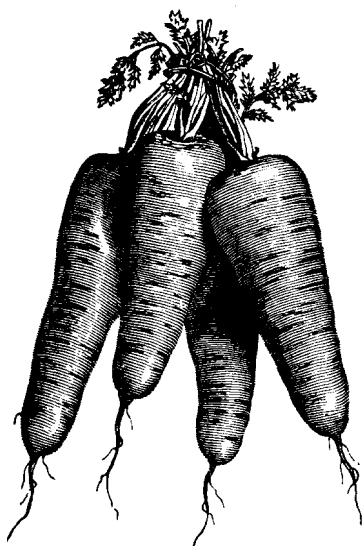


PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

AUGUST 30, 2000



INSIDE

Vegetable Crops Diseases	1
Pest Notes	2
IPM Update	3
Weekly Weather Summary	4

Vegetable Crops Diseases

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

✓ **Asparagus:** Monitor fields for the presence of **rust**. The disease is more prevalent on young fields than older fields. Once the disease is observed, applications of mancozeb every 7-10 days will assist in control.

✓ **Bean (snap & lima): Downy mildew** is present in lima bean fields at this time. Infected plants have pods with a white, appressed mold over the majority of the pod. Occasionally, racemes and petioles are infected as well. The cool, wet weather this month has been favorable for disease development. Apply a copper fungicide (Champ 2F, Kocide 2000, etc) once fields are in bloom, and repeat every 7 days for control. Due to wet soil conditions, any field with flowers present should be treated with a fungicide at this time for protection against **white mold (Sclerotinia)**. Add a spreader-sticker adjuvant to enhance and prolong fungicide activity.

✓ **Beet:** Maintain applications of a copper fungicide every 7-10 days for the control of **leaf spot**.

✓ **Carrot: Alternaria & Cercospora leaf blights** are present in fields at this time. Maintain applications of Bravo every 10 days for control.

✓ **Cole crops:** Maintain applications of Bravo or maneb every 7-10 days for protection against **Alternaria leaf spot & downy mildew**.

✓ **Corn (sweet):** Continue to scout fields for the presence of **rust**. If the disease is present in plants in the whorl stage or younger, apply a fungicide for control. Older plantings will not benefit from fungicide applications. The disease has been severe in many locations this year resulting in poor ear development due to loss of water from leaves, and eventually leaf necrosis.

✓ **Cucumber: Downy mildew** is present in fields at this time. Infected leaves have numerous yellow angular shaped lesions present, and beneath the lesions purple sporulation of the fungus is present. Applications of Ridomil Gold Bravo or Flouronil every 14 days in advance of any symptoms or applications of Bravo every 7 days once symptoms are observed should be made for control.

✓ **Eggplant:** Apply a copper fungicide + maneb with a spreader sticker every 7-10 days for control of **Phomopsis & Phytophthora fruit rots**.

SEE DISEASES ON PAGE 2

Pest Notes

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

✓ **General:** Many fields adjacent to vegetable fields have high populations of young **grasshoppers**. This insect may become a serious pest if the food source vanishes (either by becoming dry, being harvested, or being eaten). The **grasshoppers** will readily migrate to nearby fields, and this can result in serious problems with fields of spinach, leafy greens, sweet corn (**grasshoppers** feed on leaves and fresh silks), and other crops. Carbaryl (Sevin) is labeled for **grasshoppers** in all crops that it is registered for, and is very effective against **grasshoppers**. Consult label for each crop for all rates and restrictions that apply to that crop.

✓ **Pepper:** The **European corn borer** damage to peppers remains low at this time, a result of the unfavorable **borer** weather (cool, wet, windy evenings). On the RAREC research farm, only about 10% of the fruit are infested in untreated pepper plots. However, the **borer** adults (moths) are still in the field, and have the potential to deposit their eggs if the weather improves for them (warm, calm, dry nights). It's advantageous to monitor this pest by keeping track of their flight activity at night, using either blacklight or pheromone traps, or through the information in the IPM update.

Also, fields that received several pyrethroid sprays are starting to show up with high **aphid** populations. The **aphids** become resistant to the pyrethroid spray, but their predators and parasites do not, resulting in a rapidly expanding **aphid** population, even in cooler weather. For effective **aphid** control, consult the recommendations on page 120 of the *2000 Commercial Vegetable Productions Recommendations for New Jersey*. □

DISEASES FROM PAGE 1

✓ **Greens (Mustard, Turnip):** Apply Ridomil Gold 4E as a soil surface application after planting for control of **damping-off** & early season control of **downy mildew**.

✓ **Leeks:** Maintain applications of Bravo every 10 days for control of **purple blotch**.

✓ **Lettuce:** Beginning one week after thinning, apply Ronilan or Rovral as a directed spray to the base of the plant and surrounding soil for control of **drop**. Rovral will also provide control of **bottom rot**.

✓ **Muskmelon: Fusarium wilt** is present in some fields at this time. Infected plants completely wilt a few days before harvest. Stem tissue near the soil surface is brown and amber ooze is present within the brown lesions. No control is available at this time. In future years rotate away from muskmelons for 5 years, and use resistant varieties, such as, 'Athena' or 'Saticoy'.

✓ **Peppers:** Maintain applications of a copper fungicide + maneb with a spreader sticker every 7 days for control of **anthracnose & Phytophthora blight**.

✓ **Pumpkin & winter squash: Downy mildew** is now present in fields. Numerous angular shaped lesions are clustered over the leaf and infected leaves quickly turn necrotic. At this time infected fields are characterized with the majority of leaves necrotic and hanging limp on upright petioles. Maintain applications of Bravo + Nova + a copper fungicide alternated with Quadris + a copper fungicide for control of **downy mildew** & other **leaf & fruit diseases**.

✓ **Squash (summer):** Maintain applications of Ridomil Gold Bravo or Flouronil + a copper fungicide with Quadris + a copper fungicide for control of **downy & powdery mildew, scab & Phytophthora blight**.

✓ **Spinach:** Apply mefenoxam (Ridomil Gold, Ultra Flourish) as a soil surface application shortly after seeding for control of **damping-off** and early season control of **white rust**.

✓ **Tomato: Septoria leaf spot** is present in some fields at this time. Infected leaves contain small circular lesions with black specks in the center. Maintain applications of Bravo alternated with Quadris for control of **foliar & fruit diseases**. **Leaf mold** is present in greenhouse tomatoes at this time. Infected leaves have numerous yellow blotches present, and beneath the lesions is a velvety mass of olive colored sporulation of the fungus. Maintain ample ventilation and apply chlorothalonil for control. □

Vegetable IPM Update

Kristian Holmstrom and Sarah Walker, Program Associates in Vegetable IPM

Snap and Lima Beans

European corn borer (ECB) and **corn earworm (CEW)** adult blacklight trap counts have increased since last week, with locally high populations occurring (see the **ECB** and **CEW** maps). Sample lima bean fields at least weekly for the presence of **CEW** larvae. Use a 3 ft long cloth placed between the rows and shake both sides of the row onto the cloth. A treatment is recommended if one **CEW** larva is found per 6 foot of row.

Both **CEW** and **ECB** adult populations are at threshold levels in the processing snap bean areas (Salem and Cumberland Counties). Snap beans should be treated at the bud stage for **ECB** control and at the pin stage for both **CEW** and **ECB** control. From the pin treatment to harvest, a 4-6 day spray schedule is needed based on local blacklight trap counts in the Salem and Cumberland County areas. See page 77 in the *2000 Commercial Vegetable Recommendations* manual for the chart to determine spray intervals based on your blacklight trap counts.

Lettuce

Blacklight trap levels of adult **corn earworm (CEW)** are increasing in most areas of the state (see **CEW** map). Scout fields at least weekly for the presence of larvae and consider treatment if 1 or more **CEW** is found on 30 plants (check 5 consecutive plants in 6 locations in the planting). The critical time for control is during the 11-15 leaf stage, prior to head formation.

Peppers

European corn borer (ECB) and **corn earworm (CEW)** adult blacklight trap counts have rebounded in most areas this week, with locally high populations occurring. **ECB** is particularly high in Salem and Cumberland Counties (see **ECB** map). **Fall armyworms (FAW)** continue to be captured at moderate levels in pheromone traps in the southern counties. However, **beet armyworm (BAW)** levels in pheromone traps in the southern counties remain light and only sporadic infestations have been found. Maintain a weekly spray schedule for fields with fruit targeting primarily **ECB** and **CEW**.

Two spotted spider mites (TSSM) have been reported in some areas, but generally this pest has not been a big problem this year due to the cooler and rainy weather. **TSSM** thrive in hot, dry, dusty conditions. Usually the **mites** found now will not cause economic loss into the fall unless very heavy populations are present. **Spider mite** injury to the leaves

can appear as a nutrition problem, causing yellowing between the leaf veins. Look on the undersides of the leaves for a stippled or speckled whitish appearance between the leaf veins. **TSSM** are greenish black, with two spots on the back, and about the size of ground pepper. A hand lens is useful for confirming the presence of **mites**.

Tomatoes

Blacklight trap populations of **tomato fruitworm (CEW)** adults have increased in most areas since last week, with high populations occurring locally (see the **CEW** map and the sweet corn section for local counts). As the sweet corn acreage declines, it is more likely that this pest may affect tomato plantings. Continue to monitor plantings for the presence of larvae or fresh feeding damage to the fruit. Some stinkbug injury to fruit has been observed, but overall this pest has not been a problem for tomatoes this year. Blacklight trap captures of the primary stinkbug species continue to remain low at this time.

Sweet Corn

European corn borer (ECB) adult moth activity in the blacklight traps has increased since last week, with high populations occurring locally (see **ECB** map). **ECB** feeding in whorl and pretassel corn has been increasing also, and egg masses have been observed on leaves near the developing ear in tasseling corn. Usually this time of year **fall armyworm (FAW)** is the predominant pest in plantings prior to silk, but this year overall **FAW** pressure has been lower than usual. Continue to closely monitor plantings for both these pests, and make sure to clean up **ECB** infestations that exceed 12% plants infested prior to full tassel. **ECB** will move out of the tassels and into the stalk and midribs as the tassel becomes exposed, making control of this pest more difficult.

The highest average nightly **ECB** blacklight trap catches are:

Seabrook	15	Centerton	10	Seeley Lake	9
Woodstown	14	Shirley	10	Little York	8
Phillipsburg	13	Belvidere	9	Eldora	7
Ellisdale	11	Cohansey	9	Laurel Hills	7

Corn earworm (CEW) adult blacklight trap levels have increased significantly since last week, with some high populations occurring locally particularly in parts of the southern and central counties. This time of year the weather patterns greatly influence **CEW** moth captures, with higher populations occurring when tropical storm winds move into our area. In areas where the average nightly trap count is greater than 8 per night (see **CEW** map), a 2-3 day spray schedule may be necessary to prevent **CEW** infestation. Consider the weather patterns and temperatures along with the local blacklight trap counts of **CEW** when determining silking spray schedules.

SEE IPM ON PAGE 4

The highest average nightly **CEW** blacklight trap catches are:

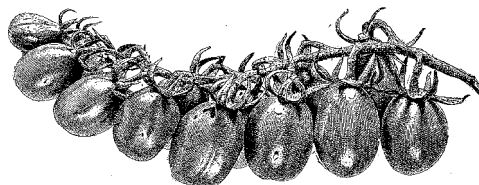
Centerton	33	Seeley Lake	17	East Vineland	10
Seabrook	20	Fishing Creek	15	Milltown	9
Cohansey	19	Shirley	14	Cedarville	8
Jones Island	17	Eldora	11	Hammonton	7

General Sweet Corn Spray Schedule

- Silking corn: North 3 - 4 days
- Central 3 day
- South 2 - 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.

SEE ECB AND CEW DISTRIBUTION MAPS ON PAGE 5



Weekly Weather Summary

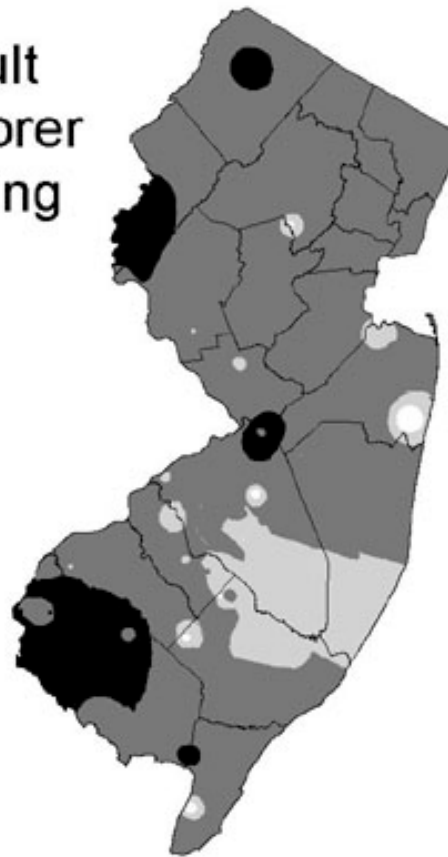
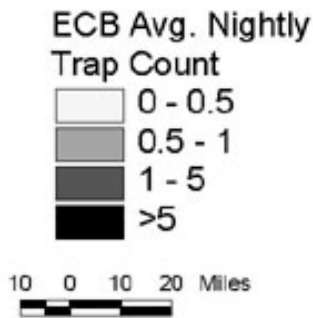
Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged near normal. Extremes were 86 at Pemberton on the 26th and 42 degrees at Charlotteburg on the 22nd. Weekly rainfall averaged 0.21 inches north, 0.05 inches central, and 0.38 inches south. The heaviest 24 hour total reported was 1.07 inches at Atlantic City Marina on the 24th to the 25th (but with some isolated totals of several inches on the evening of the 27th near Plainfield). Estimated soil moisture, in percent of field capacity, this past week averaged 81 percent north, 65 percent central and 62 percent south. Four inch soil temperatures averaged 64 degrees north, 67 degrees central and 68 degrees south.

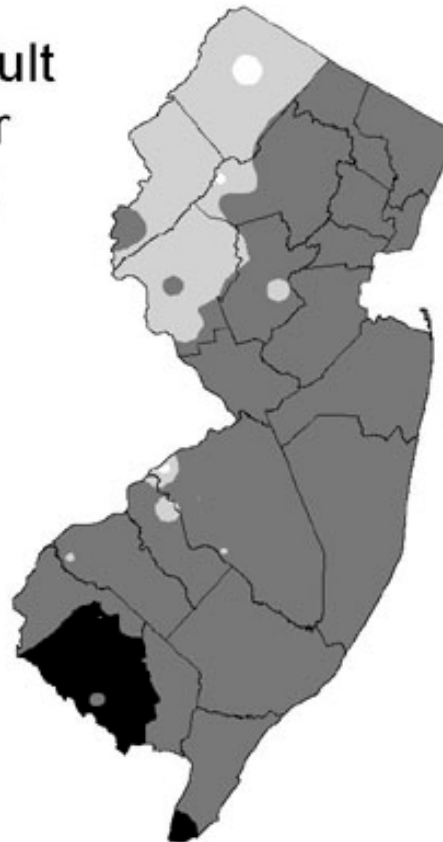
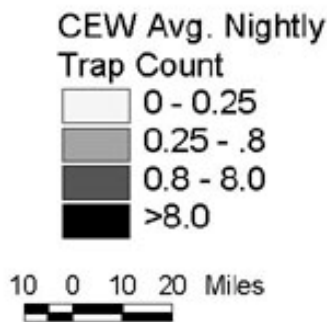
Weather Summary for the Week Ending 8 am Monday 8/28/00

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	.16	30.44	6.51	84	50	67.	-1	2081	-56	67
CANOE BROOK	.00	24.53	-.55	84	51	68.	-1	2270	118	78
CHARLOTTEBURG	.28	24.44	-.90	84	42	64.	-1	1683	-23	69
FLEMINGTON	.52	25.70	1.54	85	49	68.	-1	2302	95	86
LONG VALLEY	.08	25.87	-.26	78	48	64.	-2	1864	-42	73
FREEHOLD	.01	20.34	-3.23	86	53	70.	0	2487	138	67
LONG BRANCH	.14	27.61	3.73	80	54	69.	-1	2262	-10	50
NEW BRUNSWICK	.02	25.11	1.32	85	53	70.	-2	2406	-41	75
PEMBERTON	.06	23.55	-.64	86	48	70.	-1	2900	503	45
TOMS RIVER	.01	25.08	.68	83	50	68.	-3	2393	138	47
TRENTON	MISSING									
CAPE MAY COURT HOUSE	.19	22.81	1.73	81	52	69.	-4	2496	259	39
DOWNSTOWN	.14	23.70	1.40	84	51	70.	-2	2594	37	58
GLASSBORO	.11	23.78	.53	85	55	71.	-1	2740	205	50
HAMMONTON	.21	22.02	-1.24	85	49	69.	-3	2509	-30	56
POMONA	.60	29.12	7.62	82	50	69.	-1	2445	78	80
SEABROOK	.34	25.25	3.93	84	52	71.	-1	2707	136	70
ATLANTIC CITY MARINA	1.07	27.52	6.91	81	57	71.	0	2518	217	78
SOUTH HARRISON	.12	26.95	3.98	83	53	70	NA	2674	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW										
Last Week 200 (Ending 8/21/00)										
This Week 209 (Ending 8/28/00)										

Distribution of Adult European Corn Borer for the Week Ending August 30, 2000



Distribution of Adult Corn Earworm for the Week Ending August 30, 2000



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

Rutgers Cooperative Extension - NJAES
U.S. DEPARTMENT OF AGRICULTURE
Rutgers - The State University of New Jersey
Plant & Pest Advisory
18 College Farm Road
Cook College
New Brunswick, N.J. 08901-8551

PLANT & PEST ADVISORY VEGETABLE CROPS EDITION CONTRIBUTORS

Rutgers Cooperative Extension Specialists

Joseph A. Fiola, Ph.D., Small Fruit & Viticulture
Stephen A. Garrison, Ph.D., Vegetable Crops
Gerald M. Ghidui, Ph.D., Vegetable Entomology
George Hamilton, Ph.D., Pest Management
Joseph R. Heckman, Ph.D., Soil Fertility
Stephen A. Johnston, Ph.D., Plant Pathology
Bradley A. Majek, Ph.D., Weed Science

Rutgers Cooperative Extension County Agricultural Agents

Atlantic, Richard W. VanVranken (609-625-0056)
Burlington, Raymond J. Samulis (609-265-5050)
Cape May, Russell Blair (609-465-5115)
Cumberland, Wesley Kline, Ph.D. (856-451-2800)
Gloucester, Michelle Infante-Casella (856-307-6450)
Hunterdon, Winfred P. Cowgill, Jr. (908-788-1338)
Mercer, Daniel Kluchinski (609-989-6830)
Middlesex, William T. Hlubik (732-745-3443)
Monmouth, Bill Sciarappa, Ph.D. (732-431-7260)
Morris, Peter J. Nitzsche (973-285-8300)
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, IPM Program Associate
Sarah Walker, IPM Program Associate

Newsletter Production

Jack Rabin, Assistant Director, NJAES
Cindy Rovins, Editor and Designer
Mary Ann Hughes, Assistant Editor

Rutgers Cooperative Extension (RCE) provides information and educational services to all people without regard to sex, race, color, national origin, disability, or age. RCE is an Equal Opportunity Employer.

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.

Reproduction of Articles: RCE invites reproduction of individual articles, source cited with complete article name, author name, followed by Rutgers Cooperative Extension, Plant & Pest Advisory Newsletter.