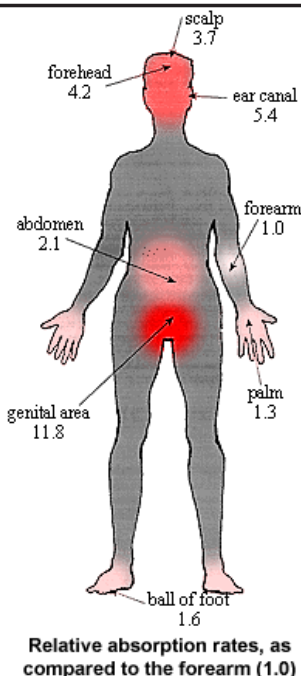


PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

JULY 20, 2005



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Reducing Pesticide Exposure

Teryl Roper, University of Wisconsin-Madison, Extension Horticulturist

Reprinted from Cranberry Crop Management Newsletter, June 5, 2005, University of Wisconsin.

With the growing season well underway growers are on the constant lookout for pests that will need to be managed if populations exceed action thresholds. Most growers use some sort of pesticide product to manage pest outbreaks. When used in accordance with the label directions pesticides can be an effective and safe method of managing pests. However, the use of any pesticide product creates risk to the people who mix, load, and apply the product. Minimizing our exposure to pesticides will protect our health and that of our families.

Pesticides can enter the body through four main routes: Dermal (through the skin), Oral (through the mouth), Inhalation (through the lungs), and Ocular (through the eyes). Not all of these routes are equal. Oral, inhalation, and ocular are particularly dangerous because they all lead directly into internal parts of the body. The skin (dermal) receives the greatest amount of exposure and it is the most common route for pesticides to enter the body. The amount of pesticide that your skin absorbs depends not only on the chemical itself and the extent of the exposure, but also on the product's formulation, the area of your body that is exposed, and the condition of the exposed skin.

Different parts of the body absorb pesticides more efficiently than others. Figure 1 shows the relative absorbance compared to skin on the forearm. The head and the genital area are particularly absorbent. It is easy to pass pesticides from the hand to the head by such a simple action as wiping a sweaty forehead. Cuts and abrasions to the skin also allow pesticides to enter the body more readily.

Oral exposure is very dangerous, but relatively uncommon. It is almost always a result of extreme carelessness. The most common cause of human oral exposure is putting pesticides in unlabeled bottles or food containers.

Inhalation exposure is very hazardous because the lungs can rapidly absorb pesticides, especially vapors and dusts. When inhaled in sufficient quantities, pesticides can damage nose, throat, and lung tissues.

Ocular exposure is also rare. The eyes are very absorbent. Not only may your eyes be damaged by pesticide exposure, but enough pesticide

SEE REDUCING EXPOSURE ON PAGE 2

Editor's Note:

Dr. Ghidiu is on temporary leave. His Pest Notes will resume in a few weeks.

REDUCING EXPOSURE FROM PAGE 1

may be absorbed through the eyes to cause serious illness or death.

Pesticide Protection

Wearing personal protective equipment greatly reduces your dermal, inhalation, and ocular exposure to pesticides. The personal protective equipment that is to be worn while mixing, loading, or applying any pesticide is listed on the product label in the Agricultural Use Requirements box.

Hands and forearms receive the most pesticide exposure. 85% of dermal exposure occurs on the hands and forearms. This can be reduced to 3% with the use of unlined chemical resistant gloves. Wear chemical resistant gloves when using any type of pesticide in any form of application. This includes wiping with Roundup. Leave the gloves on when adjusting equipment or opening pesticide containers. Do not wipe your face when wearing gloves. Leave the gloves on until the entire job is completed. After completing the task, wash your hands with the gloves on, then remove the gloves and thoroughly wash and dry your hands.

Faceshields will protect the eyes and head from pesticide exposure. Face protection is required when mixing and loading some pesticides. Wearing a chemical resistant hat with a wide brim will also reduce exposure.

Laundry

Clothing worn while working with pesticides should be laundered after each use. Wash this clothing separately from the family laundry. Put the clothing through one rinse cycle and then a complete washing/rinsing cycle using plenty of detergent.

Vehicles

Keep farm vehicles interiors clean so that pesticide contaminated dust will not be picked up when other people ride in the vehicle. Vacuum out the interior periodically and wipe down smooth surfaces with soap and water. One research study found that the level of pesticide contamination in dust found in farm homes correlated closely with that found in vehicles used by members of that family. Wipe off the seat and interior of tractors used to pull sprayers after each application.

Using pesticides in a safe manner will protect your health and the health of your family. Pesticide exposure can be minimized by following the label and using personal protective equipment and required. □

Vegetable Disease Update

Andy Wyenandt, Ph.D., Specialist in Vegetable Pathology and Wesley Kline, Ph.D., Cumberland County Agricultural Agent

✓ **Cucurbits – Powdery mildew – Powdery mildew is starting in on cucurbits in south Jersey!** Powdery mildew typically occurs from mid-July until the end of the season. Unlike Downy mildew, the diagnostic characteristics of Powdery mildew are *pure white 'fuzzy' growth on both the upper and lower leaf surface, petioles and stems.* Symptoms typically begin on older, lower leaves and can develop and spread rapidly under dry, humid conditions. Control of Powdery mildew begins with regular scouting for symptoms and weekly fungicide applications. Fungicide resistance management of the fungus which causes Powdery mildew is critical. Fungicides with a high risk for resistance development such as the strobilurins (Cabrio, Pristine, Flint, Amistar, Tanos, Group 11) should be tank mixed with a protectant fungicide such as Bravo (M4) or Sulfur (M1) and rotated with fungicides of a different chemistry such as Bravo (chlorothalonil, M4 + Nova or Procure (Group 3). Group 3 fungicides are also high-risk and should never be applied alone. Growers need to read and follow restrictions on labels carefully. For more information on control of Powdery mildew and other important diseases of cucurbits please see the *2005 New Jersey Commercial Vegetable Production Recommendations Guide.*

✓ **Cucumber/Pickles – Angular leaf spot** symptoms are distinct and easily diagnosed. Small water-soaked lesions develop on leaves and expand until they are *delimited by larger secondary veins* in leaves resulting in angular lesions. After time these lesions turn brown and infected tissue drops-off resulting in 'shotholes'. Angular leaf spot can be spread by splashing rain, insects, on the hands of workers and on farm machinery. Working in the field when the foliage is wet favors the spread of the disease. The disease can also be spread by blowing wind and in irrigation water. Best management of Angular leaf spot begins with clean-seed and planting in fields that has been out of cucurbit production for at least 2 years. Cultivating when foliage and soil are wet and irrigating with pond water should be avoided. There are cucurbit varieties with resistance. Add label rate of fixed copper + mancozeb to fungicide maintenance program and repeat applications every 7 days.

✓ **Eggplant – Phomopsis blight** – can affect all above ground portions of the plant. Symptoms include well-defined circular lesions on infected leaves with *diagnostic black fruiting bodies* developing within the lesion. If disease progresses infected leaves may turn yellow and die. Fruit lesions are similar to leaf infections, but lesions may become much larger causing fruit to become soft.

SEE DISEASE UPDATE ON PAGE 3

DISEASE UPDATE FROM PAGE 2

Wet weather and high temperatures favor Phomopsis blight development. Control of Phomopsis blight begins with scouting and weekly preventative fungicide applications which may include Amistar (azoxystrobin, 11) 80WDG at 2 to 5 oz/A, or Flint (trifloxystrobin, 11) 50WDG at 2 to 4 oz/A, or Cabrio (pyraclostrobin, 11) 20EG at 8 to 12 oz/A or, maneb (M2) 80WP at 1.5 to 2 lb/A or OLF.

✓ **Pepper – Anthracnose** - Symptoms of fruit infection include sunken, circular spots which develop blackish-tan to orange concentric rings as lesions develop. Lesions on stems and leaves appear as grayish-brown spots with dark margins and can easily be overlooked. Control of Anthracnose begins with using clean-free seed and/or transplants. A three-year crop rotation with non-solanaceous crops is recommended. After the harvest season, pepper fields should be disced and plowed under thoroughly to bury crop debris. At flowering, Maneb 74DF at 1.5 to 3.0 lbs/A should be alternated every 7 to 10 days with Amistar (azoxystrobin, 11) 80 WDG at 2 to 5 oz/A, or Cabrio (pyraclostrobin, 11) 20 EG at 8 to 12 oz/A, or Flint (trifloxystrobin, 11) 50 WDG at 3 to 4 oz/A. For more information on control please see the *2005 New Jersey Commercial Vegetable Production Recommendations*.

✓ **Peppers – Phytophthora blight** - To control the crown rot phase apply mefenoxam (1 pt Ridomil Gold 4E/A or 1 qt Ultra Flourish 2E/A) through the drip system or in a 12-16 inch band over the row at 30-day intervals after transplanting for two applications. Additionally, as fruiting starts plants will become susceptible to the *fruit rot phase*, especially with warm and moist weather conditions. Protect the upper portion of the plant with fixed copper sprays or Ridomil Gold Copper sprays. Make 3 to 4 applications at a 10-14 day intervals. Do not apply the last application of mefenoxam through the drip if foliar applications of Ridomil Gold Copper have been started. See page F70 of the *2005 Commercial Vegetable Production Recommendations* for more details.

✓ **Potato – Late blight** – Late blight has been reported on Potato in Cumberland County. The following fungicides should be used if Late blight has been detected in region (NJ, PA, NY) and if only protectant fungicides have been used prior to disease occurrence:

- Amistar, Quadris (azoxystrobin, 11) at 2 to 4 oz 80WDG/A or OLF, or
- Acrobat (dimethomorph, 15) at 4.0 to 6.4 oz 50WP/A, or
- Curzate (cymoxanil, 27) at 3.33 oz 60DF/A (Use only in combination with a protectant fungicide; i.e. chlorothalonil or mancozeb.), or
- Gavel (zoxamide + mancozeb, 22 + M2) at 1.5 to 2 lb 75DF/A, or
- Headline (pyraclostrobin, 11) at 6 to 9 oz 2.1F/A, or
- Omega (fluazinam, 29) at 5.5 fl oz. 500F/A, or
- Previcur Flex (propamocarb HCL, 28) at 0.7-0.9 to 1.2 pt 6F/A.

Rates listed in order for low-medium-high disease risk situations. Use only in combination with a protectant fungicide; e.g., chlorothalonil or mancozeb) or

Tanos (famoxadone +cymoxanil, 11 + 27) at 8 oz 50W/A.

Use only in combination with a protectant fungicide; e.g., chlorothalonil or mancozeb

The following protectant fungicides should be applied early in the season prior to the occurrence of any disease in the region according to calendar and/or accumulated DSV's:

Bravo, Echo, Equus (chlorothalonil, M4) at 1.0 to 1.5 pt 6F/A or OLF, or

Dithane, Manex II, Manzate, Penncozeb, mancozebs, M2) at 1.5 to 2.0 lb 75DF/A or OLF.

(Note. **DO NOT apply more than a total of 15 pounds per acre per crop**), or

Polyram (metiram, M3) at 2 lb 80DF/A or OLF.

(Note. **DO NOT apply more than a total of 15 pounds per acre per crop**).

✓ **Tomato - Early Blight and Septoria leaf spot** -

Apply the following fungicides on a 7-day schedule or according to Tom-Cast advised sprays using the alternation pattern described below to delay the potential development of resistant to FRAC Group 11 fungicides.

Bravo, Echo, Equus, chlorothalonil, M4) at 2 to 3 pt 6F/A or OLF (also for gray leaf spot, black mold and soil rot), or

mancozeb (Dithane, Manex II, Manzate, Penncozeb, M2) at 3 lb 80WP/A or OLF (also for gray leaf spot and leaf mold)

Alternate one of the above fungicides with one of the following:

Amistar, Quadris (azoxystrobin, 11) at 1.6 to 2.0 oz 80WDG/A or OLF (Also for buckeye rot and black mold. Do not apply near apples, see label for details.), or

Cabrio (pyraclostrobin, 11) at 8 to 12 oz 20EG/A, or Endura (boscalid, 7) at 2.5 to 3.5 oz 70W/A, or Flint (trifloxystrobin, 11) at 4 oz 50 WDG/A, (Do not apply near Concord Grapes.) or

Tanos (famoxadone + cymoxanil, 11 + 27) at 8 oz 50W/A + protectant fungicide (also for buckeye rot suppression and gray leaf spot).

✓ **Tomato – Late blight** - Apply one of the following **protectant fungicides** and repeat every 7 days or follow a **disease forecasting system to schedule fungicide applications**:

Bravo, Echo, Equus, chlorothalonil, M4) at 1 to 3 pt 6F/A or OLF, or

Gavel (zoxamide + mancozeb, M2 + 22) at 1.5 to 2 lb 75DF/A, or

mancozeb (Dithane, Manex II, Manzate, Penncozeb, M2) at 3 lb 80WP/A or OLF.

Once late blight is detected in the area, switch to one of the following translaminar fungicides which can move into and through leaves:

Acrobat (dimethomorph, 15) at 6.4 oz 50WP/A *plus* a protectant fungicide, or

SEE TOMATO ON PAGE 4

TOMATO FROM PAGE 3

Previcur Flex (propamocarb HCL, 28) at 1.5 pt 6F/A plus a protectant fungicide, or Tanos (famoxadone + cymoxanil, 11 + 27) at 8 oz 50W/A plus a protectant fungicide.

Return to the use of protectant fungicides when conditions no longer favor the development of late blight.

✓ **Tomato – Bacterial Canker** – Diagnostic symptoms of Bacterial canker include marginal leaf necrosis. The first symptoms of Bacterial canker include brownish-black lesions along the margins of infected leaves. Lesions become dry after a time and leaves become ‘ragged’ looking. Bacterial canker can easily spread through the field via staking, tying and pruning. Do not work (i.e. tie, stake or prune) when tomato foliage is wet. Fields or blocks of tomatoes showing symptoms should not be worked in prior to other fields. Bacterial canker can be spread between fields via hands, clothing and equipment. As fruit develop, white ‘bird’s eye’ spots may develop on green fruit making it unfit for market. Fungicides used to control Bacterial spot and speck may help to suppress spread of Bacterial canker.

✓ **Tomato – Anthracnose** – Symptoms of Anthracnose are easily diagnosed. Symptoms on ripe fruit appear as water-soaked circular lesions that often have a lighter colored tan center. Black fruiting bodies are often visible in the center of Anthracnose lesions. Control of Anthracnose begins with preventative fungicide applications. Fungicides labeled for other important foliar and fruit diseases of tomato will help control Anthracnose. If a fruit-ripening agent has been used, additional fungicide applications may be necessary to help control Anthracnose. For more information on control please see the *2005 New Jersey Commercial Vegetable Production Recommendations*.

✓ **Tomato – Buckeye Rot** – Wet weather and wet soils favor the development of Buckeye rot. Symptoms of Buckeye Rot on green fruit include brownish-tan lesions that have a *definitive concentric appearance*. As lesions form the fruit will begin to soften up, this is quite different than Late blight which will cause a dark brownish/black lesion with the fruit remaining somewhat firm. Unlike Late blight, Buckeye rot won’t attack the foliage. For more information on control please see the *2005 New Jersey Commercial Vegetable Production Recommendations*. □

IPM Update

Kristian Holmstrom, Research Project Coordinator II, Vegetable IPM Program

Sweet Corn

Adult **European corn borer (ECB)** activity is beginning to increase in the southern counties with higher moth catches in parts of Atlantic, Burlington and Salem Counties (see ECB map). Larval injury in whorl and pretassel stage sweet corn plantings is relatively low at this time. This situation will change soon, as these second generation adults begin to mate and lay eggs. ECB moth activity will increase northward within 1-2 weeks. Be sure to check all whorl and pretassel stage sweet corn plantings for signs of ECB damage. Check 5 consecutive plants each in 10 random locations. Look for the “shot-hole” type injury on leaves and discolored sections in the emerging tassels. Consider treating when 12% or more of samples plants show fresh feeding signs. Additionally, be sure to treat these early sweet corn plantings as they go to full tassel and first silk. This application will help eliminate remaining ECB larvae before they can re-enter the plant near the developing ear. If local light traps continue to catch ECB adults and silking stage corn is present, consider treating weekly to prevent infestations by larvae that have been deposited on or near the ears themselves. **These silk stage sprays should be applied even if there are no corn earworm (CEW) being caught to generate a schedule.**

The highest average nightly ECB blacklight catches are:

Indian Mills	4	Beckett	1	Mullica Hill	1
Folsom	3	Centerton	1	Pennington	1
Shirley	2	Hackettstown	1	Seeley Lake	1
Tabernacle	2	Long Valley	1	Woodstown	1

CEW adults are being caught in reasonably low numbers throughout the southern counties with a few higher catches in Atlantic, Gloucester and Salem Counties (see CEW map). Very few individuals have been captured in the northern counties over the past week. As yet, numbers remain low through Maryland, with some moderate increases in North Carolina. Southern and mid-Atlantic states should begin to see increased adult activity within the next week. In New Jersey, significant CEW increases usually occur around the second week of August. On the map, shaded areas (blue on the web version) indicate a 5-6 day silking spray schedule, while crosshatched areas (green on the web version) warrant a 3-4 day silk spray schedule. The highest average nightly CEW blacklight catches are:

Elm	3	Cedarville	1	Indian Mills	1
Beckett	2	Centerton	1	Jones Island	1
Folsom	2	Eldora	1	Seeley Lake	1
Shirley	2	Hammonton	1	Woodstown	1

SEE IPM ON PAGE 5

Fall Armyworm (FAW) infestations have been identified this week in Warren County, and are certainly occurring in the southern counties as well. This pest will lay eggs on all stages of sweet corn, including large seedlings. As a result, it now becomes critical to include seedling stage corn in scouting activities. Initial injury to sweet corn appears as “window-pane” type feeding on leaves, with damaged areas progressing down toward the whorl. As the larvae increase in size, they begin to chew large, ragged holes in the leaves, and their brown droppings are quite obvious. Consider treating when 12% or more plants are infested with FAW alone, or in combination with ECB.

General Silking Spray Schedules*:

North – 6 - 7 days

Central - 5 - 6 days

South - 3 - 5 days

*Note: These are general recommendations. Local trap catches may indicate some variation in the frequency of insecticide applications to silking sweet corn.

Cole Crops

Diamondback **moth larvae (DBM)**, **imported cabbage worms (ICW)** and **cabbage looper (CL)** are all active on broccoli, cabbage and similar crops at this time. It is important to check fields weekly to prevent serious injury by these pests. When scouting, be sure to include the inner most leaves in the sample as this is often where larvae feed. Consider treating if greater than 20% of heading type cole crops are infested prior to head formation and if greater than 5% are infested when heads are present. For leafy greens, consider treating if 10% or more plants are infested at any time. Additionally, be sure to check newly emerged plants or recent transplants for flea beetles. These insects can quickly cause significant injury to small plants, especially when high temperatures result in increased plant stress. Consider treating if flea beetles are present on 50% or more plants and damage is obvious.

Pumpkins

Cucurbit downy mildew (DM) has been present in some southern New Jersey locations for some weeks now. These infections can possibly serve as inoculum for further downy mildew incidents both locally and in cucurbit fields to the north. Typical fungicide schedules for the prevention of **powdery mildew (PM)** in pumpkins are not necessary until the lesions are found (often after fruit have begun to develop). However, the presence of DM locally would necessitate the initiation of a fungicide program on all cucurbits immediately. As yet, scouted fields in the northern counties have not shown any symptoms of DM. DM symptoms often begin as sharp yellow spots on the upper surface of leaves. Observation of the lower leaf surface will typically show that the lesion is associated with veins. As the infection progresses, dark spores will be apparent on the lower leaf

surface during periods of high humidity. Under warm, wet conditions, rapid defoliation of leaves can occur if regular control is not undertaken. For labeled fungicides, consult the *2005 Commercial Vegetable Production Recommendations*. This week, the earliest pumpkin fields have reached the action threshold of 1 PM lesion per 50 older leaves. This means it is time to begin the regular protectant fungicide program on those fields. Any field that has not been scouted recently should be checked for PM and DM. Look for small, powdery spots on either surface of older leaves. Be sure to check leaves within the canopy as well.

Tomatoes

As the weather warms, and fruit enlarge and begin to ripen, it is a good idea to begin monitoring for **thrips** populations in the field. These small insects cause what is referred to as “gold fleck” on tomato fruit if they build up in the crop as fruit enlarge. Check fields weekly for increases in thrips populations. Tap flower clusters over an index or similar card. If the small, yellow colored flower thrips shake out onto the card at more than half of the sites inspected, or thrips populations have been increasing, consider treating to minimize the cosmetic feeding injury to fruit.

The period from late June through the first half of July is typically the time when adult **brown stinkbugs** (*Euschistus spp.*) are active and laying eggs on host crops like tomatoes. Increasingly, brown stinkbugs have been observed feeding in sweet corn tassels, so they are active in the fields. These insects will feed directly on tomato fruit, causing a pale, diffuse blotch on green fruit that turns bright yellow as the fruit matures. More damaging is the injury caused by the nymphs as they begin to hatch and slowly disperse in the planting. In general, damage is worse during dry periods, because stinkbugs seek more succulent irrigated hosts as non-crop hosts dry up. Adult stinkbugs are difficult to detect in tomatoes because they hide or drop to the ground when approached. The nymphs may be easier to spot, as they remain in a group for some time after egg hatch. Check 5 consecutive plants each in 10 random locations in the planting. Look at two complete leaves and two fruit per plant. If adult stinkbugs or nymphs are found in more than one sample, or if fruit injury is increasing in field samples or in picked baskets, consider applying a labeled insecticide.

Check fields for signs of **two spotted spider mite (TSSM)** feeding. This injury first appears as whitish pin-spots or “stipple” on the surface of older leaves. As the mites increase and continue to feed, the leaves may turn yellow, and the injury will progress up the plant onto younger leaves. Often TSSM infestations first start near field edges where the mites have been feeding on weeds or other hosts like eggplant. If TSSM is localized in a field, spot treatments may be effective. TSSM infestations in some high tunnel plantings are increasing very rapidly now. Treatment may be warranted if the infestation is

SEE TSSM ON PAGE 6

TSSM FROM PAGE 5

occurring prior to the beginning of harvests. If fruit harvests are well underway when plants show widespread symptoms of TSSM feeding, the mites will likely not cause a reduction in overall yield.

In some tomato fields in the northern counties, significant leaf distortion has been observed on terminal growth. This indicates a possible **cyclamen mite** infestation. (See pepper section below for further information).

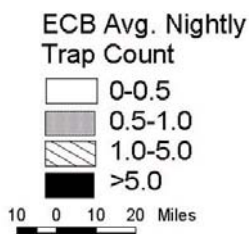
Bacterial infections are present, and increasing after recent powerful storms. **Bacterial speck and spot** often first appear as small, very dark spots on the interior of leaves of any age growth. As the infection progresses, fruit lesions may develop. These are dark scabby pits in the case of spot, and dark blister like lesions in the case of speck. Another infection is bacterial canker. This often begins as dark margins on older leaves. The lesion progresses inward, and under proper conditions (following pruning, tying, hail or hard rain events) can infect whole stems, causing death in the affected part of the plant. Fruit lesions are whitish blisters known as "bird's eye spot". When working in multiple fields, be sure to work in order from youngest to oldest. This will minimize the chance of transmitting an infection to younger, more vulnerable plants. Avoid fields then foliage is wet. Consult the *2005 Commercial Vegetable Production Recommendations* for materials that may be helpful in limiting the spread of bacterial infections.

Peppers

Aphids, TSSM, and thrips are all potential pests of peppers at this time. Monitor fields weekly for the presence of these organisms. Check 2 leaves and 2 fruit per plant on 5 consecutive plants in 10 random locations in the field. Observe the under sides of leaves for aphids and mites. Consider treating if aphid numbers exceed 100 per 100 leaf sample or there are fruit on the plants that are being disfigured by the sticky droppings of the aphids. Consider treating for TSSM if more than 10% of sampled leaves are infested. (Spot treatments may be useful if the infestation is localized). Observe fruit and leaves for the light or silver-colored streaks caused by thrips feeding. Consider treating if thrips are found on 10% or more fruit, or 10% or more plants or fruit are showing signs of fresh feeding.

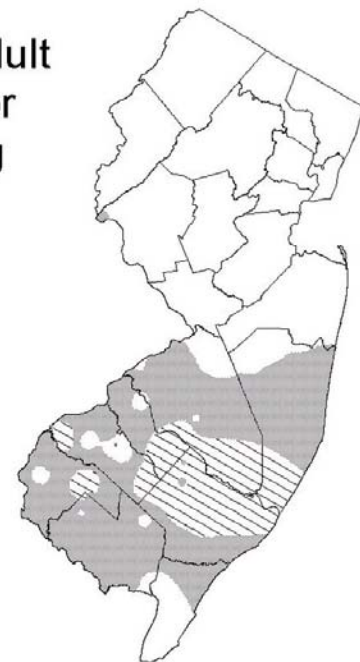
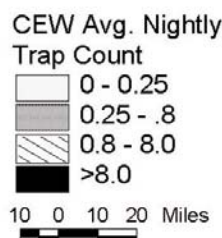
While scouting, note whether significant leaf distortion is occurring on younger parts of any plants. This is often the result of a **cyclamen mite** infestation. Cyclamen mites are extremely small and are identified in the field by the injury they cause. Distortion near the growing terminals may be accompanied by bud proliferation and russetting of leaves, petioles and developing fruit. If this injury is found, positive identification may be obtained by looking at affected tissue under a microscope. Cyclamen mites are pale, teardrop shaped mites that favor newly formed plant tissue. Miticides used for TSSM will be effective against cyclamen mite.

Distribution of Adult European Corn Borer for the Week Ending July 20, 2005



Data collected and processed by: Kris Holmstrom, Marilyn Hughes
Rutgers Cooperative Extension & Center for Remote Sensing

Distribution of Adult Corn Earworm for the Week Ending July 20, 2005



Data collected and processed by: Kris Holmstrom, Marilyn Hughes
Rutgers Cooperative Extension & Center for Remote Sensing

Section 18 Labels for Asian Soybean Rust on RCRE Website

In addition to registered products, there are 11 Section 18 fungicides currently labeled for Asian Soybean Rust (ASR) management in New Jersey for the 2005 season. The Section 18 labels are now available on Rutgers Cooperative Research & Extension's Asian Soybean Rust webpage at:
<http://www.rcre.rutgers.edu/soybeanrust/>.

- Also on the webpage are:
- ❖ Disease Management Guidelines
 - ❖ Fungicides
 - ❖ Soybean Growth Stages & Development
 - ❖ Basics of Fungicide Resistance
 - ❖ How to Submit a Sample
 - ❖ Contacts
 - ❖ Web Resources

Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged much above normal, averaging 77 degrees north, 77 Degrees central and 79 degrees south. Extremes were 93 degrees at Canoe Brook on the 12th, and 56 degrees at Freehold on the 12th. Weekly rainfall averaged 0.72 inches north, 1.86 inches central, and 0.74 inches south. The heaviest 24 hour total reported was 2.97 inches at South Harrison on the 15th to 16th. Estimated soil moisture, in percent of field capacity, this past week averaged 83 percent north, 81 percent central and 70 percent south. Four inch soil temperatures averaged 75 degrees north, 76 degrees central and 77 degrees south.

Weather Summary for the Week Ending 8 am Monday 7/18/05											
WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC	
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP		
BELVIDERE BRIDGE	1.16	15.79	-1.97	92	61	77.	4	1369	132	90	
CANOE BROOK	.69	17.41	-1.45	93	66	78.	4	1566	326	80	
CHARLOTTEBURG	.07	19.68	.64	88	59	75.	5	1277	276	70	
FLEMINGTON	1.61	22.34	4.16	90	65	78.	4	1474	194	100	
NEWTON	.09	16.15	-1.20	90	63	78.	6	1396	294	71	
FREEHOLD	2.51	22.26	4.56	90	56	76.	1	1471	89	99	
LONG BRANCH*	1.30	20.38	2.75	92	64	76.	2	1436	130	95	
NEW BRUNSWICK	2.29	21.84	4.32	92	66	78.	3	1543	81	100	
TOMS RIVER	2.36	21.95	4.00	92	62	77.	3	1395	79	69	
TRENTON	.86	20.62	3.99	90	66	79.	3	1550	27	73	
CAPE MAY COURT HOUSE	1.25	18.26	2.63	90	67	78.	2	1220	-183	96	
DOWNSTOWN	.51	16.25	-.05	91	64	79.	3	1462	-74	63	
GLASSBORO	.86	17.92	.56	92	66	80.	4	1675	160	65	
HAMMONTON	1.64	18.48	.71	92	64	80.	4	1525	15	94	
POMONA	.08	17.42	1.88	91	65	79.	4	1423	23	43	
SEABROOK	.12	17.62	1.87	92	71	81.	5	1700	157	52	
SOUTH HARRISON	4.10	22.17	4.67	91	66	79.	NA	1583	NA	NA	
*SOME CUMULATIVE VALUES ESTIMATED DUE TO MISSING PAST DATA											
WES KLINE — GDD BASE 40 PINEY HOLLOW											
Last Week* 230 (Ending 7/11/05)											
This Week 273 (Ending 7/18/05)											
* February total base 40 equals 32 units											

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