

PLANT & PEST ADVISORY

CRANBERRY EDITION \$1.50

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Insect Update

Sridhar Polavarapu, Ph.D., Entomology and IPM

✓ **Blackheaded fireworm:** Pheromone traps have been capturing the males of Blackheaded fireworm for the past week at the Research Center (drawn March 25). We expect that adult flight in most bogs should be well underway at this time. Trap catches will peak in the following 5-7 days. We are beginning to see some egg laying. If populations are high and require an insecticide application, you should consider applying Confirm 2F at 16 oz/acre. Confirm 2F is safe to honey bees and other native pollinators. This insecticide now has a regular Section 3 registration. If you need the supplemental Section 3 label, please call Ray Samulis' office or the Research Station.

The recommended timing for managing blackheaded fireworm with Confirm 2F has changed slightly from last year. The first application should be made 8-10 days following biofix. Biofix is defined as capture of a total of 5 moths in three traps in the previous 7-day period. This means if pheromone trap counts exceed 5 moths in three traps over a 7-day period, you should apply the first Confirm 2F spray 8-10 days after this date. A second spray should follow 7-10 days after the first application. A spreader sticker such as Latron B-1956 is recommended with Confirm 2F. Please follow the instructions on the Latron B-1956 label regarding dosage. Confirm 2F is most effective when applied before the larvae are webbed up.

✓ **Spotted fireworm:** Adult flight has just started. Parasites are emerging from larvae and pupae at this time. Organophosphates applied at this time will affect parasite activity.

✓ **Sparganothis fruitworm:** Most of the larval population is currently in the last instar stage. The bulk of the larval population will reach pupal stage in the following 4-5 day period.

✓ **Blossom worm and false armyworm:** Mid-size blossom worm and false armyworm larvae are being seen in several cranberry bogs at this time. The young larvae feed on terminal buds. Mature larvae can cause serious crop losses by nipping off the buds and flowers. According to Dr. Henry Franklin, each Blossom worm can destroy as many as a hundred cranberry blossoms during the course of larval development.

Blossom worm larvae also feed on several broadleaf weeds, especially leatherleaf. At this time larvae are more active during the night. The peak blossom worm and false armyworm activity is

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around 11.00 PM to midnight. It is therefore important to sweep for this insect at these hours to obtain an accurate assessment of larval populations. Day-time sweep samples can seriously underestimate blossomworm and false armyworm populations. At the current cranberry prices, the old threshold of 4.5 larvae per sweepset of 25 sweeps may be too conservative. We are currently using an action threshold of 9-10 larvae per sweepset. If populations exceed this threshold, consider applying an insecticide as soon as possible; no later than 5-7 days before the placement of honeybees.

✓ **Mating disruption for Sparganothis fruitworm:** After several years of research funded by the New Jersey Blueberry and Cranberry Research Council, Ocean Spray Cranberries, Cranberry Institute, Wisconsin Cranberry Board, and several programs of USDA, we finally have a product available for the first time this season for disrupting the mating of Sparganothis fruitworm. This product, manufactured by 3M Canada Corporation, is exempt from the EPA tolerance requirement because of its non-toxic nature. The 3M technology uses a proprietary process to microencapsulate the major component of the sex pheromone of Sparganothis. The encapsulation process allows the slow release of the pheromone over the duration of adult flight. The presence of pheromone in the treated area is expected to reduce female mating and thereby decrease the number of larvae during the following generation. During the 1998 season in our field trials, pheromone application was as effective as the conventional organophosphate application for Sparganothis fruitworm management.

The recommended use rate for this product, based on extensive research conducted in New Jersey, is 2-2.5 fl. oz per application applied twice per adult flight. The first application should be made around the beginning of the first adult captures in the pheromone traps. A second application should follow 10-14 days after the first application. The microencapsulated pheromone can be applied by air or through the chemigation system.

Mating disruption for Sparganothis fruitworm and use of Confirm 2F during bloom can be combined to provide an effective IPM program to manage Sparganothis fruitworm and Spotted fireworm, the two most important fruit feeding pests in New Jersey. In addition to the two applications of the pheromone (at 2-2.5 fl. oz/application/acre), you may have to apply Confirm 2F in the last week of June followed by a second application at a 7-10 day interval. If Sparganothis fruitworm and Spotted fireworm are the only major pests you have, this program should provide adequate control of these two pests and

Produce Growers Directory Update

Pegi Ballister-Howells, New Jersey Farm Bureau

New Jersey Farm Bureau, with the help of a Jersey Fresh grant, is in the process of updating the 1995 Produce Growers Directory. The new format will be internet accessible and will be available on disk. Hard copy can be printed and kept in a three-ring binder. Many new categories have been added. We want to update existing entries, so all farmers must fill out the new form even if you are already in the existing edition. County Agents will be assisting with the mailing of the forms and Farm Bureau will mail out to those members with an interest in produce. If you do not receive a form, and wish to be included in the directory, contact the Farmhouse at 609-393-7163. This buyers' guide has been very well received in the past and is an excellent marketing tool for your fruit and vegetable products. The more farms listed, the more essential the resource will become to potential buyers. There is no charge to be included in the directory. □

replace the old organophosphate (Lorsban/Guthion/Diazinon) application immediately after the removal of honey bees. Confirm 2F has no effect on insects other than caterpillars and mating disruption with the Sparganothis fruitworm will affect only Sparganothis fruitworm populations. The advantages of this new program are: 1) selective control of target pests leaving the insect natural enemies and pollinator species unaffected, 2) non-toxic to agricultural workers and has only a 4-hour restricted reentry interval, 3) no food residue problems or other concerns typical of organophosphates, 4) enhanced environmental safety. The disadvantages are: 1) higher cost compared to conventional organophosphate applications, 2) lack of control of minor pests such as tipworm, blunt nosed leafhopper, flea beetle etc.

The microencapsulated pheromone product (3M sprayable pheromone for Sparganothis fruitworm) can be purchased from AG-CHEM INC (Ed Gunther, 609-694-0120). AG-CHEM INC. is the sole supplier of this product for New Jersey. □

Fertilizing Cranberry Bogs

Raymond J. Samulis, County Agricultural Agent

The Pine Barrens soils of New Jersey have long been known for their low fertility and coarse, sandy structure. While it is true that cranberries and blueberries tolerate these conditions, there is a great difference between tolerance and maximum production within bogs. Even though the total fertility requirements of cranberries are much lower than that of most other horticultural crops, advances in fertilizing techniques have played a major part in the recent dramatic increase of cranberry yields in New Jersey. For many years, growers in New Jersey had a standard program of a single application of 10-10-10 early in the season. I can remember asking growers some ten years ago, what was the basis for this single application of fertilizer in light of the fact that vegetable growers have used split applications for many years? There were few responses. Modern greenhouse producers have even gone a step further. They have developed what is known as "continuous feed" systems that fertilize every time the crop is watered. This is probably the optimal system since plants grown this way will not be over or under fertilized. Fertility needs are supplied precisely in proportion to the water needs of the plant. Cranberry fertilization falls somewhere between the extremes of a single fertilizer application and constant feed.

Modern cranberry fertilization now splits the total fertilizer application that is applied according to physiological growth characteristics rather than the Julian calendar. Fertilizer is applied in four, five or more separate applications based on stages of growth of the cranberry vines. The four stages of growth where fertilizer is commonly applied are roughneck, bloom, fruit set, and fruit sizing. Some growers will also apply a post harvest application. The different types of fertilizer used will vary according to either soil tests, tissue tests or preferably both. Rates of N vary from 10 to 30 lbs. total per season with 20% at roughneck, 30% at bloom, 30% at fruit set and 20% at fruit sizing. Also added into the calculation of total NPK needed is the overall appearance of the vines both in reference to vine color and amount of vine growth. Grape growers use a system where fertility requirements are based upon the total estimated pounds of cuttings on the vine prior to pruning. This is an interesting concept that may have application to cranberry fertility.

Foliar fertilization is another area of technology that interests cranberry growers. While it appears that this would be an efficient method to get rapid uptake of nutrients into the cranberry vines, research shows us that only about 15% of nutrients can be

Cranberry Grower Twilight Meeting

Raymond J. Samulis, Burlington County Agricultural Agent

Rutgers Cooperative Extension will be holding this year's second Cranberry Growers Twilight Meeting on Thursday, June 15, 2000. The program will be held at J.J. White on Route 70 in Browns Mills, which is operated by the Darlington Family. We will be having a tour of the bogs as well as informal discussions, demonstrations, and speakers on disease control, wildlife damage, entomology, weed control, weather information and much more. The program will begin at 6:30 p.m. and will include a "light dinner" (yet to be determined). As usual, we will also have pesticide re-certification credits available. I encourage all growers, employees, and others interested in the science of cranberry growing to attend this informative program. I hope to see you all there. □

absorbed through the foliage. The effectiveness of foliar applications results from nutrients being washed into the soil and taken up by roots. Foliar fertilization can supplement a good overall program, but cannot substitute for a sound fertility program based on soil applied fertilizers.

In recent years, Dr. Jim Paterson and I have investigated slow release fertilizer materials for use in cranberries. There are many types and formulations of slow release fertilizers such as sulfur coated urea, resin encapsulated, long chain polymer liquids and reactive layered-coated ureas. The problem with these materials is they release on a rather continual basis that may or may not coincide with the fertility requirements of the cranberry vines. Still another problem results from the release rate being temperature-dependent. What can happen is that a six-month rated fertilizer may release in a very short period of time, which is undesirable and has caused soluble salt injury to plants. Our results have shown that at the current time slow release fertilizers show little benefit to yields. The added expense is not justified when compared to standard fertility programs. Fertilizer technology is changing rapidly and producing new materials all the time.

Fertilizing new bogs encompasses different objectives compared to producing bogs. The desired effect here is for quick vine growth rather than yields. Ten pounds of N should be applied as soon as vines root followed by subsequent applications of 5 pounds N every three weeks into mid-August.

Details for taking representative tissue samples will be discussed in a future article that corresponds to the proper timing for tissue sampling, namely in the early fall. □

EPA Increases Risk Estimate of Pesticide Dursban

David Brown and Joby Warrick, Washington Post Staff Writers

Excerpted from *The Washington Post*, June 1, 2000.

The Environmental Protection Agency has concluded that one of the most commonly used pesticides, a compound sold as Dursban and found in dozens of home-and-garden products, may be more dangerous to people than previously thought, according to sources familiar with the decision.

The EPA's conclusion, which is expected to be announced June 8, will effectively remove the pesticide, also known as chlorpyrifos, from all over-the-counter products. Although farmers will still be allowed to spray it on crops, the chemical's agricultural use will be reduced to a degree not yet decided. Whether professional exterminators will be allowed to employ it to kill termites, ants and cockroaches is uncertain.

The decision is part of a systematic review of the safety of pesticides EPA is required to make under the 1996 Food Quality Protection Act. The law is designed

to protect children in particular from the toxic effects of pesticides. The newly estimated hazards of chlorpyrifos are based on experiments showing the substance can cause brain damage in fetal rats, not on human studies.

The EPA has determined that the compound poses no imminent threat to public health, and consequently won't order a recall of products containing it.

About 11 million pounds of chlorpyrifos are used each year by farmers and fruit growers; about 5 million pounds by industrial, commercial and government buyers; and about 3 million pounds by the home-and-garden market.

The level of chlorpyrifos that will now be deemed safe for children will be one one-thousandth of the "no-effect level." Such a stringent level effectively rules out home use of chlorpyrifos because consumers couldn't use the chemical without bumping up against that very low ceiling.

EPA is negotiating with Dow Chemical over what uses of chlorpyrifos will be permitted. If the manufacturer (and its customers) don't voluntarily agree to restrict its use to reach the new exposure level, the agency can force the restriction. □

Weekly Weather Summary

Keith Arnesen, Ph.D., Agricultural Meteorologist

Temperatures averaged much below normal. Extremes were 86 at Pemberton on the 24th and 39 degrees at Charlotteburg on the 28th. Weekly rainfall averaged 1.10 inches north, 1.16 inches central, and 1.25 inches south. The heaviest 24 hour total was 1.18 inches at Cape May Courthouse on the 22nd to the 23rd. Estimated soil moisture, in percent of field capacity, this past week averaged 96 percent north, 94 percent central and 86 percent south. Four inch soil temperatures averaged 58 degrees north, 61 degrees central and 61 degrees south.

Weather Summary for the Week Ending 8 am Monday 5/29/ 0

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC	
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP		
BELVIDERE BRIDGE	1.27	13.64	2.49	78	45	60.	-3	402	96	89	
CANOE BROOK	.82	9.63	-2.69	81	48	62.	-1	474	194	91	
CHARLOTTEBURG	.72	11.94	-.20	79	39	57.	-3	287	98	88	
FLEMINGTON	1.37	12.00	.34	81	47	60.	-3	490	194	93	
LONG VALLEY	1.31	12.01	-.56	75	45	58.	-3	342	117	90	
FREEHOLD	1.00	9.13	-2.51	79	46	61.	-4	524	167	89	
LONG BRANCH	1.05	10.97	-1.04	82	49	61.	-3	381	69	81	
NEW BRUNSWICK	1.31	11.58	.12	82	48	61.	-4	495	108	92	
PEMBERTON	.85	10.96	-.11	86	50	66.	1	780	397	80	
TOMS RIVER	1.17	9.84	-1.77	83	47	61.	-2	485	151	86	
TRENTON	1.55	10.95	.42	80	48	61.	-5	549	121	81	
CAPE MAY COURT HOUSE	2.08	12.44	2.24	81	52	62.	-3	505	125	100	
DOWNSTOWN	.80	11.37	.90	81	50	62.	-4	566	125	72	
GLASSBORO	.81	12.23	1.09	82	48	62.	-4	621	197	90	
HAMMONTON	1.53	9.88	-.96	80	49	61.	-5	530	114	88	
POMONA	1.55	9.45	-.66	81	50	61.	-3	488	133	88	
SEABROOK	.85	12.84	3.24	81	52	62.	-4	616	170	76	
ATLANTIC CITY MARINA	1.15	10.21	.66	80	53	63.	0	510	173	73	
WES KLINE — GDD BASE 40 PINEY HOLLOW	Last Week			133	(Ending 5/22/00)		This Week		154	(Ending 5/29/00)	

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