

PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

SEPTEMBER 22, 1999



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IPM Update

*Kristian Holmstrom and Sarah Walker, Program Associates
in Vegetable IPM*

Leafy Cole Crops

Diamondback and **beet armyworm (BAW)** larvae were found feeding on processing collards in southern counties. Monitor fields at least weekly for the presence of worms and treat if 12% of the plants are infested with any larvae. Choose control materials based on the primary pest present in the planting.

The recent cooler wet weather is favorable for **downy mildew** outbreaks, and in Burlington County **downy mildew** was found in a young collard planting. Look for purple specks on the undersides of the leaves associated with yellow or brown irregular patches on the tops of the leaves. Monitor fields at least weekly from seedling emergence or transplanting for the presence of foliar diseases and treat at the first sign of infection. See the *1999 Commercial Vegetable Recommendations* manual or contact your local county agent for recommended materials.

Lettuce

Although the cooler nights have reduced the adult **corn earworm (CEW)** population levels being found in blacklight and pheromone traps, the high levels of eggs laid last week should be hatching this week. Look for larvae on the undersides of leaves and in the heart leaves. The critical stage for controlling **CEW** is prior to when the center leaves form a head. Sample 5 plants in 6 locations for the presence of larvae and consider treatment if 1 larvae is found per 30 plants.

Peppers

Blacklight trap catches of adult **CEW** and **European corn borer (ECB)** have declined with the cooler weather, but the pheromone trap catches of **BAW** and **fall armyworm (FAW)** remain at moderate to high levels in the southern counties. Pepper fruit continue to be at risk of infestation from these pests due to the high pest levels at the end of last week. Maintain a weekly spray schedule with materials appropriate for the pests in your area (see sweet corn section and the distribution maps).

Spinach

Regularly scout fields for the presence of **aphids**, **BAW**, **webworms**, and **cabbage loopers**. Look for **webworm** larvae wrapped in webbing material at the base of plants. Check 10 plants in 5 to 10

SEE IPM ON PAGE 2

locations and consider a treatment if 5% of the plants are infested with small larvae. Check also for the presence of **aphids** on the undersides of the leaves, and consider a treatment if levels exceed 1/plant for seedling stage spinach, or 4-10 **aphids**/plants for established plants.

Sweet Corn

Catches of adult **CEW** have declined largely due to cooler night temperatures after the passing of last week's tropical storm. This pest continues to be a threat to silking sweet corn and requires strict adherence to silking spray schedules. The highest average nightly **CEW** blacklight trap catches are as follows:

Medford	25	Sergeantsville	9	Elm	7
Belvidere	18	Milltown	8	Chester	5
Hammonton	10	Seabrook	8	Califon	4
Shirley	10	Centerton	7	Sewell	4

ECB has declined throughout the state but is active at low levels. Most remaining sweet corn is silking at the time. Strict adherence to silking spray

schedules should provide adequate control of this pest. The highest average nightly **ECB** blacklight trap catches are as follows:

Woodstown	6	Shirley	2	Cohansey	1
Laurel Hills	2	Belvidere	1	Eldora	1
Medford	2	Burlington	1	Elm	1
Sewell	2	Chester	1	Long Valley	1

***General Sweet Corn Silking Spray Schedule**

South	2-3 days
Central	2-3 days
North	3 days

*These are general spray recommendations for large areas of the state. Growers can increase or decrease the intervals based on their own local situations.

This is the final week for publication of **CEW** and **ECB** distribution maps. The remaining two newsletters will contain information pertinent to these pests and their host crops.

SEE ECB AND CEW DISTRIBUTION MAPS PAGE 3

Weekly Weather Summary

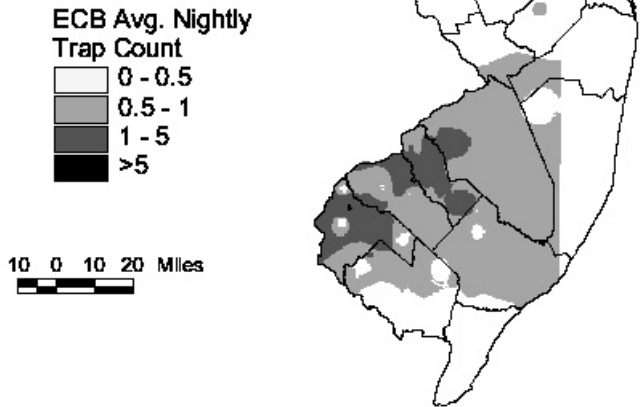
Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged near normal. Extremes were 82 degrees at Flemington and Woodstown on the 15th and 40 degrees at Charlotteburg on the 19th. Weekly rainfall averaged 8.29 inches north, 5.15 inches central, and 4.20 inches south. The heaviest 24 hour total was 8.49 inches at Flemington on the 16th to the 17th. Estimated soil moisture, in percent of field capacity, this past week averaged 93 percent north, 89 percent central and 84 percent south. Four inch soil temperatures averaged 68 degrees north, 69 degrees central and 70 degrees south.

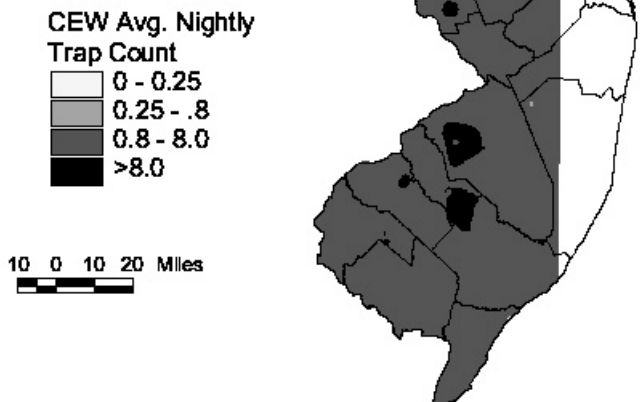
Weather Summary for the Week Ending 8 am Monday 9/20/99

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	8.85	25.55	-1.56	79	47	63.	1	2911	406	92
CANOE BROOK	10.02	29.16	.69	80	52	66.	3	3254	738	94
CHARLOTTEBURG	7.96	27.63	-1.12	78	40	60.	0	2455	458	94
FLEMINGTON	9.52	24.92	-2.31	82	47	65.	2	3030	451	95
LONG VALLEY	5.10	21.09	-8.36	76	46	63.	3	2636	424	94
LONG BRANCH	4.03	21.76	-5.04	76	51	65.	0	2978	298	88
NEW BRUNSWICK	7.04	26.55	-.33	79	48	65.	1	3185	314	94
PEMBERTON	5.17	26.46	-.69	81	47	66.	1	3285	477	86
TOMS RIVER	1.85	13.99	-13.41	79	49	66.	1	2997	312	86
TRENTON	7.65	30.34	4.89	81	46	64.	-2	2948	-34	89
CAPE MAY COURT HOUSE	2.77	16.88	-6.87	78	53	67.	-1	3214	506	88
DOWNSTOWN	4.49	25.70	.75	80	50	66.	0	3211	217	88
HAMMONTON	4.30	24.80	-1.37	80	48	66.	0	3194	223	86
POMONA	3.20	21.12	-2.70	78	49	66.	2	3160	389	87
SEABROOK	6.27	28.82	4.82	80	52	67.	1	3379	366	87
ATLANTIC CITY MARINA	4.15	23.71	.84	80	57	70.	4	3251	511	84
WOODSTOWN	7.96	34.31	8.65	82	46	67	NA	3512	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW										
Last Week 244 (Ending 9/13/99)										
This Week 183 (Ending 9/20/99)										

Distribution of Adult European Corn Borer for the Week Ending September 22, 1999*



Distribution of Adult Corn Earworm for the Week Ending September 22, 1999*



**NOTE: There were fewer stations reporting in Northern and Central NJ this past week due to the weather.*

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

Spinach and Greens Production Workshop Planned

*Stephen A. Garrison, Ph.D.,
Specialist in Vegetable Crops*

Rutgers Cooperative Extension and Seabrook Brothers and Sons will host a spinach and greens production workshop on Tuesday, December 14, 1999 at the Rutgers Agricultural Research and Extension Center, Upper Deerfield, New Jersey. The program will emphasize processing crops, but fresh market varieties and culture will also be covered.

Varieties, production practices, disease problems, and insect and weed control will be discussed by guest speakers, growers and specialists.

Growers, Agents, Specialists, and agricultural industry representatives are invited to attend.

Lunch will be provided at no charge, and pre-registration is required. Please reserve this date now. Additional information and preliminary program will be available in October. For information contact: Dr. Stephen Garrison, (856) 455-3100, or garrison@aesop.rutgers.edu. □

Vegetable Crops Diseases

Stephen A. Johnston, Ph.D., Plant Pathology

✓ **Asparagus:** Maintain applications of mancozeb for protection against **purple spot & rust**.

✓ **Bean (Snap & Lima):** Maintain a 7-day schedule with Bravo for the control of **rust**.

✓ **Cole crops:** **Bacterial soft rot** is present on Napa cabbage at this time. Infected plants near maturity wilt beginning with the older leaves. Petioles of older leaves at the crown of the plant have a brown, watery rot present that eventually girdles the entire crown. The disease was spread by the recent heavy rains. No control measures are available. Maintain applications of Bravo or maneb for control of **Alternaria leaf spot & downy mildew**.

✓ **Carrot:** Maintain applications of Bravo or Benlate every 10 days for the control of **Alternaria & Cercospora leaf blights**.

✓ **Cucumber:** **Cottony leak** is present on fruit following the recent heavy rains. Infected fruit are covered with white, fluffy mycelium, and eventually completely collapse, turning gray. An application of Ridomil Gold 4E at seeding is the recommended control measure. Apply Bravo + Nova for control of **anthracnose, downy mildew & powdery mildew**. Alternate with Quadris every 7 days for season long control.

✓ **Eggplant:** Maintain applications of a copper fungicide + maneb with a spreader sticker for control of **Phomopsis & Phytophthora fruit rots**.

✓ **Greens:** Maintain applications of Aliette for control of **downy mildew**.

✓ **Leeks:** **Purple blotch** is present at this time. Infected leaves contain numerous elliptical lesions with purple borders. The center of the lesion is black containing spores of the pathogen that will spread to adjacent leaves and plants. Maintain applications of Bravo every 10 days for control.

✓ **Lettuce:** Shortly after thinning, 10 and 20 days later, apply Ronilan or Rovral as a directed spray to the base of the plants and surrounding soil for control of **drop**. Rovral will also provide control of **bottom rot**. Do not cultivate after the last fungicide application in order to not disturb the layer of fungicide between the soil surface and the bottom of the lettuce leaves.

✓ **Onion, (Bunching):** Maintain applications of Bravo every 7-10 days for control of **foliar diseases**.

✓ **Pepper:** Both the crown rot and fruit rot phases of **Phytophthora blight** are prevalent at this time. Fruit rot symptoms are difficult to determine in some cases. Initially, only a small lesion the size of a dime may be present, and it will appear as a bruise or soft area. Eventually, a white yeasty type growth will

occur on the lesion and the spot will collapse. Apply a copper fungicide + maneb with a spreader sticker every 7 days for protection against the fruit rot phase of the disease.

✓ **Potato (Sweet):** For control of **surface rot**, minimize injury during harvest. Cure as soon as possible at 80-85°F and 90% relative humidity for 6-8 days. After curing, temperature should be lowered to 55°F with relative humidity maintained at 85°F.

✓ **Pumpkin & Winter Squash:** **Downy mildew** is prevalent in many fields. Infected leaves are necrotic and hang from their petioles. Apply Bravo + Nova, and alternate with Quadris every 7 days for control of **downy mildew** as well as **powdery mildew & black rot**.

✓ **Spinach:** **Damping-off** caused by **Rhizoctonia** is causing plants to collapse in some fields following the recent rains. There are no control measures available at this time. Scout fields for the presence of **white rust**. Once observed, apply the lowest labeled rate of a copper fungicide for control.

✓ **Squash (Summer):** Maintain applications of Ridomil Gold MZ or Ridomil Gold/Bravo + Nova, and alternate with Quadris every 7 days for control of **Phytophthora blight & foliar diseases**.

✓ **Tomato:** Maintain applications of Bravo alternated with Quadris every 7 days for control of **foliar & fruit diseases**. □

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