

# PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

JUNE 13, 2007



## Food Safety Series:

### Organisms and Carriers of Pathogens

Wesley Kline, Ph.D., Cumberland County Agricultural Agent

**Water** – Water can carry many organisms such as *Escherichia coli*, *Salmonella* spp., *Vibrio cholerae*, *Shigella* spp., *Cryptosporidium parvum*, *Giardia lamblia*, *Cyclospora cayetanensis*, *Toxoplasma gondii*, and Norwalk and hepatitis A viruses. Just a small amount of these organisms can cause a foodborne illness. Know your water source! Drinking water, such as municipal water, is considered the safest source, but a copy of the municipal water test should be obtained each year. Ground water is better than surface water which may be contaminated anytime during the year. Water is one of the first and last things to come in contact with produce. Make sure the source used is not contaminated from livestock operations, wildlife or sewage treatment facilities. Ground water sources should be sampled at least twice a year to determine if a microbial problem exists. Test surface water more frequently (spring, mid summer and just before harvest) to ensure product safety.

**Manure and Municipal Biosolids** – These two are potential sources of *Escherichia coli* 0157:H7, *Salmonella*, *Cryptosporidium* and other pathogens. Biosolids are not recommended for use on fruits and vegetables in New Jersey. Manure including slurries and teas must be managed to ensure produce does not become contaminated. Fresh manure should not be applied within 120 days of harvest; no closer than two weeks before planting or as a sidedress material. The manure should never come in contact with any horticultural crop. Manure is best applied to agronomic or perennial crops that will not be harvested until the end of summer. Slurry stored or composted manure will reduce or kill most pathogens if held for sufficient time. Slurry material should be held for at least 60 days in summer and 90 days in winter. Composted manure if heated to at least 140°F will control microbes. A good rule of thumb - if weed seeds are killed then microbes will be killed.

**Worker Hygiene** – There are several organisms that can be transmitted through food contaminated by infected employees. Among those are *Hepatitis A*, *Salmonella typhi*, *Shigella* species, *Norwalk* and *Norwalk-like* viruses, *Staphylococcus aureus*, *Streptococcus pyogenes* and *Escherichia coli* 0157:H7. Some past outbreaks of foodborne diseases have been traced to poor worker hygiene. The Occupa-

SEE PATHOGENS ON PAGE 2

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tional Safety and Health Act mandates that growers need to have restroom facilities in the field when working more than ¼ mile from another restroom. The facility must have soap, fresh water and single use towels for hand washing. Having these facilities does not mean they are properly used. One of the biggest maintenance problems with the field restroom is keeping clean water. Some type of automatic shut off will alleviate wasting water. Workers should be trained as to the reason for and proper use of the facilities. Training may be on a one-to-one basis or as a group in the spring at one session as the season begins. Whether they work in the packingshed or field, it must be stressed to workers that good hygiene is imperative. The symptoms most associated with foodborne diseases are fever, diarrhea, vomiting and sometimes a sore throat with fever. Any worker who has these symptoms should not work directly or indirectly with fresh produce. Encourage workers to report the presence of any of these symptoms and assure them they will not be fired or sent home, but will be given other tasks.

**Field, facility and transport sanitation**

– Clean and sanitize all equipment prior to harvest. This includes previously used bins and containers. Once sanitized, place the bins and containers in full sun so the ultraviolet rays can continue to kill pathogens. Make sure all animals are excluded from the packing area. This is a difficult task if the packingshed has large overhead doors, but at least keep the building closed at night so birds do not roost, and pets and rodents are excluded. The packingshed should be cleaned and sanitized at the end of each day. Sanitation is critical whether the produce is delivered to a roadside stand, processing plant, or loaded on a truck for shipment. Inspect the truck for cleanliness, odors, and obvious dirt or debris. What was on the truck in the previous load could cause cross contamination. Make sure the refrigeration unit is working properly and the field heat removed from the produce before loading. Units on trucks are designed to maintain temperatures; not to remove field heat. □

## Health Benefits Found from Watermelon

*Michelle Casella, Gloucester County Agricultural Agent*

Watermelon is a popular fruit with all age groups, especially children. It is not hard to imagine why for anyone who has tasted a good watermelon. Watermelon is found to have the highest concentrations of Lycopene compared to other fruits and vegetables. Over the past decade we have learned about Lycopene from promotion of tomatoes and tomato products. Lycopene provides health benefits related to prostate, bone, and skin health. Lycopene is an antioxidant, which appears to prevent the formation of harmful by-products of metabolism called free radicals that can lead to certain chronic diseases like cancer. Research around the world has also shown reduction in bone loss, internal protection from sunburn, and increased sperm concentration in males with infertility problems when Lycopene intake is increased through eating watermelon, tomatoes, and other fruits and vegetables.

Now there are more reasons why we should all be eating watermelon. The USDA has sent out a news release entitled “Watermelon Serves up Medically Important Amino Acid” that summarizes a research study published in the Elsevier Nutritional Journal entitled “Watermelon Consumption Increases Plasma Arginine Concentrations in Adults”. With this study come four new nutritional claims for watermelon:

1. Watermelon consumption increases free arginine and citrulline, which can help maintain cardiovascular function.
2. Eating watermelon can help maintain cardiovascular health.
3. Watermelon has amino acids such as citrulline and arginine that helps maintain arteries.
4. Watermelon amino acids citrulline and arginine can help maintain blood flow and heart health.

Other important nutritional benefits from watermelon include:

- Vitamin A for eye health
- Vitamin C for immune system defense and protection from free radical damage
- Vitamin B6 used in manufacturing brain chemicals such as serotonin, melatonin, and dopamine which may help the body cope with anxiety and panic
- Potassium needed for water absorption in cells and can help prevent muscle cramping
- Watermelon is also low in calories, fat free and sodium free

These health claims can be used by both retailers and wholesalers to increase sales of watermelon. The National Watermelon Promotion Board offers a CD with Heart Healthy logos in various formats to use for marketing. Contact Stephanie Simek at

[ssimek@watermelon.org](mailto:ssimek@watermelon.org) to get a copy. Also for more information on watermelon see the web site <http://watermelon.org>. □

# Pest Notes

Gerald M. Ghidui, Ph.D., Specialist in Vegetable Entomology

✓ **Crucifers: Flea beetle** populations have been relatively high in most crucifer crops, damage appearing as small shot holes in the leaves. These holes become larger as the leaf expands, and the leaf loses moisture and may show signs of desiccation. Treatment is recommended if there is one beetle per plant in the seedling stage. The labeled pyrethroids are very effective against flea beetles, including Asana, Baythroid, bifenthrin (Capture and generics), Mustang MAX, Proaxis, and lambda-cyhalothrin (Warrior and generics). Effective non-pyrethroids include imidacloprid (Provado and generics), carbaryl and Thionex. The weather may have contributed to the heavy flea beetle populations as other states, including Long Island, report heavy flea beetle populations.

Also, watch closely for both **imported cabbage-worms** and **diamondback moth** larvae. Imported cabbageworms are common in New Jersey cole crops at this time of the year, (they are the larvae of the white butterflies seen fluttering around the fields in the middle of the day). Eggs hatch in 5-9 days, depending on temperatures, into the velvety green caterpillars that feed on the foliage and developing heads. These pests are relatively easy to control. However, diamondback moth has been reported on cole crops in both New Jersey and Long Island, which is more difficult to control. Avoid pyrethroids for control of diamondback moth larvae, as they are not effective against this pest and may actually increase the diamondback moth larvae buildup. Also, pyrethroids may increase problems with other insects, such as **aphid** flare-ups. If diamondback larvae are present, use Avaunt, Entrust, Orthene, Proclaim, Rimon, or SpinTor, or any of the biological insecticides (Bt's) labeled for this pest. A rotation of several of these materials would be the best management tactic.

✓ **Pepper (bell):** Rutgers IPM reports a positive identification of the **pepper weevil** in traps in Hammon-ton in just one location. This pest only overwinters in the deep south, and cannot survive the cold New Jersey winters. Research shows that it can be brought into our area on transplants, and then infest an entire field during the summer. It is also suspected that adults may be brought into our area by other means (transportation, shipments, etc). It is unknown at this time if adults can survive the winter in protected, heated areas (year round greenhouses, sheds, etc). It is important to watch pepper fields (hot, banana, bell, etc) for aborted flowers and dropped flowers and small fruit early in the season. The female weevil will attack more than one flower, so a scout should look for an unusually high number of dropped flowers or fruit in a given area. These flowers and fruit can then be dissected to reveal the egg or grub

developing within. Pepper weevils will likely remain in that area, and slowly spread to nearby plants, so immediate treatment of the infested area is crucial. For the pepper weevil, use Actara, Assail, Kryocide, or Vydate as non-pyrethroid materials. Labeled pyrethroids include bifenthrin, Mustang MAX, permethrin, and lambda-cyhalothrin. Although pyrethroids have always been effective against this pest in New Jersey when problems occurred, the state of Florida reports that pyrethroids have been less effective than desired against pepper weevil, which may be a result of the development of insecticide resistance by the pepper weevil. Whichever material is selected, and signs of weevil infestation is evident (damage or trapped adults in the field), it would be best to treat at least twice, at 5-7 day intervals, to ensure activity against adults as they move from flower to flower (or fruit to fruit).

✓ **General Crops** – Rutgers IPM reports trapping high numbers of **corn earworm moths** in pheromone traps throughout the area. Pennsylvania (Shelby Fleischer), Delaware (Joanne Whalen) and Long Island (Dan Gilrein) also report catching these moths, sometimes in unusually high numbers. Most likely it is just the weather pattern and storm fronts that helped these pests into our area, and it could turn out to be just an abnormal early peak for corn earworm. However, it could mean that earworms are here for the summer, and close monitoring of your fields would be a wise management tactic. These pests attack many crops, including tomatoes, lettuce, leafy crops, sweet corn, peppers, beans, etc. The pyrethroids are very effective against this pest, including Asana, Baythroid, bifenthrin, Danitol, Mustang MAX, permethrin, Warrior, and others, but best control is achieved before the worm becomes large (later instars). Effective nonpyrethroids include Lannate, Larvin, SpinTor, Proclaim, Thionex, and Entrust. This pest easily migrates from plant to plant, fruit to fruit, so thorough coverage in crops such as snap beans, peppers and tomatoes is necessary for adequate control.

Small **grasshopper** nymphs are beginning to appear in many crops. Although they do little damage at this time, they do chew leaves on nearly anything green, and cause problems as they become larger in size. Closely monitor your fields for grasshopper buildup, but also monitor nearby field crops such as soybeans and others for grasshopper population development. As the soybeans mature, grasshoppers may migrate into nearby vegetable fields, such as lettuce and spinach, and either feed on the crop or become a contamination product. Although this may not happen for a while, it's best to plan now.

**Potato leafhoppers** have just begun to appear in vegetable fields, including potato fields. Closely monitor fields for potato leafhopper, even if the fields were previously treated with an at-plant or in-furrow treat-

SEE PEST NOTES ON PAGE 4

## Pepper Weevil, 2007

Joseph Ingerson-Mahar, Vegetable IPM Coordinator

Yesterday (6/12/07) I sent out our first email pest alert regarding pepper weevil to Plant and Pest Advisory subscribers who receive the newsletter via email. A pepper weevil was caught in a pheromone trap in the Hammonton area on June 7. So far it is the only one caught and no other sighting has been made to my knowledge. Pepper weevil is a sporadic pest that is carried or brought into New Jersey since it cannot overwinter here. It is not a migrant insect in the sense of corn earworm, fall armyworm or potato leafhopper. If it is present at the time of first flower in bell peppers, hot peppers and other specialty peppers and not controlled, data from Texas and our experience in 2004 shows that 80% of the yield may be lost. Scouting of blossoms for the adults and cutting open aborted flowers and small fruit looking for weevil grubs inside are ways to monitor for the pest. Pheromone traps can be used but require a lot of maintenance.

While there are several weevils about the same size (3/8") and coloration as pepper weevil that can be found on peppers, the pepper weevil is the only one in our area that has a small spur on the underside of the first long leg segment of each leg. This spur can be seen with a 20 power hand lens or with a microscope.

Once found, growers have several options of insecticides that can be used for control listed in the *Commercial Vegetable Production Recommendation Bulletin, 2007*. An insecticide application should be applied immediately after the weevil is detected and then again a week later. After that the grower should continue to monitor the peppers closely for more weevils.

For a sporadic pest that does not overwinter here, it is ironic that pepper weevil has occurred in the Hammonton area now 3 years out of the last 4. We are searching for clues as to how it is arriving there. □

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### PEST NOTES FROM PAGE 3

ment of insecticide. Those treatments will be near the end of their effectiveness, and infestations as well as damage occurs quickly. Many materials, including pyrethroids and non-pyrethroids, are labeled for control of potato leafhopper. Control this pest before the population develops because it can be a very damaging insect pest. Recommendations in white potato are to treat if the potato leafhopper population exceeds 1 adult per sweep, or 1 nymph per 10 leaves. □

## IPM Update

Kristian Holmstrom, Research Project Coordinator II, Vegetable IPM Program

### Sweet Corn

**European corn borer (ECB)** adult numbers remain fairly low in much of the state with areas of higher activity in parts of Cumberland and Salem Counties (see ECB map). In the northern counties, catches are still sporadic. Despite lower adult numbers, feeding is increasing on whorl stage sweet corn in all areas. Within the past week, feeding percentages into the forties have been recorded as far north as Hunterdon County. It is noteworthy that feeding on sweet corn is erratic as well. Fields with high infestation rates (as is normal for this time of year) are often not far from fields of similar age having very little feeding. In many cases this season, the earlier sweet corn plantings progressed into the pretassel or tassel stages prior to ECB egg laying. Thus, there was no indication of foliar feeding. ECB are still a threat to these plantings, as eggs continue to be laid lower on the plant. In areas where no **corn earworm (CEW)** adults have been caught, a weekly silking spray schedule is warranted to prevent injury from later emerging ECB larvae.

For sweet corn in the whorl stage, check 5 consecutive plants each in 10 random locations throughout the planting. Look for the presence of "shot-hole" type feeding that is characteristic of ECB larvae. On pre-tassel stage plants, look for discoloration or actual caterpillars in the emerging tassels. Consider treating if fresh damage is found on 12% or more plants. Be sure to treat again at the full tassel to first silk stage to protect the forming ears from ECB larvae that are leaving the tassel and traveling down the stalk.

The highest nightly ECB catches for the previous week are as follows:

Elmer	11	Eldora	2	Hammonton	2
Indian Mills	4	East Vineland	2	Shirley	2
Beckett	3	Folsom	2	Tabernacle	2
Downer	2	Green Creek	2	Springdale	1

**Corn earworm (CEW)** catches have become somewhat more consistent in parts of southern New Jersey. This is particularly true in the Gloucester County area (see CEW population map), although adults have been captured as far north as Holmdel in Monmouth County. These adults appear to have arrived here with the tropical depression of two weeks ago. Catches are higher than normal for this time of year, with pheromone traps indicating a significant population in the Gloucester-Salem County border area. If CEW adults are present when plantings go to silk, there is a threat of infestation. The shaded area on the map corresponds to a 5-day silk spray schedule.

SEE IPM ON PAGE 5

The highest nightly CEW catches for the previous week are as follows:

Beckett	2	Dayton	1	Hammonton	1
Elmer	2	Eldora	1	Indian Mills	1
Burlington	1	Folsom	1	Matawan	1
Cinnaminson	1	Green Creek	1	Tabernacle	1

### Cole Crops

**Imported cabbage worm (ICW)** and **diamondback moth (DBM)** infestations are increasing, and adults are visibly active in field. In heading type cole crops like cabbage and broccoli, check 5 consecutive plants each in 10 random locations. Look on the undersides of leaves and on the youngest leaves at the center of the plant. Consider treating if 10% or more plants are infested while in the 0-9 true leaf stage. The threshold may increase to 20% from 9 true leaves to the early head stage. Once heads form, the threshold becomes a more conservative 5%, in order to protect the marketable portion of the plant.

While scouting for caterpillar pests, note the presence of **crucifer flea beetle**, especially on new transplants or recently emerged plants. This pest can be very destructive, particularly to newly emerged seedlings. Consider treating if 50% or more plants have flea beetles on them, and damage is visible. It is important to check these young fields at least weekly, as reinfestation can occur quickly after a foliar insecticide application. Leafy greens like collards and kale can be especially impacted by this pest as the leaves are the marketable portion.

### Tomatoes

In general, recently transplanted tomatoes have been unaffected by insect pests in the northern and central counties as yet. However, it is time to begin looking for several common pests including **aphids**, **mites** and **Colorado potato beetles (CPB)**.

Tomatoes are subject to infestation by aphids, even early in the season. Check 5 consecutive plants each in 10 random locations in the planting. Look at two complete leaves per plant. Aphid colonies may be tolerated on plants for a time as long as they are not numerous and heavy enough to result in honey dew (sticky droppings) on the surface of fruit. Aphids may be controlled by natural predators and parasites if broad spectrum insecticides are not used. Note whether colonies are increasing in number and note the presence of predators such as ladybird beetles/larvae, lacewing larvae, syrphid maggots and the presence of bloated, gold colored aphid mummies (indicating parasitism by aphidiid wasps). If aphid colonies are still present when fruit begin to size, and are heavy enough to result in honey dew deposition in several samples, consider a foliar insecticide application to control them.

When scouting for aphids, note the presence of whitish "pin-spots" on the surface of lower leaves. Upon closer inspection, **two-spotted spider mites (TSSM)** may be found on the lower surface of leaves with the pin-spots. This pest is best dealt with before it becomes

widespread in the field. Spot treatments with miticides may be sufficient to prevent larger infestations. Be sure to take several samples from field edges to account for potential mite migration into the field from grassy edges or other near by host crops.

**Tomato hornworm (THW)** adults are now appearing regularly in light traps, and eggs were found on tomato plants in all counties. THW larvae consume large quantities of foliage and can damage green fruit. Generally, they are not numerous enough to cause economic injury, but in some instances they have been a problem. Look for stems that have been stripped of leaflets. There will be obvious droppings on leaves and plastic mulch below. The caterpillar can be difficult to spot, even when large. If droppings are fresh, and injury is found in approximately half the sites, consider an insecticide treatment.

### Peppers

It is important to check peppers weekly for the presence of **ECB** eggmasses, as well as **aphids** and **TSSM** at this time. ECB eggmasses are flat and waxy looking, having the appearance of fish scales on the underside of the pepper leaf. As the larvae emerge, they will look for a place to bore into the plant. In the absence of fruit, they will enter the stem, causing flagging of branches or the upper portion of the plant. This effectively eliminates the early fruit set on affected plants. Check 5 consecutive plants each in 10 random field locations. Look at the underside of 2 leaves per plant. If 2 or more ECB eggmasses are found in the total sample, consider an insecticide application to minimize plant injury. As fruit develop, this threshold still applies, and additional weekly treatments are recommended if the ECB adult catch in local light traps averages 1 or more per night. This level of activity corresponds to the shaded and cross-hatched areas on the ECB map (blue and green on the web version, found at: [www.pestmanagement.rutgers.edu/IPM/Vegetable/Pest%20Maps/maparchive.htm#2007%20Weekly%20Pest%20Maps](http://www.pestmanagement.rutgers.edu/IPM/Vegetable/Pest%20Maps/maparchive.htm#2007%20Weekly%20Pest%20Maps))

### Snap Beans

**Potato leafhopper (PLH)** is active now in much of the state, and is capable of causing major injury to beans. Feeding from PLH causes leaves to curl downward and results in significant yield loss. If a sweep net is available, consider treating if more than 100 nymphs and adults are present in 20 sweeps of pre-bloom stage plants. This threshold increases to 250 during bloom and to 500 per 20 sweeps during pod development. If no sweep net is available, check plants in 10 random field locations and consider treating if adults and nymphs are found throughout.

**ECB** are a threat to plants with developing pods at this time. Treat at full bloom and again at pin-pod if moths are being caught in local light traps. Continue treating if ECB catches exceed 2 per night on average for the previous week. Cross-hatched areas on the ECB map (green on the web version) indicate a weekly spray schedule through pod development.

SEE INSECT DISTRIBUTION MAPS ON PAGE 7

# Vegetable Disease Update

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

✓ **Cucurbits – Choanephora** - also known as Choanephora wet rot or blossom end rot is a disease which affects blossoms and young developing fruit. Infected female flowers may turn brown, 'mushy' and fall off prior to fruit set. Blossom infection can lead to fruit infection. Young fruit may turn a yellowish-brown with **masses of dense, white fungal growth with black 'pinpoint' spores developing on infected fruit**. Long periods of wet weather with excessive rainfall and high relative humidity favor the development and spread of Choanephora fruit rot. Unfortunately, control of Choanephora is difficult due to the constant development of new flowers and fruit, canopy production by the plant, and the ability of the fungus to survive saprophytically.

## ✓ **Pepper – Phytophthora blight**

For control of the crown rot phase of blight:

Apply 1 pt Ridomil Gold 4E/A or 1 qt Ultra Flourish 2E/A (mefenoxam, 4). Apply broadcast prior to planting or in a 12- to 16-inch band over the row before or after transplanting. **Make two additional post planting** directed applications with 1 pint Ridomil Gold 4E or 1 qt Ultra Flourish 2E per acre to 6 to 10 inches of soil on either side of the plants at 30-day intervals. Use formula in the "Calibration for Changing from Broadcast to Band Application" section of Calibrating Granular Application Equipment to determine amount of Ridomil Gold needed per acre when band applications are made.

When using polyethylene mulch, apply Ridomil Gold 4E at the above rates and timing by injection through the trickle irrigation system. Dilute Ridomil Gold 4E prior to injecting to prevent damage to injector pump.

✓ **Potato - Leak (*Pythium*) and Pink Rot (*Phytophthora*)** - Leak is a disease that usually enters the tubers through bruises occurring in conjunction with the harvesting of immature tubers during hot weather. Pink rot generally occurs in poorly drained areas. Apply one of the following fungicides with as much gallage as possible. Make three applications of one of the following fungicides. The first application should be made at nickel size tubers. The second and third applications should occur 14 and 28 days later. Be sure to get some coverage of the soil surrounding plants for root uptake to occur.

Ridomil Gold Bravo, Fluoronil (mefenoxam + chlorothalonil, 4 + M5) at 2 lb 76WP/A, or

Ridomil Gold/Copper (mefenoxam + copper, 4 + M1) at 2 lb 70WP/A, or

Ridomil Gold MZ (mefenoxam + mancozeb, 4 + M3) at 2.5 lb 68WP/A

✓ **Tomato – Bacterial spot, speck and canker** – Bacterial diseases can cause serious problems in the field if infections are allowed to spread. Apply Actigard (P) at 0.33 oz 50 WG/A, or fixed copper (M1) at 1 lb a.i./A plus a mancozeb (Dithane, Manex II, Manzate, Penncozeb, M3) at 1.5 lb 75DF or OLF, or ManKocide (M1 + M3) at 2.5 to 5.0 lb 61WP/A, or Cuprofix MZ (M1 + M3) at 1.75 to 7.25 lb 52.5DF/A on a 7 day schedule.

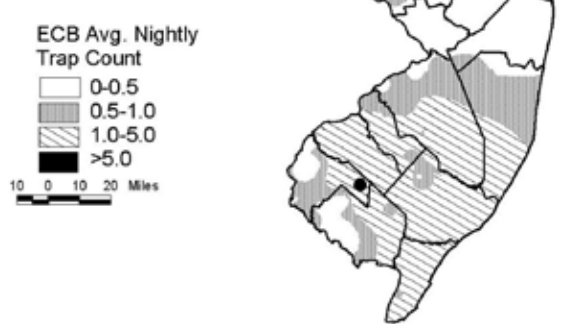
✓ **Tomato - Stem Rot/Pith Necrosis** – Symptoms begin to develop as green fruit begins to mature. Bacteria are most likely ubiquitous to tomato fields and develop when weather conditions and cultural practices lead to favorable conditions for disease development. Symptoms include the development of irregular brown lesions on main stems and branches. Late pruning (suckering) can provide entry points for both bacterial diseases, especially during wet conditions. Internally, stems will become brown and mushy. High humidity is necessary for disease development in both cases. High nitrogen and low night temperatures are associated with Pith Necrosis development. Control of both begins with cultural practices such as avoiding working in fields with wet foliage, avoiding late pruning and watching the amount of N applied to plantings.

✓ **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 2007 *New Jersey Commercial Vegetable Production Recommendations*.

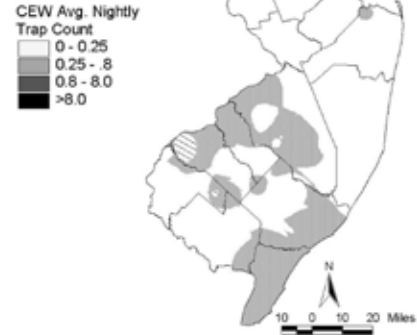
✓ **Tomato – White mold** - Symptoms of white mold are commonly seen around first flowering. Stems and branches become dark with water-soaked lesions which eventually turn soft. **After time, lesions turn a light tan-brown and are brittle**. During cool, moist weather a white cottony mycelium may develop on infected plants. **Large, black sclerotia may develop on the inside of lesions** and are diagnostic of white mold infections. A section 18 has been granted for the use of Topsin M WSB for the control of white mold (timber rot) in tomato for the 2007 production season in New Jersey. The section 18 label for Topsin M WSB (thiophanate-methyl, FRAC code 1) can be obtained through your county agricultural agent. The label must be in possession of the applicator at the time of application. □

**Distribution of Adult Corn Earworm  
for the Week Ending June 13, 2007**

**Distribution of Adult  
European Corn Borer  
for the Week Ending  
June 13, 2007**



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



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

## Weekly Weather Summary

*Keith Arnesen, Ph.D., Agricultural Meteorologist*

Temperatures averaged near normal, averaging 68 degrees north, 68 degrees central and 71 degrees south. Extremes were 95 degrees at Hammonton on the 8th, and 42 degrees at Charlotteburg on the 7th. Weekly rainfall averaged 0.34 inches north, 0.26 inches central, and 0.79 inches south. The heaviest 24 hour total reported was 2.34 inches at Pomona on the 4th to 5th. Estimated soil moisture, in percent of field capacity, this past week averaged 91 percent north, 85 percent central and 82 percent south. Four inch soil temperatures averaged 69 degrees north, 70 degrees central and 72 degrees south.

### Weather Summary for the Week Ending 8 am Monday 6/11/07

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	%FC
CANOE BROOK	.37	22.15	8.18	92	47	69.	2	773	296	82
CHARLOTTEBURG	.18	16.71	2.78	90	42	68.	4	675	324	78
FLEMINGTON	.14	20.49	7.22	93	44	68.	1	721	223	86
NEWTON	.67	12.38	-.08	91	45	67.	2	632	227	82
FREEHOLD	.20	16.30	3.15	87	49	68.	0	888	314	81
LONG BRANCH	.17	16.14	2.74	83	50	67.	-1	679	161	67
NEW BRUNSWICK	.14	21.03	8.12	88	48	69.	0	786	171	84
TOMS RIVER	.69	14.47	1.38	87	48	68.	2	742	222	64
TRENTON	.12	17.53	5.61	91	51	70.	0	823	169	61
CAPE MAY COURT HOUSE	.83	9.59	-1.97	88	52	70.	2	732	149	68
DOWNSTOWN	.40	14.49	2.66	94	49	70.	0	838	160	66
GLASSBORO	.02	14.90	2.21	93	50	72.	2	948	291	61
HAMMONTON	.80	13.62	1.27	95	49	71.	1	865	217	63
POMONA	2.45	14.23	2.91	89	48	70.	2	817	248	63
SEABROOK	.23	15.10	4.01	93	54	72.	2	962	279	66
SOUTH HARRISON	.16	16.03	2.68	92	54	72.	NA	912	NA	NA
WES KLINE -- GDD BASE 40 PINEY HOLLOW										
LAST WEEK	232	(Ending 6/04/07)								
THIS WEEK	215	(Ending 6/11/07)								

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**Pesticide User Responsibility:** Use pesticides safely and follow instructions on labels. The pesticide user is responsible for proper use, storage and disposal, residues on crops, and damage caused by drift. For specific labels, special local-needs label 24(c) registration, or section 18 exemption, contact RCE in your County.

**Use of Trade Names:** No discrimination or endorsement is intended in the use of trade names in this publication. In some instances a compound may be sold under different trade names and may vary as to label clearances.

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