

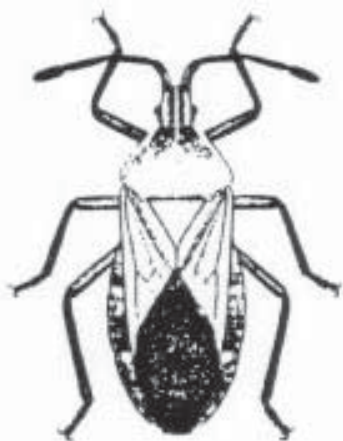
# PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

SEPTEMBER 20, 2006

## Pest Notes

*Gerald M. Ghidui, Specialist in Vegetable Entomology*



**S**quash bugs, *Anasa nistis* (DeGeer) has been causing heavy damage in cucurbit fields throughout southern New Jersey, and plants have been dying because of this damage. Both nymphs and adults of this pest attack primarily squash and pumpkin plants, sucking sap from the leaves and stems. At the same time, they inject a toxic substance into the plant causing a wilting of the stem or plant known as **Anasa wilt of cucurbits**. After the plants wilt, the vines and leaves turn black and brittle, closely resembling a **bacterial wilt** in the plants (bacterial wilt is a true wilt disease, while Anasa wilt is not). Large plants at this time of the year may have just several runners affected, and will thus appear as damage caused by bacterial wilt or even **squash vine borer**.

In the southwestern and mid-western states, squash bugs are known to transmit **Yellow Vine Disease**, a newly recognized bacterial disease of cucurbit crops. Melons, watermelon, and pumpkins are susceptible to this disease. The bacteria that causes this disease is injected into the plant while the squash bug feeds, and as the disease spreads within the plant, causes yellowing, then wilting, and eventually death of the plant. Early infection of this disease can result in severe yield losses. Although the disease has not been recorded in New Jersey yet, it has been slowly moving from the southwest into the mid-western states, and may already be in Ohio or Western PA.

It is important to monitor fields closely for early detection of squash bugs, before the population builds up and before significant damage is done. These pests are very difficult to control even when the population is low, and it is recommended that your spray applications target the egg and newly hatched nymph stages.

Effective insecticides for the squash bug include Asana XL, bifenthrin (Capture, etc), permethrin (Pounce, Ambush, etc), carbaryl (Sevin), and Thionex. Treatments should begin when eggs are found, and the treatments actually target newly hatched nymphs. If aphids are also present, Metasystox-R will control both aphids and squash bugs. Rotenone is labeled, and will control young nymphs (but is not effective on adults).

Use high pressure and high volume, if possible, to ensure penetration of the plant foliage and thorough coverage of the leaf undersides, where nymphs often congregate. It is beneficial to destroy the plants and work the soil immediately after harvest to reduce the overwintering population of squash bugs. Destruction of the vines also removes the food source that would allow late developing nymphs to complete their life cycle. □

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# Spinach Weed Control

Bradley A. Majek, Ph.D., Specialist  
in Weed Science

Full harvested and overwintered spinach weed control requires the control of several troublesome winter annual weeds, including chickweed species, mustard species, henbit, and annual bluegrass.

The only postemergence broadleaf herbicide currently and recommended and available for use to control these winter annual broadleaf weeds in spinach is **Spin-Aid**. The labeled rate range for Spin-Aid is 3 to 6 pints per acre, for the control of seedling annual broadleaf weeds. The use rate depends on the expected daily high temperatures the week of treatment. Use 3 pints when the daily high temperature is expected to be in the low 70's (°F), 4 pints when the daily highs are expected to be in the low 60's (°F), 5 pints when the daily highs are expected to be in the low 50's (°F), and 6 pints of Spin-Aid per acre when the daily highs are expected to be in the low 40's (°F). Apply at sunset to reduce the risk of crop injury. Weed control results with Spin-Aid become more variable when weeds are over one inch tall, well established, are beyond the seedling stage of growth, and have more than 4 true leaves. Heavily infested fields with well established or flowering winter annual broadleaf weeds may not be controllable, and may need to be abandoned. Spin-Aid will not control annual grasses such as annual bluegrass.

Apply **Sellect 2EC** in a separate spray application to control **annual bluegrass**. Use 8 fluid ounces of Sellect 2EC per acre, and add oil concentrate to be 1% of the spray solution. □

# IPM Update

Kristian Holmstrom, Research Project Coordinator II, Vegetable IPM Program

## Sweet Corn

Catches of **European corn borer (ECB)** adults continue to decline in all areas (see ECB map). ECB may still be found on sweet corn, but will be largely overshadowed by **fall armyworm (FAW)**. Few pre-silking plantings remain, but for these, scouting should still be undertaken at least weekly. Check 5 consecutive plants in each of 10 random locations in the planting. Look for the "shot-hole" type feeding on the leaves that indicates larval ECB infestation, or discolored sections in emerging tassels. Consider treating when feeding signs are present on 12% or more of the plants. Where plantings are approaching full tassel/first silk, consider that an insecticide treatment at this stage is very useful in eliminating any ECB larvae that may be moving from the opening tassel down to the area where the ear and stalk meet. The highest nightly ECB catches for the previous week have occurred at:

Allentown	1	Centerton	1	Shirley	1
Beckett	1	Indian Mills	1	Springdale	1
Belvidere	1	Medford	1	Tabernacle	1
Burlington	1	Seeley Lake	1	Wall	1

Adult **corn earworm (CEW)** catches have declined further over the past week (see CEW map). The present population is moderate, and activity will fluctuate with increases and decreases in night temperatures. In practical terms, this population is significant, and will cause considerable damage to corn if not managed appropriately. Silk spray schedules must be strictly observed to prevent CEW damage. On the CEW map, the crosshatched area (green on the web version) represents a 3-day spray schedule.

## Silking Spray Schedules\*:

- North – 3-5 days
- Central – 3 days
- South – 3 days

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

The highest nightly CEW catches for the previous week have occurred at:

Indian Mills	6	Seeley Lake	4	New Egypt	3
Cedarville	5	Allamuchy	3	Springdale	3
Jones Island	5	Elm	3	Tabernacle	3
East Vineland	4	Folsom	3	Wall	3

The occurrence of **fall armyworm (FAW)** larval feeding remains high everywhere in sweet corn, and reinfestation is occurring quickly after insecticide applications. All counties have damaging populations. FAW often attack young plants, so corn that is not yet silking must be scouted at least weekly. For those growing B.t. modified sweet corn varieties, remember that FAW is less affected by this toxin than are ECB and CEW. Some FAW injury will occur on these varieties. Look for damage that is initially similar to heavy ECB injury. As the larvae grow, damage becomes more severe, with ragged holes appearing in the whorl and lots of visible caterpillar droppings. Consider treating when 12% or more plants are infested with FAW alone or in combination with ECB.

SEE IPM ON PAGE 3

## Tomatoes

Late season **two-spotted spider mites (TSSM)** infestations are occurring in many areas now. Look at 2 complete leaves each on 5 consecutive plants in 10 random locations. Note the presence of whitish pin-spots or yellowing on the upper surface of the leaf. Look for TSSM on the underside of leaves with these symptoms. Note the number and location of sites with TSSM. Consider spot treating to prevent further spread into the field. Check also for the presence of **aphids**. Increasing aphid populations are often detected by the presence of their cast skins, which adhere to the sticky droppings they produce. If colonies are increasing over several scouting visits, especially if aphid droppings are accumulating on fruit, consider an insecticide to reduce the population.

In northern counties, injury by the **tomato fruitworm** (larval CEW) is appearing now. This is the result of earlier high CEW adult activity. If local catches approach 10 moths per night, consider weekly insecticide applications to limit damage. Remember that synthetic pyrethroid insecticides may increase aphid populations over time. Check the *2006 Commercial Vegetable Production Recommendations Guide* for effective materials.

## Pumpkins

**Down mildew (DM)** and **powdery mildew (PM)** are present in many fields. Rigorous fungicide programs must be maintained by growers in order to preserve foliage. In addition to the regular protectant fungicide program for PM, a fungicide with specific activity against the DM organism should be used on a weekly basis as long as foliage must be maintained to allow the fruit to mature. Check the *2006 Commercial Vegetable Production Recommendations Guide* for effective materials. DM first appears as sharp yellow spots on the upper surface of leaves. If conditions are wet, as with morning dew, dark spores will be produced from the lesion on the underside of the leaf. Lesions are first associated with veins, but will merge quickly to kill entire leaves. When this happens, the petioles remain erect, but the dead brown leaves hang in a "dish rag" fashion. Under conditions of high moisture, defoliation will occur rapidly.

As fruit mature, be sure to check at least weekly for the presence of **cucumber beetles** and damage to the rinds of maturing fruit. Striped and spotted cucumber beetles are attracted to fruit, and will scar the rinds in the hard green or mature orange stages. This is especially true with the large varieties like Atlantic Giant. Under moist conditions, damage to the rinds will result in a soft rot infection. Another problem at this time of the season is damage from vertebrate animals like deer, rabbits, mice, etc. These animals will feed on fruit at any time, but are particularly frustrating after fruit are mature and investment in the field is high. Consider removing mature fruit from the field as early as is practical to limit this type of injury.

## Peppers

Dominant pests in peppers now include **aphids** and **two-spotted spider mites**. Fields should be scouted weekly. Check 5 consecutive plants each in 10 random locations. Look at the undersides of 2 leaves per plant for the presence of aphids, spider mites and egg masses of **ECB** and **FAW**. Consider treating if aphids exceed approximately 120 per 100 leaves, and if spider mites are found on 10 leaves, and if 2 or more moth egg masses are found in the sample. Observe 2 fruit per plant for the presence of larval infestation or soft rot. Dramatically increasing soft rot is an indication of a possible ECB larval infestation.

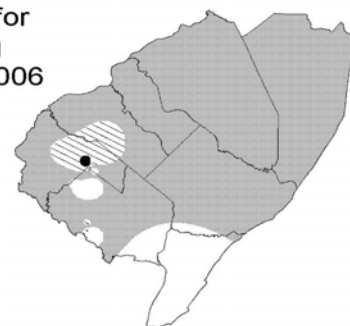
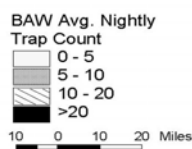
**Beet armyworm (BAW)** pheromone traps have been deployed from Cape May northward through Burlington County. BAW adult catches have increased slightly over the past week, with highest activity in lower Salem County. It is advisable to scout fields regularly for BAW at this time. First signs of infestation will include foliar damage and droppings near terminal growth. As larvae enlarge, they will attack fruit. Larvae are greenish, with a prominent dark spot on each side behind the head capsule.

## Cole Crops

Be sure to check all fields at least weekly for the presence of **imported cabbageworm (ICW)**, **diamond-back moth larvae (DBM)**, and **cabbage looper (CL)**, and BAW. All these larvae are capable of causing significant injury on all stages of late cole crops at this time. Be sure to look at the youngest leaves of plants, as this is the preferred feeding area of ICW. Consider treating if 20% of heading type crops are infested prior to head formation and if greater than 5% are infested while heads are present. For leafy greens, consider treating if 10% or more are infested at any stage. While scouting, note also the presence of target shaped lesions caused by **Alternaria**. This is especially important on cabbage that is to be stored. Consider protectant fungicide applications to limit this injury. Consult the *2006 Commercial Vegetable Production Recommendations Guide* for effective materials.

SEE DISTRIBUTION MAPS FOR ECB AND CEW ON PAGE 5

### Distribution of Adult Beet Armyworm for the Week Ending September 20, 2006



Data collected by Joe Mahar and processed by Kris Holmstrom  
Rutgers Cooperative Research and Extension

# Rippling Effects on Leafy Vegetable Market after Cases of E. Coli from Contaminated Spinach are Reported across U.S.

*Jhilson Ortiz, Mercer County Agricultural Agent*

Point of delivery prices (POD) for all leafy vegetables increased at retailer and food service venues as the FDA investigates the outbreak of E. coli in several states. The recall of Spinach and Spring Mixes containing Spinach has affected all the vegetable supply chain.

Growers, brokers, distributors, retailers and consumers are trading Spinach sales/consumption with other leafy vegetables, thus increasing the demand and price of these line items.

New Jersey growers will prepare to fill this market gap with efficient marketing, by labeling their future Spinach crops as Locally Grown, thus de-associating the local products from the current recall. At this time, New Jersey growers have to provide consumer confidence on the quality and integrity of their products and increase the brand value of Jersey Fresh.

Learning from the fact that POD prices have changed, they will also be able to negotiate a good price for all other leafy items as well. Knowledge of the market circumstances and their current and future implications help us shape our production and sales plans. □



*Quality and service*

# Tracing Food Products

*Jhilson Ortiz, Mercer County Agricultural Agent*

The ability to trace food products from consumer tables to planted plots in farms is becoming a requirement in this safety and service driven industry.

A few years ago, product tracing was only implemented in consumer products that had a bar code and were manipulated only by lot numbers.

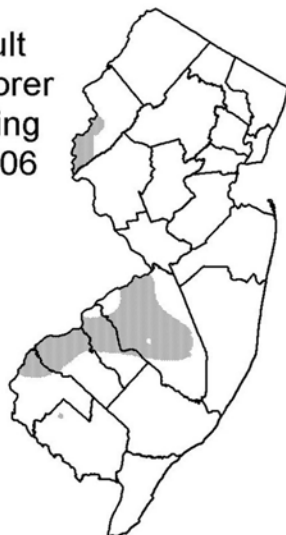
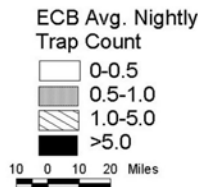
In today's society, technology and public interest for quality assurance prompted the organic foods sector to establish a trail of papers that ensure the product has not been compromised in any part, from production, to storage and all the way to transportation and delivery.

A process like this can be easily implemented on those farms that do not have paper trail/product trace-ability programs, even if the farms are not organic certified. The size and complexity of this trace-ability/Quality assurance program will depend directly on the size of the operation.



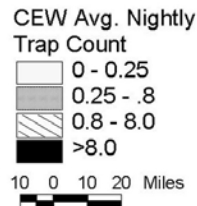
Ultimately, programs like this help us achieve a high level of quality assurance. It also gives us the opportunity to improve our service level by providing accurate information about our products and even let us separate compromised lots from our production schedule to maintain our level of quality and avoid costly recalls. □

Distribution of Adult European Corn Borer for the Week Ending September 20, 2006



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 September 20, 2006



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

## Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged near normal, averaging 62 degrees north, 65 degrees central and 66 degrees south. Extremes were 83 degrees at Hammonton, Pomona and Seabrook on the 18th, and 42 degrees at Charlotteburg on the 12th. Weekly rainfall averaged 2.65 inches north, 2.42 inches central, and 1.40 inches south. The heaviest 24 hour total reported was 4.14 inches at Toms River on the 15th to 16th. Estimated soil moisture, in percent of field capacity, this past week averaged 94 percent north, 87 percent central and 79 percent south. Four inch soil temperatures averaged 63 degrees north, 65 degrees central and 66 degrees south.


### Weather Summary for the Week Ending 8 am Monday 9/18/ 6

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	%FC
CANOE BROOK	1.64	28.13	-.05	80	45	63.	0	3060	570	96
CHARLOTTEBURG	2.40	32.41	3.96	78	42	62.	2	2594	617	94
FLEMINGTON	2.56	33.90	6.93	80	44	63.	-1	2912	359	96
NEWTON *	4.00	37.80	11.58	77	44	61.	0	2358	126	96
FREEHOLD	2.16	30.56	4.34	80	44	64.	-1	3004	298	95
LONG BRANCH	2.31	29.79	3.23	79	50	64.	-2	2948	298	92
NEW BRUNSWICK	1.67	27.66	1.04	82	47	65.	0	3135	292	96
TOMS RIVER	4.80	25.26	-1.89	80	47	65.	-1	3053	398	94
TRENTON	1.17	26.97	1.77	81	49	66.	0	3200	250	91
CAPE MAY COURT HOUSE	.57	18.07	-5.46	80	48	65.	-3	3130	458	71
DOWNSTOWN	1.11	24.26	-.47	82	47	65.	-2	2970	8	92
GLASSBORO	1.00	27.10	1.15	80	53	67.	0	3401	470	86
HAMMONTON	2.62	26.04	.11	83	47	66.	0	3325	386	89
POMONA	2.45	27.46	3.83	83	46	65.	0	3199	457	94
SEABROOK	.67	29.83	6.05	83	52	67.	0	3613	633	71
SOUTH HARRISON	.85	29.65	5.35	81	51	66	NA	3233	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW										
LAST WEEK 204	(Ending 9/11/06)									
THIS WEEK 177	(Ending 9/18/06)									

\* SOME CUMULATIVE VALUES ESTIMATED DUE TO EARLIER MISSING DATA

FIRST CLASS  
POSTAGE PAID  
PERMIT #576  
MILLTOWN, NJ 08850

NJ AGRICULTURAL EXPERIMENT STATION  
**RUTGERS**  
COOPERATIVE RESEARCH & EXTENSION  
Plant & Pest Advisory  
Rutgers' Cook College  
18 College Farm Road  
New Brunswick, N.J. 08901-8551



## PLANT & PEST ADVISORY VEGETABLE CROPS EDITION CONTRIBUTORS

### **Rutgers Cooperative Research & Extension (RCRE) Specialists**

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

George Hamilton, Ph.D., Pest Management

Joseph R. Heckman, Ph.D., Soil Fertility

Bradley A. Majek, Ph.D., Weed Science

Andy Wyenandt, Ph.D., Vegetable Pathology

### **RCRE County Agricultural Agents**

Atlantic, Richard W. VanVranken (609-625-0056)

Burlington, Raymond J. Samulis (609-265-5050)

Cumberland, Wesley Kline, Ph.D. (856-451-2800)

Gloucester, Michelle Infante-Casella (856-307-6450)

Hunterdon, Winfred P. Cowgill, Jr. (908-788-1338)

Middlesex, William T. Hlubik (732-398-5260)

Monmouth, Bill Sciarappa, Ph.D. (732-431-7260)

Morris, Peter J. Nitzsche (973-285-8300)

Passaic, Elaine F. Barbour, Agric. Assistant (973-305-5740)

Salem, Peter R. Probasco (856-769-0090)

Warren, William H. Tietjen (908-475-6505)

### **Vegetable IPM Program (732-932-9802)**

Joseph Ingerson-Mahar, Vegetable IPM Coordinator

Kristian E. Holmstrom, Research Project Coordinator II

### **Newsletter Production**

Jack Rabin, Associate Director for Farm Services, NJAES

Cindy Rovins, Agricultural Communications Editor

**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 RCRE in your County.

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