RUTGERS COOPERATIVE RESEARCH & EXTENSION AT THE NEW JERSEY AGRICULTURAL EXPERIMENT STATION

PLANT & PEST ADVISORY

CRANBERRY EDITION $1.50 JUNE 16, 2005

Spotted fireworm egg mass on dewberry leaf

INSIDE

Field Update

Dan Schiffhauer, Agricultural Specialist, Ocean Spray Cranberries

Cranberry beds around the state are coming into bloom. Most Early Black and Howe beds are still quite a ways from being in full bloom, but cultivars such as Ben Lear and Stevens will be in full bloom by next week. All growers should have conducted some night sweeping before bloom to avoid nasty surprises during bloom. **Blossom worm** was fairly widespread this season, but there were farms that had low numbers of insects this spring and did not apply a pre-pollination spray.

Sparganothis pheromone traps are on beds and a few moths have been caught. I expect that the peak flight for *Sparganothis* will not be for several more weeks; their development is tied to that of the cranberry plants, and both are pretty late this season. A post-pollination spray for *Sparganothis* has been standard since I arrived in New Jersey, but that paradigm may need to be reexamined. *Sparganothis* was apparently not a problem on cranberry until the widespread spraying of synthetic insecticides after WW II. This is a common story in agriculture: insecticides are sprayed for one pest, the natural enemies of a second insect are wiped out and this second insect becomes a pest. The increased use of compounds such as Confirm and Intrepid, as well as the generally lower levels of organophosphate use, may be altering the equation in favor of the natural enemies of *Sparganothis* once more. Pheromone trap catches of *Sparganothis* have been falling over the last five years and I cannot explain this by any other means. *Sparganothis* still exists, but it might be time to consider making selective post-pollination sprays.

Spotted fireworm adults should be flying very shortly, if not already. This is another insect that has decreased greatly over the last few years. Once again I suspect that natural enemies are playing a major role in this process. There is a pheromone bait available for spotted fireworm, but I think that it is easier to simply look for the egg masses. They are laid on the upper surfaces of weed leaves (cranberry leaves are too small) on the bed and dams. This makes spotted fireworm one of the few insects that can be controlled by herbicide! If the female moth has no place to lay eggs on a cranberry bed, then the second generation larvae should not be present to cause problems. There is no established threshold for spotted fireworm but I urge growers to avoid the urge to spray this insect unless necessary, and then to use either Confirm or Intrepid. ❑

2005 Cranberry Growers Twilight Meeting

Ray Samulis, Burlington County Agricultural Agent

June 23, 2005 will be this year's Cranberry Growers Twilight Meeting to be held at the Marucci Cranberry/Blueberry Research Center in Chatsworth. As in the past, we will have part of the program looking at sites in the field and part indoors. Pesticide credits will be given for the program. Here is the semi final (o.k. evolving, tentative) program. The program will begin at 6:00 pm at the office building.

Cranberry Weed Control - Dr Brad Majek

Identifying Phytophthora/Fairy Ring - Dr Peter Oudemans

Cranberry Variety Phenology - Dr Nick Vorsa

The Current Bee Situation - NJDA (tentative)

Understanding the New Cranberry Irrigation Calculations - NJDEP (tentative)

What You Need to Know About Worker Protection Inspections - Ray Samulis

As I stated before, I cannot guarantee the weather, however I can guarantee valuable information, pesticide credits, good conversation, and food of some type. Hope to see you all there. ❑

Heat Stress in Agriculture

Source: U.S. Environmental Protection Agency

Background

In some regions, there are times during the growing season when the temperature stays above 90°F, even at night. High air temperatures and humidities put agricultural workers at special risk of heat illness. Worker Compensation claims for heat illness among agricultural workers are among the highest of any occupation.

Pesticide handlers and early entry workers are at even greater risk. The special clothing and equipment they wear for protection from exposure to pesticides can restrict the evaporation of sweat, blocking the body's natural way of cooling itself, which results in a buildup of body temperature. Exposure to certain pesticides can also produce sweating and there can be combined effects with exposure to heat. In addition, pesticides are absorbed through hot, sweaty skin more quickly than through cool skin.

What is heat stress?

Heat stress is the buildup in the body of heat generated by the muscles during work and of heat coming from warm and hot environments. **Heat exhaustion** and **heat stroke** result when the body is subjected to more heat than it can cope with.

When the body becomes overheated, less blood goes to the active muscles, the brain, and other internal organs. Workers get weaker, become tired sooner, and may be less alert, less able to use good judgment, and less able to do their jobs well.

As strain from heat becomes more severe, there can be a rapid rise in body temperature and heart rate. Workers may not realize that this is happening because there is no pain. Mental performance can be affected with an increase in body temperature of 2°F above normal. An increase of 5°F can result in serious illness or death.

The most serious illness is heat stroke. Its effects can include confusion, irrational behavior, convulsions, coma, and even death. Heat stroke can make survivors very sensitive to heat for months and cause varying degrees of brain and kidney damage. More than 20 percent of people afflicted by heat stroke die, even young and healthy adults. An average of nearly 500 people are killed each year in the United States by the effects of heat.

During hot weather, heat illness may be an underlying cause of other types of injuries, such as heart attacks on the job, falls, and equipment accidents arising from poor judgment.

A program to prevent heat illness will:

Protect health. Heat illness is preventable. When less severe forms occur, they can be treated before they become life-threatening.

Improve safety. Workers with even mild effects of heat illness are more likely to have accidents and use poor judgment.

Increase productivity. People work slower and less efficiently when they are under too much strain from heat.

There are numerous precautions that employers can take against heat stress. Some of them are summarized here:

Training. Train workers and supervisors in how to control heat stress and to recognize symptoms of heat illness.

See Heat Stress on page 3

HEAT STRESS FROM PAGE 2

Monitoring and Adjusting Workloads. Take into account the weather, workload, and condition of the workers, and adjust work practices accordingly. Higher temperatures, high humidity, direct sun, heavy workloads, older workers, and workers unaccustomed to heat are more likely to become ill from heat. Here are things to do:

- Monitor temperature and humidity, and workers' responses at least hourly in hot environments
- Schedule heavy work and PPE-related tasks for the cooler hours of the day
- Acclimatize workers gradually to hot temperatures
- Shorten the length of work periods and increase the length of rest periods
- Give workers shade or cooling during breaks
- Halt work altogether under extreme conditions.

Drinking. Make sure employees drink at least the minimum required amounts of water to replace body fluid lost through sweating. Thirst does not give a good indication of how much water a person needs to drink.

More details on all these measures are included in "A Guide to Heat Stress in Agriculture," May 1993. Issued jointly by EPA and the Occupational Safety and Health Administration, the Guide offers practical, step-by-step guidance for nontechnical managers on how to set up and operate a heat stress control program.

The Guide is available from the U.S. Government Printing Office (GPO) available from farm supply companies and from the U.S. Government Printing Office at: http://www.gpoaccess.gov/ (click on US Government online bookstore) or call (202) 512-1800 or write GPO, Superintendent of Documents, P.O. Box 371954, Pittsburg, PA 15250, and refer to document number 055-000-00474-9. Copies of the Guide from GPO are $5.00 each. A summary of the Guide is in chart form – English on one side, Spanish on the other, 24" X 20" is also available from GPO (refer to document number 055-000-00544-3). Copies of the summary chart are $1.50 each. ❑

Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged much above normal, averaging 77 degrees north, 78 degrees central and 77 degrees south. Extremes were 96 degrees at Canoe Brook on the 9th, and 53 degrees at Freehold on the 8th. Weekly rainfall averaged 1.15 inches north, 0.63 inches central, and 0.35 inches south. The heaviest 24 hour total reported was 0.97 inches at Flemington on the 6th to 7th. Estimated soil moisture, in percent of field capacity, this past week averaged 79 percent north, 80 percent central and 62 percent south. Four inch soil temperatures averaged 74 degrees north, 74 degrees central and 74 degrees south.

Weather Summary for the Week Ending 8 am Monday 6/13/ 5

	RAINFALL			TEMPERATURE				GDD BASE50		MON
WEATHER STATIONS	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	%FC
BELVIDERE BRIDGE	1.04	11.09	-1.99	91	62	77.	10	547	-1	68
CANOE BROOK	1.27	11.79	-2.43	96	63	79.	11	707	195	76
CHARLOTTEBURG	.93	14.25	.04	92	57	76.	11	560	180	68
FLEMINGTON	1.71	14.82	1.30	93	63	78.	10	634	100	86
NEWTON	.80	12.14	-.58	90	63	77.	11	592	112	65
FREEHOLD	.41	14.79	1.41	93	53	78.	9	664	52	68
LONG BRANCH	MISSING									
NEW BRUNSWICK	.40	12.46	-.67	94	64	79.	10	680	27	76
TOMS RIVER	.26	13.82	.50	91	63	77.	10	577	23	50
TRENTON	1.43	12.07	-.07	93	66	79.	8	682	-13	79
CAPE MAY COURT HOUSE	.24	12.39	.62	90	61	73.	4	469	-151	46
DOWNSTOWN	.17	11.50	-.54	94	65	78.	8	620	-98	41
GLASSBORO	.50	13.08	.15	94	67	79.	9	751	54	56
HAMMONTON	.24	11.83	-.76	94	65	78.	8	658	-30	39
POMONA	.52	12.68	1.08	92	66	77.	8	563	-62	51
SEABROOK	.41	12.50	1.18	93	66	79.	9	787	64	47
SOUTH HARRISON	.52	13.11	.29	93	66	78	NA	715	NA	NA

WES KLINE — GDD BASE 40 PINEY HOLLOW Last Week* 168 (Ending 6/6/05) This Week 268 (Ending 6/13/05)

* February total base 40 equals 32 units

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