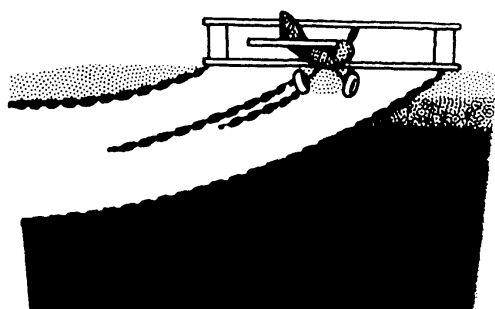


PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

JUNE 9, 1999



INSIDE

Section 18 Emergency Exemption Granted for Use of Tattoo C on Tomatoes	1
Veg Crops Diseases	2
Pest Notes	2
Weekly Weather Summary	3
IPM Update	4
Sludge Products Containing Lime	5
Deer Survey Results On-Line ...	5

Section 18 Emergency Exemption Granted for Use of Tattoo C on Tomatoes

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

The U.S. EPA has granted a specific exemption under the provisions of Section 18 of the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, to the New Jersey Department of Environmental Protection for the use of the fungicide, Tattoo C, to control **late blight** in tomatoes. The specific exemption is subject to the following conditions and restrictions:

1. Tattoo C may be applied by ground, chemigation, or air at a maximum rate of 2.3 pints product (0.9 pounds propamincarb) per acre.
2. A maximum of 11.5 pints of Tattoo C (4.5 pounds propamincarb + 4.5 pounds chlorothalonil) may be applied per acre per season.
3. A 7-day preharvest interval (phi) will be observed.
4. Tattoo C should only be used in situations when the registered fungicides on tomatoes may not provide suitable disease control (e.g., when plants are actively growing and the threat of moderate to severe disease pressure exists or infections are known or suspected to have occurred).
5. Prior to use in the following counties, the regional office of the U.S. Fish and Wildlife Service must be contacted in order to assess the potential exposure to the indicated species:
 - Atlantic, Burlington, Cumberland, Gloucester, Middlesex, Monmouth, Morris, Ocean, and Salem: Swamp pink
 - Atlantic, Burlington, Monmouth, and Ocean: Knieskern's Beaked-Rush
 - Burlington: American Chaffseed
 - Burlington and Cumberland: Sensitive Joint-Vetch
6. The following rotational crop guidelines must be followed in fields where Tattoo C is used:
 - Any time: potatoes and tomatoes
 - 30 days: winter wheat
 - 4 months: all other crops

Vegetable Crops Diseases

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

✓ **Asparagus:** Only cut production beds for a total of 8 weeks to reduce cutting pressure stress on the planting. The stress from over-cutting will result in an increased incidence of **Fusarium root & crown rot**, which will reduce the longevity of the planting.

✓ **Bean (snap & lima):** To reduce incidence of **root rots** be sure to completely plow down previous crop debris (particularly with double crop beans), and have as clean a seed bed as possible. Apply Ridomil Gold 4E in a 7-inch band over the row after seeding, or apply Ridomil Gold PC 11G as an in-furrow treatment at seeding.

✓ **Cole crops:** For control of **clubroot** in new seedlings, be sure the soil pH is 7.0 or above; the field is well drained, and the crop is produced on raised beds to minimize high soil moisture conditions following rainfall.

✓ **Cucumber:** Maintain applications of Bravo + Benlate or Topsin M as a foliar spray, and repeat every 7-10 days for **foliar disease** control.

✓ **Eggplant:** Maintain applications of mefenoxam (Ridomil Gold or Ultra Flourish) as an application to the base of the plant or via injection through drip irrigation every 21 days for control of **Phytophthora blight**.

✓ **Muskmelon:** Maintain applications of Bravo or mancozeb as a foliar spray to control **Alternaria leaf blight**, and repeat every 7-10 days. For fields with **angular leaf spot**, apply a copper fungicide + the full labeled rate of mancozeb, and repeat every 7 days.

✓ **Parsley:** Apply Ridomil Gold 4E just prior to emergence for control of **damping-off**. On established fields, avoid working in the field while the foliage is wet, and apply a copper fungicide every 7-10 days for control of **bacterial leaf spot**.

✓ **Pepper:** **Phytophthora blight** is present in some fields that experienced the heavy rains that occurred a few weeks ago. In many cases, proper drainage out of the field was not possible due to small dams at the ends of the beds. Prior to the next rainfall, use a box scraper and remove soil at the ends of the beds in order to allow excess water to leave the field during a rainfall. Remove infected plants and if a large area of plants is infected, remove a 2-3 ft. section of plastic beyond the infected area on each bed in order to prevent spread of the disease up the row. Maintain applications of mefenoxam (Ridomil Gold or Ultra Flourish) every 21 days to assist in control as well.

✓ **Potato (white):** For fields with nickel size and larger tubers present, apply Ridomil Gold MZ as a foliar spray, and repeat in 2 weeks for control of **pink rot**.

Pest Notes

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

✓ **General:** **Grasshopper** populations are rapidly building up in field crops. The **grasshoppers** are still small nymphs, but can pose a threat to some vegetable crops in the near future when the **grasshoppers** are larger and the field crop dries. The **hoppers** then migrate to the nearby vegetable crops. It is advised to monitor the fields around you, especially nearby field crops, to detect potential problem areas.

✓ **Eggplant:** **Flea beetles** are still causing damage to eggplant leaves, especially in fields that were not treated with imidacloprid at transplanting. Damage appears as small, round "shotgun" type holes in the leaves, which get larger as the leaf expands. Severe damage can cause the leaf to dry and fall off the plant. Align, cryolite, Guthion, SpinTor, Thiodan and Vydate are all labeled and effective for **flea beetle** control on eggplant. More than one application may be needed to control these pests, so monitor fields closely 2-3 days after application to determine effectiveness of spray.

✓ **Onion:** **Onion maggot** populations are increasing, based on the numbers of flies caught in the **onion maggot** flytraps. This represents the second generation, and flies will be depositing eggs on onions, leeks and related crops. Lorsban is labeled for dry-bulb onions, and diazinon is labeled for green onions. Effectiveness of either of these materials is in

SEE PEST NOTES ON PAGE 3

✓ **Spinach:** **White rust** is present in some fields at this time. Apply Aliette as a foliar spray for control.

✓ **Squash (summer):** **Phytophthora blight** is present in some fields of yellow squash at this time. Infected plants are completely wilted, and a black lesion is present at the base of the petioles on lower stems. Improve the drainage in fields to allow excess water to leave fields following rains, and apply Ridomil Gold/Bravo as a foliar spray every 14 days for control.

✓ **Tomato:** Tattoo C recently received a specific exemption (Section 18) for use on tomatoes for the control of **late blight**. Refer to the *Section 18 Emergency Exemption Granted for Use of Tattoo C on Tomatoes* article in this issue of the Plant & Pest Advisory for use directions. Tattoo C should only be used if **late blight** occurs in the region, and plants are actively growing. All fields with fruit 1/3 their final size should be on a 7-10 day schedule with Bravo alternating with Quadris for **disease control**.

✓ **Watermelon:** Maintain applications of Bravo + Benlate or Topsin M every 7-10 days for control of **anthracnose** and **gummy stem blight**. □

doubt because of insecticide resistance to both lorsban and diazinon in most onion-growing areas of New Jersey.

✓ **Pepper: Aphids** are starting to appear on pepper transplants. The weather has been ideal for **aphid** population increase (cool weather followed by spells of hot weather), and thus large numbers can suddenly appear virtually overnight. These pests can spread virus diseases within pepper fields. Control of the **aphids** will not stop the spread of virus, but may delay the symptoms long enough for acceptable harvests. Imidacloprid, Lannate, Vydate, MSR and Orthene are labeled for **aphid** control, and effectiveness may depend on aphid species. Consult page 119 of the 1999 New Jersey Commercial Vegetable Production Recommendations for more information concerning materials recommended for the melon aphid and the green peach aphid.

Also, the IPM scouts report finding some **European corn borer** egg masses on pepper transplants. This is normal, and **borers** may eventually bore into the stem. Generally treatment is *not* recommended for first generation stem damage to peppers because

so few plants are attacked and the cost of pesticide application is high. Fruit protection from second-generation **borers** is much more important.

✓ **Potato:** Flights of the **European corn borer**, based on pheromone and blacklight traps, are erratic and non-predictable; trap numbers have wildly fluctuated, probably because of the cool, then warm, nights. Calendar-wise, the population should peak at this time. If the numbers remain low throughout this week, it is likely that weather conditions were not conducive for first-generation **borer** activity, including oviposition.

Also in potato, the **leafhopper** populations are quickly increasing, and adults and nymphs can be found in potato fields. Fields that received low rates of imidacloprid at planting will likely have **leafhopper** adults and nymphs at this time; the **leafhopper** populations will probably be somewhat delayed in fields with higher rates of imidacloprid. **Leafhoppers** are a dangerous pest because of the damage potential, as well as the difficulties in early detection of **leafhopper** problems. Monitor fields closely by either visual examination or sweeping to give early detection of **leafhopper** buildup. □

Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged much above normal. Extremes were 95 degrees at Freehold on the 1st and 43 degrees at Charlotteburg on the 5th. Weekly rainfall averaged 0.06 inches north, 0.00 inches central, and 0.00 inches south. The heaviest 24 hour total was 0.12 inches at Trenton on the 24th to the 25th. Estimated soil moisture, in percent of field capacity, this past week averaged 70 percent north, 55 percent central and 36 percent south. Four inch soil temperatures averaged 68 degrees north, 70 degrees central and 71 degrees south.

Weather Summary for the Week Ending 8 am Monday 6/ 7/99

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	.09	9.81	-2.47	88	48	70.	4	486	38	60
CANOE BROOK	.00	9.50	-3.96	93	57	74.	8	617	206	66
CHARLOTTEBURG	.00	11.40	-1.97	91	43	67.	4	372	76	61
FLEMINGTON	.12	8.08	-4.69	91	47	70.	4	527	96	66
LONG VALLEY	.07	8.92	-4.82	85	48	67.	3	402	62	65
FREEHOLD	.00	9.29	-3.40	95	50	74.	7	620	118	54
LONG BRANCH	.00	9.88	-3.11	85	51	69.	2	535	86	42
NEW BRUNSWICK	.00	10.57	-1.90	90	50	71.	2	576	37	67
PEMBERTON	.00	10.71	-1.41	94	47	72.	4	650	119	36
TOMS RIVER	.00	5.12	-7.52	89	48	70.	6	515	57	38
TRENTON	.00	11.35	-.14	90	48	70.	1	499	-87	42
CAPE MAY COURT HOUSE	.00	6.85	-4.29	88	51	71.	4	613	100	18
DOWNTOWN	.00	10.08	-1.33	91	48	71.	2	624	24	43
HAMMONTON	.00	8.77	-3.12	92	48	71.	3	622	51	26
POMONA	.00	9.14	-1.81	90	47	72.	5	587	89	30
SEABROOK	.00	9.84	-.78	90	53	73.	4	721	116	37
ATLANTIC CITY MARINA	.00	7.43	-2.98	82	60	70.	4	626	155	20
WOODSTOWN	.00	11.18	-0.89	93	50	73	NA	707	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW Last Week 181 (Ending 5/31/99) This Week 221 (Ending 6/7/99)										

Vegetable IPM Update

Kristian Holmstrom and Sarah Walker, Program Associates in Vegetable IPM

Peppers

A **European corn borer (ECB)** egg mass was found in a field in Camden County. We usually do not have a problem with first generation **corn borer** in peppers if fruit is not present on the plants. However, if fruit greater than 1/2" is present in the early plantings they may be at risk for infestation if corn borers are active (greater than 1-2 per night) in your area (see map). Check plants for the presence of flat whitish masses (the eggs overlap like fish scales) on the undersides of the leaves. Just before the eggs hatch, the center of each egg will have a dark spot ('pinhead' stage). Our treatment threshold is one egg mass per 100 leaves.

Aphid populations have increased to threshold levels in several fields we are scouting. Look on the undersides of leaves and in the new growth for the presence of **aphids** and consider treatment if 100-200 **aphids** are found on 100 leaves and if the population is increasing despite the presence of predators (like ladybugs) or parasites (mummified aphids).

White Potato

In the blacklight traps located in potatoes in Salem and Cumberland counties, the **ECB** adult moth counts have declined again. We are finding **borer** damage in a field we are checking, so if **corn borers** are going to be a problem the signs of infestation (holes in the stems, flagging terminals) should be visible now.

Green Onions and Leeks

Wes Kline is reporting that the second-generation flight of the **onion maggot fly** is well underway in the traps that are being monitored in the East Vineland area. Onions will need to be protected from second-generation activity.

Sweet Corn

Threshold levels of **ECB** damage are now being found in all areas of the state. Check all whorl stage corn for the presence of fresh feeding and consider treatment if 12% of the plants are infested. As stated in previous newsletters, a critical time to control corn borers is the pretassel stage. The highest average nightly **ECB** blacklight trap catches are:

Medford	7	Cranbury	4	Centerton	3
Little York	6	Hackettstown	4	Hopewell	3
Mullica Hill	5	Jutland	4	Indian Mills	3
Chapel Hgts	4	Pedricktown	4	Laurel Hills	3

Larval **corn earworm (CEW)** have been found feeding in emerging tassels in Burlington County fields. Plants containing **CEW** should be included in the percent of plants infested that contribute to the economic action threshold. The highest average nightly **CEW** blacklight trap catches are:

New Egypt	1	Cinnaminson	1	Sewell	1
Allentown	1	Indian Mills	1	Centerton	1
Wall	1	Folsom	1	Hackettstown	1
Cranbury	1	Egg Harbor	1	Green Creek	1

General Sweet Corn Spray Schedule

Silking stage:	Central	5 to 6 days*
	South	5 to 6 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.

Tomato

Both brown and green **stinkbugs** are now active, as determined by sweep net and blacklight trap samples throughout the state. Tomato fields now in fruit should be treated periodically for **stinkbugs** to prevent damage to green fruit. **Stinkbug** feeding on green fruit results in a yellow blotch as the fruit ripens. **Stinkbugs** are difficult to spot in the field, but may be captured by sweeping field edges and grassy areas with a sweep net.

Snap Beans

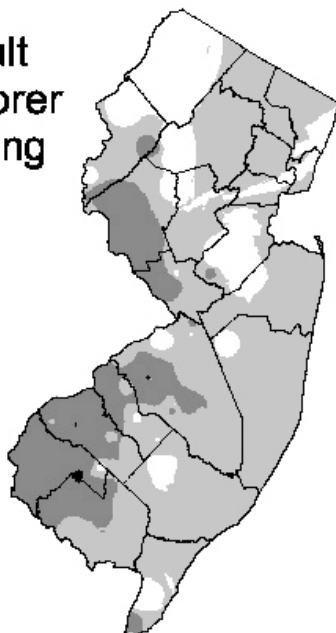
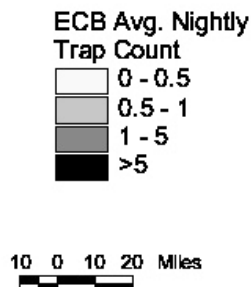
As **potato leafhopper (PLH)** increases throughout New Jersey, risk to snap beans increases. Thresholds for **PLH** on snap beans are 100 adults and/or nymphs per 20 sweeps with a sweep net prior to bloom, 250 per 20 sweeps at the bloom stage, and 500 per 20 sweeps during pod development. If sweep net samples are not conducted, the presence of the wingless nymphs on the undersides of leaves indicates a potential threat to the crop. The potential for damage is greater on younger plants.

Cole Crops

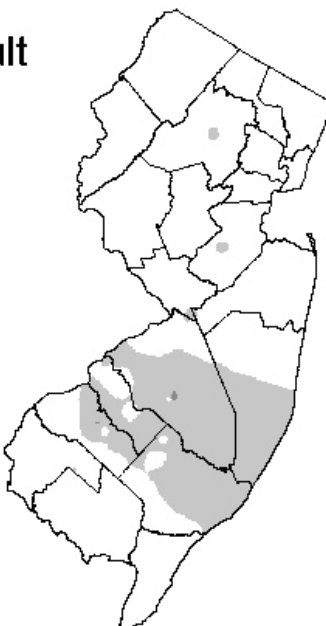
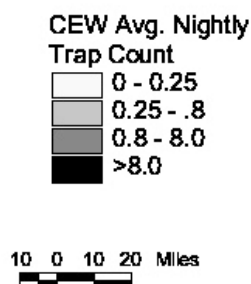
In the northern counties, **imported cabbage-worm (ICW)** is the main threat to broccoli, cabbage, and other cole crops. In the central counties, however, Frank Spiecker of Garden State Pest Management is reporting **ICW**, **cabbage looper (CL)** and **diamondback moth** larvae (**DBM**) on cabbage and broccoli. Check 5 plants each in 10 locations for the presence of worms. Consider treating if 12% of plants are infested with any larva prior to heading. As heads form, or on very young plants, consider treating when 5% or more plants are infested.

SEE DISTRIBUTION OF ECB AND CEW ON PAGE 5

Distribution of Adult European Corn Borer for the Week Ending June 9 1999



Distribution of Adult Corn Earworm for the Week Ending June 9 1999



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

Sludge Products Containing Lime

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

Limed-sludge products are being used in many areas of New Jersey as soil amendments. These products are of greatest benefit when used to neutralize the acidity of low pH soils. Heavy applications of limed-sludge have in some instances resulted in excessive soil pH elevation and manganese deficient crops. Sandy soils are especially vulnerable to overliming and to manganese deficiency. Beneficial use of limed-sludge products requires the same attention to application rates as traditional liming materials. The application rate of any liming material should be based on the calcium carbonate equivalent as listed on the product label and the soil test recommendation. Refer to Rutgers Cooperative Extension Fact Sheets 635, 767, 902, 903, 904, and 905 for further information about liming and soil pH management.

In New Jersey, to obtain a free copy of any Rutgers Cooperative Extension Sheets, contact your local County Cooperative Extension office or otherwise, write to the Publications Distribution Center, Cook College, Rutgers University, 57 Dudley Road, New Brunswick, NJ 08901-8520. □

Deer Survey Results On-Line

Rutgers' New Jersey Agricultural Experiment Station (NJAES) Center for Wildlife Damage Control conducted a 65 question survey of New Jersey's farmers in 1998 to improve understanding of how deer, and current deer management practices, impact agriculture. This comprehensive opinion survey determined farmers' perceptions of deer and identified and quantified how current deer management practices impact their farming. Survey results should lead to improved deer management programs that are more responsive to the needs of farmers seeking solutions to crop damage.

The Rutgers Deer Survey Results with color maps are now available on the Web: <http://www.rce.rutgers.edu/programs/wdc/deer.htm>. □

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)
Cumberland, Wesley Kline, Ph.D. (609-451-2800)
Gloucester, Michelle Infante (609-863-0110)
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 (609-769-0090)
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 provides information and educational services to all people without regard to sex, race, color, national origin, disability or handicap or age. Rutgers Cooperative Extension is an Equal Opportunity Employer.

Pesticide User Responsibility: Use pesticides safely and follow instructions on labels. The user is responsible for the proper use of pesticides, residues on crops, storage and disposal, as well as damages caused by drift. For specific labels, special local-needs label 24(c) registration, or section 18 exemption, contact Rutgers Cooperative Extension of your County.

Use of Trade Names: Trade names are used in this publication with the understanding that no discrimination is intended and no endorsement is implied. In some instances the compound may be sold under different trade names, which may vary as to label clearances.