

PLANT & PEST ADVISORY

VEGETABLE CROPS EDITION \$1.50

MAY 26, 1999



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Prioritizing Fields for Use of the PSNT

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

The Presidedress Soil Nitrate Test (PSNT) is useful to determine if the soil nitrogen supply is adequate or if sidedress nitrogen is needed to grow field corn or sweet corn. But because it takes time and labor to carry out the soil test and it is not practical to use the test on all acreage, one should first consider the merits of using the PSNT in various fields depending on field history.

The best use of the PSNT is in those fields where you expect there is enough N but you are not sure that it is enough. Sampling these fields that are questionable may save on sidedress N fertilizer. Examples of priority fields include field corn or sweet corn fields where manure or sewage sludge has recently been applied. Often such fields have sufficient nitrogen provided by the manure, but this is not always so. Various weather-related or manure management practices can influence nitrogen availability. The PSNT helps to take the guesswork out of deciding if a manured field of corn needs sidedress N.

Another situation where the PSNT is particularly useful is where corn is planted in fields following forage legumes or even a grass sod. Often when field corn or sweet corn follows a sod crop, little or no sidedress nitrogen is needed. The PSNT can be used to confirm this expectation of sufficient nitrogen availability for specific fields.

Sometimes the PSNT is useful in fields where there is no history of manure or sod crops. An example is where fertilizer N was broadcast at planting but subsequent rains may have caused the nitrogen to be lost from the soil. The PSNT is effective in this case to determine if sufficient fertilizer N remains in the soil.

Knowing the field history and weather conditions are the keys to targeting where to best use the PSNT. Generally there is little value in taking soil samples for the PSNT in fields that are expected to have low soil nitrogen availability. Soils that are sandy, low in organic matter content, and have no recent application of manure can be expected to have low soil nitrogen availability without using the PSNT.

Fact Sheets 569 and 760 give instructions on how to use the PSNT on field corn and sweet corn. □

Vegetable IPM Update

Kristian Holmstrom and Sarah Walker, Program Associates in Vegetable IPM

Peppers

Both winged and wingless **green peach aphids** were found at low levels in fields in Camden County. Check 2 leaves in the lower third of the plant in 5 plants in 10 locations in the field. The threshold is 1-2 **aphids** per leaf. Note the presence of predators such as **ladybeetles** and **lacewings**, and whether or not light brown **aphid** mummies are present (indicating **aphid** parasitism). If insecticides are not being regularly applied, predator and parasites can usually keep **aphid** populations below threshold levels.

White Potato

European corn borer (**ECB**) moths were seen flying in fields in Cumberland County, but blacklight trap catches in the potato area (Cumberland and Salem counties) have remained just below 10 per night. The cooler nights will slow egg laying and hatch. Scout all early fields for the presence of **ECB**, especially if planted with the Superior variety.

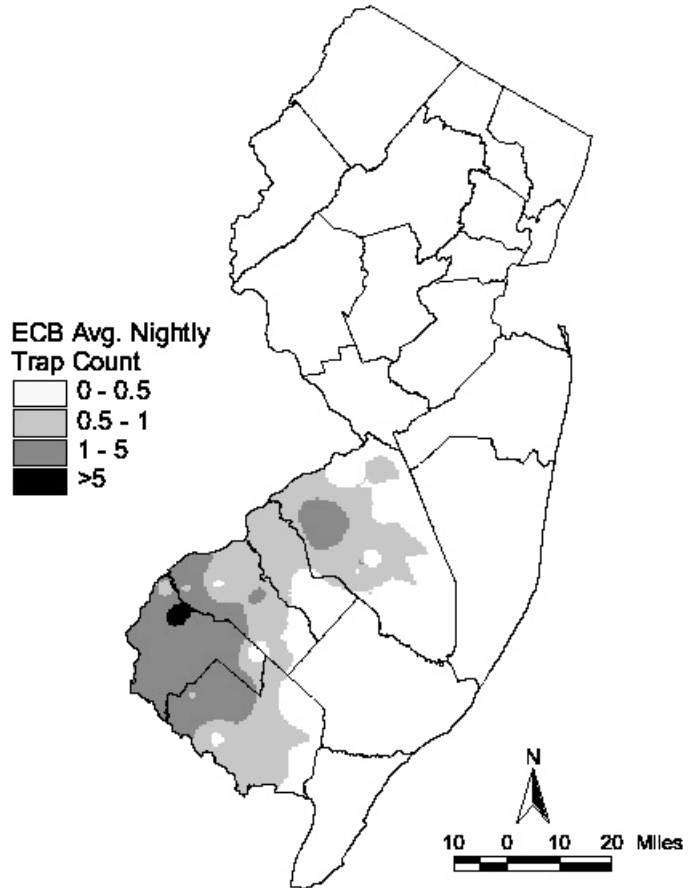
Sweet Corn

ECB adult counts are rising in many locations, but the highest populations continue to be in the southwestern part of the state. Infestation in the field has not yet been detected. The cooler nights will slow egg laying and hatch. Check whorl stage corn that is at least one foot high for the presence of **ECB** damage and consider treatment when 12% of the plants are infested. A critical time for treating **ECB** is at tassel emergence. The highest average nightly **ECB** blacklight trap catches are:

Shirley	8	Centerton	4	Beckett	2
Laurel Hills	7	Chapel Heights	4	Cinnaminson	2
Woodstown	7	Medford	4	Little York	2
Cohansey	6	Indian Mills	3	Sewell	2

Sporadic catches of corn earworm (**CEW**) continue as far north as Hunterdon County. The presence of these individuals indicates that successful overwintering has occurred in New Jersey. At present **CEW** is not a threat to corn, but it is likely that this adult population will increase somewhat as early sweet corn plantings begin to silk. These plantings may

Distribution of Adult European Corn Borer for the Week Ending May 26 1999



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

require more frequent silk stage insecticide treatments than usual this season. The highest average nightly **CEW** blacklight trap catches are:

Centerton	1	Indian Mills	1
Cinnaminson	1	Jutland	1
Eldora	1	Laurel Hills	1
Ellisdale	1	Princeton	1

Pest Notes

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

✓ **Error** - It was previously reported that Dibrom 8E was currently labeled in spinach for control of aphids. This label is no longer current. Current Dibrom labels do not list spinach.

✓ **General:** Rohm and Haas Company has announced that Confirm Insecticide has been granted a federal registration for use on leafy, fruiting, and cole crops, which includes tomatoes, peppers, eggplant, other fruiting vegetables, lettuce, celery, spinach, and other leafy vegetables. Confirm acts as an insect growth regulator, imitating the natural insect molting hormone (ecdysone). This causes the insect to prematurely and uncontrollably molt, thus killing the insect because it is not able to shed its old skin. This control method is selective for certain caterpillar pests, including tough-to-control **beet armyworms**. More information on this material will be provided when the State of New Jersey issues the label.

Corn earworm moths have been caught in the black light trap at the Research Center. It is likely that these represent the overwinter survivorship of some pupa from last fall because it is too early for **southern moths** to appear locally. Low numbers of **moths** are not likely to be an important concern at this time. We will continue monitoring, and if **moth** numbers increase, more management information will be available in the newsletter.

✓ **Onion:** The number of **onion maggot flies** caught in traps in the Vineland area has dropped to zero in some traps, and very low in others. This indicates that the first generation had ended. **Mag-gots** (larvae) are found in the onions (and leeks), and will soon pupate (or have pupated) to begin the second generation. Onions will still need to be protected from second-generation damage.

✓ **Potato:** Adult **Colorado potato beetles** are found in low numbers on potato foliage, mostly on volunteer potatoes or in "skips". It is recommended to use a material other than imidacloprid at this time, such as AgriMek EC, Vydate L, SpinTor 2EC, Thiodan, or Kryocide WP for adults. For small larvae, a biological material such as Raven is very effective.

Also on potatoes, federal registration for Fulfill (pymetrozine) for use on potatoes to control **aphids** is pending. It has been used effectively in Europe since 1993 for hard-to-control **aphids**. Controlling **aphids** may help reduce or prevent the transmission of potato viruses. This material has already been classified by the EPA as a "reduced-risk pesticide", and registration is expected soon.

The number of **European corn borer moths** caught in the black light traps has been increasing

Vegetable Crops Diseases

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

✓ **Bean (snap & lima):** To reduce incidence of **root rots** be sure to completely plow down previous crop debris, 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.

✓ **Beet:** Maintain foliar applications of a copper fungicide on a 10-day schedule for control of **Cercospora leaf spot**.

✓ **Cole crops:** Observe fields for the presence of **Alternaria leaf spot** and **downy mildew**. At the first sign of disease, apply Ridomil Gold/Bravo as a foliar spray and repeat every 14 days.

✓ **Cucumber:** The recent heavy rains have resulted in damage to foliage in many fields. Apply a foliar spray of a copper fungicide at the low labeled rate + mancozeb at the highest labeled rate for protection against **angular leaf spot** and **foliar fungal diseases** and repeat every 7 days. With **anthracnose**-susceptible varieties, add Benlate to the above fungicide treatment.

✓ **Eggplant:** For fields damaged by the recent heavy rains, apply a foliar spray of a copper fungicide + maneb for **foliar disease** protection, and repeat in 7 days.

✓ **Greens:** Observe fields for the presence of **downy mildew**. Once observed, apply Aliette as a foliar spray and repeat every 14 days.

✓ **Lettuce:** Observe fields for the presence of **downy mildew**. Once observed, apply maneb (10-day phi) or Aliette (3-day phi) as a foliar spray.

✓ **Muskmelon:** Wind-driven rains have resulted in numerous fields having plants with leaves containing tan lesions and a generally white, crusty appearance. This is the result of injury and not a disease. However, for fields damaged by the recent heavy rains, apply a foliar spray of a copper fungicide at the low labeled rate + mancozeb at the highest labeled rate for protection against **foliar diseases**. Repeat the application in 7 days. Control **cucumber beetles** from shortly after transplanting or emergence until flowering for prevention of transmission of **bacterial wilt**.

Parsley: For prevention of **bacterial leaf spot**, avoid working in the field while the foliage is wet, and apply a copper fungicide every 7 days once the disease is observed in the field.

SEE DISEASES ON PAGE 4

during the past week. **Moth** counts at the Research Center have averaged about 3-4 per night. In potato, Furadan, Guthion, Monitor and PennCap-M are labeled as well as the pyrethroids Ambush, Asana and Pounce. □

DISEASES FROM PAGE 3

✓ **Pepper:** For fields damaged by the recent severe rains, apply a copper fungicide at the low labeled rate + a full rate of mancozeb as a foliar spray to protect against **foliar diseases**.

✓ **Phytophthora blight** is present in some fields at this time. Infected plants are completely wilted and have a black, girdling lesion present on the stem at or below the soil line. Remove infected plants from the field, and apply mefenoxam (Ridomil Gold or Ultra Flourish) via drip irrigation or as a soil application directed to the base of the plant. Repeat application in 21 days.

Some fields have plants dying with a small, 1/8" thick, brown to black lesion girdling the stem 2-3" above the soil line. This is **gray mold (Botrytis)**, and is the result of infection in the greenhouse. In areas of the field with poor drainage, infected plants from the greenhouse will die within 2-3 weeks of transplanting. The disease will not spread, and there are no control measures at this time. In future years, once transplants reach a suitable size for transplanting, maximize air movement in the greenhouse or remove plants from the greenhouse to reduce incidence of **gray mold** on transplants.

✓ **Potato (white):** For early fields that have nickel-size tubers present, apply Ridomil Gold MZ as

a foliar spray and repeat in 2 weeks for the control of **pink rot**. This treatment will also protect against **late blight**; however, mancozeb should be applied 7 days later after the first application to keep plants protected against **late blight**.

✓ **Spinach:** Maintain applications of a copper fungicide at the lowest labeled rate for the control of **white rust**. For fields close to harvest, apply Aliette to avoid phytotoxicity with the copper fungicides.

✓ **Squash (summer):** Maintain applications of Ridomil Gold/Bravo as a foliar spray every 14 days for control of **Phytophthora blight**.

✓ **Squash (winter): Gummy stem blight** is present on transplants at this time. Infected plants have numerous tan lesions with dark borders scattered over the leaves. Destroy infected plants and following transplanting, apply Bravo or Quadris as a foliar spray for prevention of the disease in the field.

✓ **Tomato:** For fields damaged from the recent severe rains, apply a foliar spray of a copper fungicide at the low labeled rate + mancozeb at the highest labeled rate for control of **foliar diseases**. Repeat application in 7 days.

Watermelon: Once vines begin to run, apply Bravo + Benlate or Topsin M as a foliar spray to protect against **foliar diseases**. Repeat application every 7-10 days. □

Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged slightly below normal. Extremes were 88 degrees at Pemberton on the 23rd and 38 degrees at Long Valley on the 18th. Weekly rainfall averaged 1.79 inches north, 1.29 inches central, and 1.11 inches south. The heaviest 24-hour total was 2.04 inches at Pemberton on the 19th to the 20th. Estimated soil moisture, in percent of field capacity, this past week averaged 88 percent north, 74 percent central and 59 percent south. Four inch soil temperatures averaged 59 degrees north, 60 degrees central and 61 degrees south.

Weather Summary for the Week Ending 8 am Monday 5/24/99

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	2.87	9.34	-1.23	80	42	61.	-1	260	17	100
CANOE BROOK	1.32	8.50	-3.17	82	42	61.	-1	335	117	87
CHARLOTTEBURG	1.76	10.66	-.84	82	39	58.	-1	187	47	96
FLEMINGTON	1.42	7.35	-3.72	85	42	62.	0	287	55	85
LONG VALLEY	1.56	8.33	-3.58	76	38	58.	-2	209	38	98
FREEHOLD	MISSING									
LONG BRANCH	.77	9.06	-2.33	76	47	60.	-2	292	45	72
NEW BRUNSWICK	1.41	8.17	-2.66	79	42	62.	-2	317	2	91
PEMBERTON	2.67	9.66	-.85	88	42	64.	0	384	73	97
TOMS RIVER	.26	4.55	-6.47	80	43	62.	-1	269	0	52
TRENTON	1.35	8.80	-1.18	83	41	62.	-3	266	-84	91
CAPE MAY COURT HOUSE	.75	6.69	-2.99	76	47	64.	1	338	28	50
DOWNSTOWN	1.44	8.96	-.98	85	45	64.	-1	362	-1	83
HAMMONTON	1.27	8.33	-1.95	84	47	65.	1	352	13	79
POMONA	.75	8.73	-.88	79	47	64.	1	321	34	64
SEABROOK	2.00	9.23	.15	84	47	65.	0	432	64	98
ATLANTIC CITY MARINA	.46	7.31	-1.77	76	52	63.	1	347	74	45
WOODSTOWN	.91	9.24	-1.09	86	44	64	NA	424	NA	NA
WES KLINE	— GDD BASE 40 PINEY HOLLOW Last Week 129 (Ending 5/17/99) This Week 171 (Ending 5/24/99)									

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