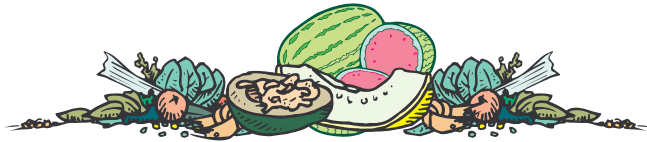


VEGETABLE CROPS HOTLINE

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

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PHASE-OUT OF INSECTICIDE

GUTHION - (Frankie Lam) - Bayer CropScience has voluntarily agreed to phase out the labeled uses of insecticide Guthion, although the chemical has been used for over 45 years in agriculture. Guthion is used on a wide variety of fruit and vegetable crops, tree crops, grains, cotton, and ornamentals. Phase-out of the insecticide could impact growers of tomatoes, cauliflower, cucumber, eggplant, melon, onion, pepper, spinach, and other vegetables.

The chemical of Guthion is azinphos-methyl, which belongs to organophosphate insecticide that has a contact and stomach action. The chemical affects the functions of the insects central nervous system. It inhibits enzymes (cholinesterases) of the nervous system and blocks the degradation of the neurotransmitter acetylcholine. The chemical causes rapid twitching of the involuntary muscles, followed by paralysis and death of the insects.

According to the Azinphos-Methyl Summary <<http://www.epa.gov/pesticides/op/azinphos/aznsum.htm>> of the United States Environmental Protection Agency (EPA), the chemical can cause cholinesterase inhibition in humans; which at high doses results in nausea, dizziness and confusion, and at very high exposure, such as accidents and major spills, respiratory paralysis and death. In addition, the summary indicated that dietary risk is high from acute exposure, worker risk is very high, drinking water risk is uncertain, ecological risks are high and that aggregate risk is of concern from acute exposure. Acute risk refers to the toxic effects produced by a single exposure to a toxicant, whereas chronic risk refers to the effects produced by prolonged or multiple dose exposure to a toxicant.

Although Bayer disagrees with EPA's conclusions on the withdrawal or greatly limited uses of Guthion, the company has voluntarily cancelled use immediately (without phase-out) for about 30 crops, cancel with 4-year phase-out on 7 uses, and conditioned for 4-year registration on 8 uses listed on the label.

The crops listed as, "without phase-out" and not permitted September 1, 2002 are: alfalfa, beans (succulent and snap), birdsfoot trefoil, broccoli, cabbage (including Chinese), cane berries (foliar application only), cauliflower, celery, citrus, clover, cucumbers, eggplant, filberts, grapes, melons (honeydew melons, muskmelons, and water melons), nectarines, onions (green and dry), parsley, pecans, peppers, plums and dried plums, quince, spinach, strawberries, and tomatoes. However, the existing stock can be used before October 30, 2005. The 7 uses cancelled with a 4-year phase-out include almonds, cherries (tart), cotton, cranberries, peaches, pistachios, and walnuts. The 8 uses is conditioned for time-limited registration of 4-year are: apples and crab apples, blueberries, Brussels sprouts, cane berries (application to cane and soil only), Cherries (sweet), nursery stock (quarantine use), pears, and southern pine seed orchards.

At the end of the 4-year period, if registrants believe the benefits continue to outweigh the risks, they may apply for amendments to extend the life of the registrations. The EPA will then determine whether the benefits continue to outweigh the risks, and will extend the registrations if they continue to meet the risk-benefit standard. Otherwise, at the end of the 4-year period, Guthion will be phased-out from the industry. For additional information on the phase-out of Guthion, please refer to <http://www.bayerfqpa.com/docs/decision_documeSAZM-nov-1.doc>. Be certain to read and follow the label carefully before using any pesticide.

ROOT KNOT-NEMATODES - (Andreas Westphal) - Root knot nematodes, belonging to the species *Meloidogyne* spp., are microscopic round worms. These microscopic animals live below ground and feed on roots of their host plants. During most of the year, plant-parasitic nematodes can only be detected following specialized extraction procedures. One of the more easily detectable nematode groups is the one that includes the root knot nematodes. While there are several different kinds of root knot nematodes known, they all have a particular life cycle in which they become sedentary (immobile) in the host plant roots and trigger the roots to swell. Such nematode-induced deformations, called galls or knots, can be seen with the naked eye. Late summer is a good time to check for nematode problems in watermelon or muskmelon fields. When searching fields with unknown history concerning root knot nematodes, one should focus on areas of reduced growth and overall reduced plant vigor. Nematode attack can occur in various soil layers. Accordingly, it is necessary to dig the root systems from the soil



Dan Egel

with a shovel or spade at least to the depth of regular soil tillage (or at least 30-cm deep). Roots can then be examined for the galls. While the presence of root knot nematodes is not always associated with economic yield loss, it is important to know if fields are infested. Cropping sequences, long rotations, and variety selection, avoiding susceptible host plants in infested fields, are two ways to reduce plant damage due to the nematode. Also, chemical control options can be considered and tested in limited areas in fields with root knot nematode infestations. Management of root knot nematodes is difficult. Root knot nematodes found in Indiana can infect a number of



plants, including beans, canola, cereals, corn, potato, soybean and tomato. Root knot nematodes, while not always damaging to every crop they infest, might increase in number under some crops and damage the following seasons crop in that same field. Caution must be exercised to prevent moving soil from fields with known nematode infestations to non-infested sites.

BACTERIAL CANKER OF TOMATOES - (Dan Egel) - This disease has been observed in several staked tomato fields recently. This article describes the symptoms of the disease and a few management suggestions. Note that this disease cannot be controlled in the late season. Therefore, these control measures are for preventing the disease from occurring next year.

Bacterial canker causes a wilt of tomato plants. Oldest leaves often wilt first. The outside of individual leaves will be yellow in color (marginal chlorosis) with a brown (necrotic) tissue immediately inside the yellow tissue. Eventually, large portions of affected plants will become necrotic. In some cases, fruit will have "birds eye spot". These lesions are white with a brown center.

Bacterial canker moves into a field primarily through contaminated seed or diseased transplants. Control of this disease centers on preventing transplants with bacterial canker from reaching the field. It is critical to carefully monitor the source of seed and transplants. Growers should buy only seed that has been tested for the presence of the bacterium that causes bacterial canker. If the transplants are "home-grown" from seed, the seedlings should be inspected frequently. Transplants that are purchased should be carefully inspected for bacterial canker symptoms at delivery.

Whoever or wherever the seedlings are grown, greenhouse sanitation (BP-61) and a regular bactericide program should be followed. Chemicals that are labeled for use on tomatoes in the greenhouse include several copper, Streptomycin (e.g., Agri-mycin 17) and mancozeb (e.g., Dithane, Manzate) products. The effectiveness of copper products may be enhanced by mixing with mancozeb products before application. Apply bactericides at the first true leaf and at 7-day intervals until set in the field. Although copper products are important in keeping tomatoes free of bacterial spot and bacterial speck problems, field applications of copper will not greatly reduce bacterial canker problems. Read and follow the label carefully!

Cultural controls are necessary for managing bacterial canker of tomato in the field. Rotate away from tomatoes for at least 2 to 3 years before planting tomatoes again. Fall tillage will help to speed up the decay of tomato residue in the fall. Clean and disinfect all tomato cages or stakes before use next year.

Bacterial canker is an important disease of tomatoes in the Midwest. If the problem appears in your fields this year, take the above steps to make sure the problem is reduced next year. For more information on this disease, BP-14 "Bacterial Canker of Tomato" can be ordered by calling 1-800-ext-info or <<http://www.agcom.purdue.edu/AgCom/Pubs/BP/BP-14.html>>.

CORN EARWORMS/TOMATO FRUITWORMS - (Rick Foster) - Pheromone trap catches of corn earworm moths have increased dramatically over the last week. In my trap here in Lafayette, I have been averaging over 100 moths per night. For sweet corn in the vulnerable stage (green silks present), I recommend treating when at least 10 moths are caught per night. With numbers above 100 per night, sweet corn is at serious risk. As long as the temperatures are reaching the mid to upper 80's and trap catches are high, I recommend that sweet corn with green silks present be treated on a 2-3 day schedule until silks turn brown. Warrior and Capture insecticides will provide the best control available. Growers may also want to consider including PennCap M in the tank to control corn earworm moths. Tomato growers should also be aware of the potential for serious infestations of tomato fruitworms. The risk may be somewhat reduced if the field corn in your area is still green because it was planted late. However, I would still recommend maintaining a strict spray schedule until the moth flights diminish.

YELLOW LEAVES ON WATERMELON - (Dan Egel) - I often write about diseases of vegetables that require some sort of action to manage. However, sometimes I will write about a disease that is NOT serious enough to warrant action. In such articles I hope to put your mind at ease.

I recently noticed some yellow lesions on watermelon leaves in Knox County. Upon closer inspection, these lesions turned out to be powdery mildew. Although many vegetable growers will have seen powdery mildew on such crops as pumpkin and muskmelon, it is unusual to see it on watermelon. Whereas powdery mildew causes a talcum like white growth on most hosts, on watermelon only a 1/2 to 1 inch yellow lesion with an indistinct margin will be observed. With a powerful hand lens, strings of white spores can be seen.

Powdery mildew does not cause yield losses on watermelon in Indiana. In addition, it is probably not wise to apply fungicides this late in the year unless one is considering harvesting watermelon well past Labor Day. Powdery mildew on watermelon does not require a fungicide application. Watch for other diseases instead.

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