Rinsing pesticide containers is a good, sound agricultural and environmental practice.
4. Proper rinsing is required by federal and state regulations.

There are two different procedures for properly rinsing pesticide containers:

1. PRESSURE RINSING
2. MULTIPLE RINSING



Pressure Rinsing: Pressure rinsing forces remaining pesticide from containers by using a special nozzle attached to the end of a hose. It may be faster and easier than multiple-rinsing and can be used with plastic and non-pressurized metal pesticide containers.

How to Pressure Rinse:

1. Remove cover from the container. Empty the pesticide into the spray tank and let the container drain for 30 seconds.
2. Continue holding the container upside down over the sprayer tank opening so rinsate will run into the sprayer tank.
3. Insert the pressure-rinse nozzle by puncturing the side (near the bottom) of the pesticide container opposite the opening.
4. Rinse for length of time recommended by the manufacturer (generally 30 seconds or more).
5. Do not replace cover. Allow the container to dry for recycling.

Multiple Rinsing: It means just that, rinsing the container multiple times. Multiple rinsing can be used with plastic, non-pressurized metal and glass containers.

How to Multiple-Rinse:

1. Remove cover from the container. Empty the pesticide into the sprayer tank and let the container drain for 30 seconds.
2. Fill the container 10% to 20% full of water or rinse solution.
3. Secure the cover on the container.
4. Swirl the container to rinse all inside surfaces.
5. Remove cover from the container. Add the rinsate from the container to sprayer tank and let drain for 30 seconds or more.
6. Repeat steps 2 through 5 two or more times, until rinsate is clean.

Do not replace cover. Allow the container to dry for recycling.



THIAMETHOXAM INSECTICIDES - (*Frankie Lam*) - The Environmental Protection Agency (EPA) granted registration to several thiamethoxam insecticides, including Actara and Platinum, during May. Thiamethoxam is a neonicotinoid insecticide that offers good control of a broad range of insects at low application rates. The chemical has been classified by the EPA as an "organophosphate alternative."

According to the labels, Actara, which is a foliar insecticide, has been registered for use in cucurbits, fruiting vegetables, potatoes, tobacco, pome fruit, and pear. Platinum is a soil insecticide that has been registered for use in cucurbits, fruiting vegetables, potatoes,

and tobacco. The insecticides are recommended for the control of aphids, thrips, flea beetles, whiteflies, stink bugs, Colorado potato beetles, potato leafhoppers, Japanese beetles, tarnished plant bugs, and wireworms.

These insecticides are selective insecticides and should not impact beneficial insects adversely. The restricted-entry intervals of these two insecticides are 12 hours. However, they are toxic to bees, aquatic invertebrates, and fish. Thus, these insecticides should not be applied or allowed to drift onto blooming plants if bees were foraging in the treated area and should not be applied directly to water. Be certain to read the label carefully before using any pesticide.



MAGNESIUM AND MANGANESE PROBLEMS ON MELONS - (*Rick Latin and Dan Egel*) - We have observed several samples of cantaloupe and watermelon vines showing symptoms of magnesium deficiency or manganese toxicity.

Both disorders are related to acid soils and usually occur in clusters in a field. Magnesium deficiency appears on sandy ridges and can be recognized by interveinal yellowing and death of tissues on older leaves. Manganese toxicity also first occurs on older leaves but appears in heavier or darker sands, often in swales. The diagnostic features of manganese toxicity are the tiny pin hole type lesions with yellow halos clustered between the veins. Leaves are best viewed when held up to the sun.

These disorders can easily be confused with an infectious disease. Symptoms may seem to "spread" from areas of the lowest pH to areas of somewhat higher pH. Individual rows seem to be worse than adjacent rows. Such rows may have received less lime. The remedy for these disorders is to raise the pH of the soils involved. However, once crops are within a week or so of harvest, there is no remedial treatment.

Although growers may have soil tested and spread lime before the season, there may still be pH problems in some areas of the field. Note that some nitrogen fertilizers lower soil pH. Learn the symptoms of these disorders so you won't be wasting fungicides on a nonexistent disease.



DUAL MAGNUM SECTION 18 - (*Dan Egel*) - The herbicide Dual Magnum has been granted a Section 18 for use on tomatoes. An article in the **Hotline** Issue 390 implied otherwise. I regret any inconvenience this may have caused.

It is the policy of the Purdue University Cooperative Extension Service, David C. Petritz, Director, that all persons shall have equal opportunity and access to the programs and facilities without regard to race, color, sex, religion, national origin, age, marital status, parental status, sexual orientation, or disability. Purdue University is an Affirmative Action employer. 1-888-EXT-INFO <http://www.agcom.purdue.edu/AgCom/Pubs/index.htm> Disclaimer: Reference to products in this publication is not intended to be an endorsement to the exclusion of others which may have similar uses. Any person using products listed in this publication assumes full responsibility for their use in accordance with current directions of the manufacturer.

Vegetable Crops Hotline
c/o Daniel S. Egel
Southwest Purdue Agricultural Program
4369 N Purdue Rd
Vincennes, IN 47591