

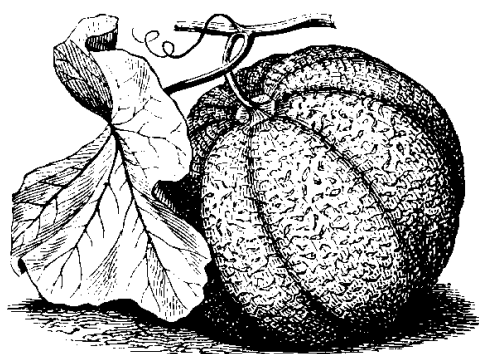
PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

SEPTEMBER 6, 2000

Pest Notes

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



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✓ **Corn:** **Corn earworm** populations have been high along the Delaware River areas and in some areas further inland. The moths deposit their eggs directly on the ear silk so if silk is present on the ears, treat with Asana, Baythroid, Lannate, Pounce, Ambush, or Warrior. Direct sprays at the ear silks. For an effective spraying schedule, see the IPM Update (in Delaware, the blacklight traps are recording higher than normal **corn earworm** catches, reaching up to >40 moths per night in some areas and 1-5 moths/night in others). Consult a local blacklight trap or IPM Update for the current **corn earworm** flight activity.

✓ **Beans (snaps, lima):** In late beans growers have had problems with either **spider mites** or **leafminers**. The recent hot weather certainly was beneficial to the development of **spider mite** populations. If leaves are turning brown or bronzed because of **spider mites**, use either Capture, dimethoate (Cygon), or Kelthane to reduce the **spider mite** population. Re-check the field after application (3-4 days later) to determine effectiveness. For **leafminers**, diazinon and dimethoate are both labeled (*snap beans only*). Thorough coverage is important for best results.

✓ **Melon:** **Melon aphids** are starting to cause leaf curl in melons, indicating a high population of aphids. Check under the leaves for aphid colonies, and prevent these pests from causing significant leaf curl. After leaves curl under, it is very difficult to control aphids and reduce the population. Also, identify the aphid (or have it identified) to determine species. If the **green peach** or **potato aphid**, treat with diazinon, Metasystox-R, Thiodan, Fulfill, or Provado. If the **melon aphid** (which has dark or black "tailpipes"), treat with Lannate, Thiodan, Provado, or Fulfill. Obtain thorough coverage under the leaves if possible. Note that Fulfill is a new aphicide, and is highly effective against all the species of pest aphids.

✓ **Pepper:** **Beet armyworm** feeding is starting to show in pepper fields. The leaves at the tops of the pepper plants show large, gaping holes, and usually the larvae can be found on the foliage. After a short period, the larvae may enter the fruit. Treat for these pests before they enter the fruit, at which time nothing can be done to salvage the fruit. If **beet armyworms** are present, treat with Asana, Baythroid, Confirm, Lannate, Pounce, Ambush, or SpinTor while the worms are still infesting the leaves.

SEE PEST NOTES ON PAGE 5

Vegetable Crops Diseases

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

✓ **Asparagus:** Monitor fields for the presence of **rust**. Once the disease is observed, applications of mancozeb every 7-10 days will assist in control. Controlling **rust** is important to minimize stress on the field, which will reduce the incidence of **Fusarium root & crown rot**.

✓ **Bean (snap & lima):** Maintain applications of a copper fungicide (Champ 2F, Kocide 2000, etc.) every 7 days on lima bean fields for control of **downy mildew**. Fields of lima beans and snap beans that are in bloom, and fields that are at field capacity will need to be protected with a fungicide that controls **white mold**. Add a spreader sticker to enhance and prolong fungicide activity. Note days to harvest on fungicide label, and be sure to allow enough time from treatment until harvest. Topsin M is now labeled for a preharvest interval of 14 days on lima beans. This is a reduction from 28 days on the previous label.

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

✓ **Carrot:** Maintain applications of Bravo every 10 days for control of **leaf blights**.

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

✓ **Corn (sweet):** **Rust** has been severe this year. For fields still in the whorl stage of growth, apply a fungicide for control. Older plantings will not benefit from fungicide applications. If not controlled the disease will result in severe leaf necrosis, which leads to poor ear development.

✓ **Cucumber:** **Anthraco**se is present in fields at this time. Numerous circular tan lesions with dark brown borders are scattered over the leaves. Infected leaves soon die. Maintain applications of Bravo + Benlate or Topsin alternated with Quadris for control.

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

✓ **Greens (Mustard, Turnip):** Scout fields for the presence of **downy mildew**. Once observed apply a copper fungicide or Aliette every 7-10 days for control.

✓ **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 plants and surrounding soil, and repeat 10 and 20 days later for control of **Drop**. Rovral will also provide control of **bottom rot**.

✓ **Muskmelon:** **Downy mildew** is severe in unsprayed fields at this time. Infected leaves completely desiccate and hang from the petioles. Applications of Bravo alternated with Quadris every 7 days is necessary for protection.

✓ **Pepper:** 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 severe in unsprayed fields at this time. Infected leaves are completely necrotic and hang limp from upright petioles. Entire fields are infected. For fields with leaves still present, maintain applications of Bravo + Nova + a copper fungicide alternated with Quadris + a copper fungicide every 7-10 days for control of **downy & powdery mildews** and **Phytophthora fruit rot**. Once pumpkins are mature they should be removed from the field and placed under cover (building, shed, etc.) to minimize infection from **Phytophthora fruit rot**. A pumpkin is mature when the orange color is present and the rind is hard. If the rind slips when passing one's finger along the ribs, then it is immature and should not be harvested.

✓ **Squash (summer):** **High winds** are resulting in the snapping off of plants in some fields at this time. Plants snap off at the soil line and a complete break occurs. Maintain applications of Bravo + Nova + a copper fungicide alternated with Quadris for control of **downy & powdery mildews** and **Phytophthora fruit rot**.

✓ **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**. For older fields, scout for the presence of **white rust**. Once observed, apply Quadris as a foliar spray at the rate of 9.2 – 12.4 fl oz/A and repeat every 7-10 days for a total of no more than 3 applications consecutively. Do not apply within 7 days of harvest, and there is a re-entry interval of 12 hours after application. Quadris is labeled in New Jersey under a Section 18 specific exemption of FIFRA granted by the US EPA to the NJDEP. The label was granted on August 23, 2000 and is effective until November 30, 2000.

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

Vegetable IPM Update

Kristian Holmstrom and Sarah Walker, Program Associates in Vegetable IPM

Corn Earworm Alert

Adult **corn earworm (CEW)** levels have increased dramatically over the past week (see **CEW** map). Many blacklight traps throughout the state are capturing extremely high numbers of moths. This level of **CEW** activity poses a threat to several vegetable crops including sweet corn, tomatoes, peppers, snap and lima beans, and lettuce. See individual crop sections for specific information.

Sweet Corn

At current levels, the threat of **CEW** infestation to silking sweet corn is extreme. It is now critical to keep to posted spray intervals as much as possible to minimize damage to sweet corn. Bear in mind that the warmer evening temperatures predicted for later this week will result in higher adult **CEW** activity.

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

Shirley	70	Jones Island	47	Hammonton	41
Centerton	67	Milltown	46	Seeley Lake	40
Medford	67	Woodstown	43	Belvidere	38
Chapel Hghts.	56	Downer	42	Fishing Creek	35

Moderate levels of adult **European corn borer (ECB)** are still being captured throughout the state, with very high numbers in parts of Cumberland and Salem Counties (see **ECB** map). Most remaining sweet corn plantings are now in the silk stage, and are regularly treated for **CEW**. These treatments will also prevent ear infestations of **ECB**.

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

Shirley	20	Little York	9	Crosswicks	6
Centerton	13	Seeley Lake	8	Phillipsburg	6
Woodstown	12	Upper Pittsgrove	7	Allentown	5
Ellisdale	10	Cohansey	6	Belvidere	5

General Sweet Corn Spray Schedule

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

Tomatoes

Tomato fruitworm (CEW) is a considerable threat to tomatoes at this time. While scouting fields, note the presence of round holes near the caps of fruit. Often damage is found on the exposed fruit near the top and outer edges of the canopy. **CEW**

larvae may be found protruding from fruit as they feed. The presence of feeding is an indication of how effective preventive treatments have been. To minimize damage, **CEW** must be treated on a preventive basis as long as local trap catches exceed 10 per night.

Snap and Lima Beans

In the processing bean area in Salem and Cumberland Counties, peak populations of **ECB** adults occurred in the blacklight trap this past week. In addition, **CEW** trap counts are extremely high in most areas of the state. For lima bean fields, sample weekly for the presence of **CEW** larvae and consider treatments if one **CEW** larva is found per 6 foot of row.

Snap beans should be treated at the bud stage for **ECB** control and at the pin stage through harvest for both **CEW** and **ECB** control. For processing beans in the Salem and Cumberland County areas, a 4-6 day spray schedule is needed from the pin treatment to harvest based on the **ECB** blacklight trap counts. Make sure to use materials that are effective for both **CEW** and **ECB**. For fresh market beans, a weekly schedule with materials targeting both **CEW** and **ECB** should be sufficient from the pin stage through harvest. See page 77 in the *2000 Commercial Vegetable Production Recommendations* book for the chart to determine spray intervals based on your blacklight trap counts.

Lettuce

Blacklight trap levels of adult **CEW** are very high in most areas of the state (see **CEW** map) as a result of last week's weather patterns. Scout fields regularly for the presence of **CEW** larvae and consider treatment if 1 **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

Moderate to high populations of **ECB** adults are occurring in blacklight traps throughout New Jersey (see **ECB** map). In addition, **CEW** adult blacklight trap counts are extremely high in many areas of the state (see **CEW** map). The adult populations of both of these pests may decline with the cooler nights, but eggs and larvae will be present for at least the next week as a result of this influx of moths. Since it is not possible to monitor these pests in the field, a preventive schedule is needed to minimize fruit infestations. A 5 to 7 day spray schedule is recommended to prevent fruit infestation from **CEW**. In areas where both **CEW** and **ECB** are high make sure to select materials that will control both pests. **Beet armyworm (BAW)** levels in pheromone traps in the southern counties remain light.

SEE IPM ON PAGE 4

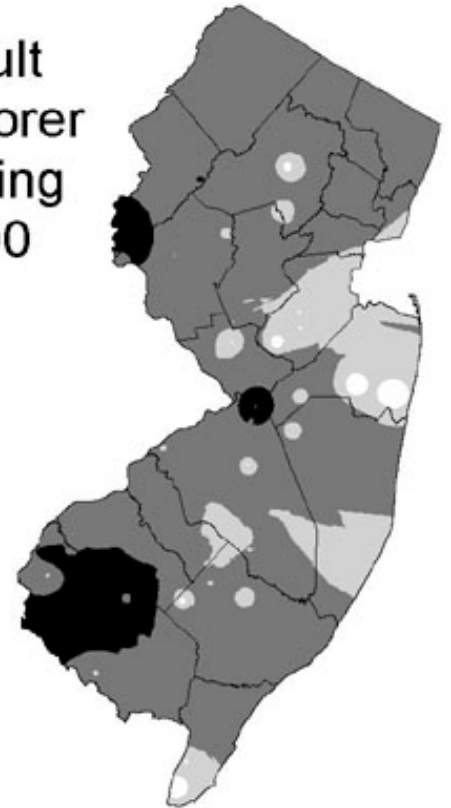
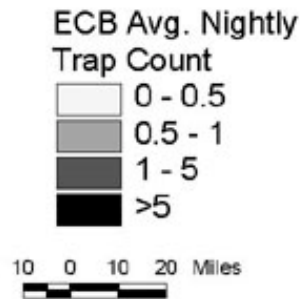
Cole Crops

Feeding pressure from **imported cabbageworm (ICW)** remains high throughout the state. **Cabbage looper (CL)** activity is low in the northern counties, but is moderate to high elsewhere. Locally, high populations of **diamondback moth (DBM)** are present in several areas. **DBM** can be extremely difficult to control, particularly when multiple stages (eggs, larvae, pupae, and adults) are present at once, as has been reported in Ocean County cole crops by Garden State Pest Management. Repeated use of one type of chemical should be avoided, especially if control has been inadequate. More than one application may be necessary as insecticides target the larval stage only. Check 5 plants each in 10 random locations throughout the field. Consider treatment when 20% of broccoli, cabbage, or cauliflower plants are infested with any larvae prior to heading, or when 5% of these plants are infested and heads are present. Consider treating greens when 10% of plants are infested with any larvae.

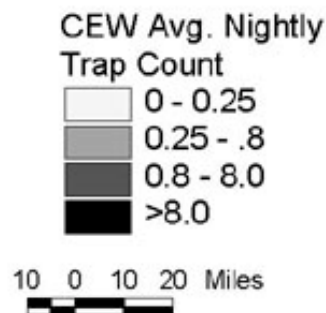
Spinach

As soon as plants emerge, begin monitoring fields for the presence of **BAW**, **CL**, and **webworms**. Look closely within and under the emerging leaves for the presence of larvae, leaf feeding, or webbing close to the leaves or at the soil level around the plant. Suggested threshold guidelines are to treat when 5% of the plants are infested with small **webworm** larvae or 1 **BAW** larvae is present per 10 plants. At this time, the **BAW** adult populations in peppers in the southern area pheromone traps have been low.

Distribution of Adult European Corn Borer for the Week Ending September 6, 2000



Distribution of Adult Corn Earworm for the Week Ending September 6, 2000



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

Strawberry Update

Peter R. Probasco, Salem County Agricultural Agent

Fields should be ready now for early September plantings. The earlier you plant in September, the better for maximum yields. Harden off the plugs by withholding water the last week. Weed control in the middle can be improved by adding Sinbar 80WP at 1/4 lb./A to the Devrinol 50DF at 5 lb./A. Be sure and plant the plugs at a uniform depth so the plug is not transplanted too deep. Diseases start in fields where the plugs are planted too deep or over watered the first week. Benlate, Syllit, or Topsin M can be sprayed on the fields after they are established to control any leaf spot diseases. □

PEST NOTES FROM PAGE 1

✓ **Tomato: Two-spotted spider mite** populations are increasing in tomato fields throughout southern New Jersey, mostly because of the high temperatures we recorded this past week. These pests can cause severe damage once the population level reaches the point that leaves curl under and turn yellowish, and webbing starts to appear. AgriMek, Danitol and Kelthane are labeled miticides for tomatoes. Also, use of dimethoate (Cygon) for **aphids** and **leafminers** will reduce the mite population. Note that thorough coverage of the foliage is important, and two successive applications may be necessary for management of high populations.

Watch for **tomato hornworms** on tomato plants (either the **tomato** or **tobacco hornworm**). These large caterpillars can rapidly strip the leaves from tomato plants, and will feed on the fruit leaving large gouges in the tomato skins. If hornworms are present, still small, and damage is being done, then see page 156 of the *2000 Commercial Vegetable Production Recommendations for New Jersey* for a list of the effective hornworm management materials for tomatoes in New Jersey. □

Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged much above normal. Extremes were 92 at Pemberton on the 3rd and 54 degrees at Charlotteburg on the 30th. Weekly rainfall averaged 0.71 inches north, 0.68 inches central, and 1.05 inches south. The heaviest 24 hour total reported was 2.00 inches at Glassboro on the 3rd to the 4th. Estimated soil moisture, in percent of field capacity, this past week averaged 71 percent north, 52 percent central and 51 percent south. Four inch soil temperatures averaged 71 degrees north, 73 degrees central and 74 degrees south.

Weather Summary for the Week Ending 8 am Monday 9/4/00

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	MON %FC
BELVIDERE BRIDGE	.18	30.62	5.68	88	62	75.	9	2257	1	54
CANOE BROOK	1.75	26.28	.14	89	55	74.	7	2439	164	85
CHARLOTTEBURG	.17	24.61	-1.80	87	54	71.	7	1834	26	58
FLEMINGTON	1.10	26.80	1.67	88	63	74.	7	2475	140	80
LONG VALLEY	.35	26.22	-.98	83	62	73.	9	2027	15	62
FREEHOLD	.24	20.58	-3.93	88	65	76.	7	2668	183	57
LONG BRANCH	1.05	28.66	3.80	82	68	75.	6	2436	28	75
NEW BRUNSWICK	.91	26.02	1.24	88	65	76.	5	2587	-12	75
PEMBERTON	.74	24.29	-.90	92	64	77.	8	3093	559	58
TOMS RIVER	.58	25.66	.28	87	68	76.	6	2576	180	52
TRENTON	.54	21.38	-2.11	86	64	76.	6	2649	-47	49
CAPE MAY COURT HOUSE	.74	23.55	1.60	84	69	76.	5	2681	290	44
DOWNSTOWN	.29	23.99	.80	88	67	78.	8	2789	87	40
GLASSBORO	2.55	26.33	2.13	87	67	78.	8	2935	255	100
HAMMONTON	1.07	23.09	-1.10	87	67	77.	7	2696	13	66
POMONA	.63	29.75	7.47	85	69	76.	7	2631	129	64
SEABROOK	.49	25.74	3.56	87	68	77.	7	2897	180	54
ATLANTIC CITY MARINA	1.56	29.08	7.67	85	71	77.	7	2708	263	100
SOUTH HARRISON	.67	27.62	3.79	86	66	76	NA	2857	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW										
Last Week 209 (Ending 8/28/00) This Week 265 (Ending 9/04/00)										

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