

PLANT & PEST ADVISORY

CRANBERRY EDITION \$1.50

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Insect Update

Sridhar Polavarapu, Ph.D., Entomology and IPM

Flea beetles: Growers should be on the look out for Flea beetle infestations in the next 2-3 weeks. Flea beetle adults are 1/8 to 1/5 inch long, shiny black with a reddish sheen on the front half. Adults can be distinguished by their jumping habit. Adults mostly feed on terminal foliage, skeletonizing the leaves from the lower surface. Adults are known to feed on numerous weeds around the bogs, most notably loosestrife, wild bean, redroot, sheep sorrel, ragweed, and goldenrod. On occasion adults may also feed on berries. Damaged berries will have surface scars and are often more vulnerable to fruit rotting fungi. Cranberries can tolerate substantial damage to the foliage at this stage of the crop. Young beds are more likely to have Flea beetle infestations than well covered mature bogs.

Adult activity in New Jersey begins in the last week of July and continues until early September. Eggs are laid just below the soil surface in August and September. These eggs overwinter and hatch the following May. Not much is known on the feeding habits of the grubs. There is only one generation each year.

Only severe infestations of Flea beetles may require an insecticide application. Sevin 4F at 3-6 pt/acre may provide effective control of Flea beetles.

Spotted fireworm and Sparganothis fruitworm: The second flight of both species has begun. Pheromone trap catches of Spotted fireworm are expected to peak around 12 August. Spotted fireworm lays its eggs in large masses of up to 200 eggs mostly on weeds in and around the bogs. These egg-masses will begin to appear in the next 4-5 days. Parasites belonging to the genus *Trichogramma* attack the eggs of both Spotted fireworm and Sparganothis fruitworm and cause significant egg mortality in the second generation. Both these species overwinter as early instar larvae on the bog floor. Therefore, larvae in this generation do not cause any damage to the crop.

Grub problems in cranberries: We have recently initiated a new project on root infesting grubs of cranberries. The objectives of this project are 1) to identify grub problems in New Jersey cranberries and develop appropriate monitoring methods, and 2) to develop management methods to control grub problems. To date we have identified **Cranberry rootworm, Oriental beetle, Japanese beetle, and Cranberry whitegrub** as the major grub species infesting our bogs. Except for the Cranberry rootworm, the remaining three grub species mentioned

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above fall under the broad category of "scarab grubs". The Cranberry rootworm, in fact, belongs to the same family as the Colorado potato beetle, a major pest on potato crops.

With the exception of the Cranberry white grub, the remaining insects have a one-year lifecycle. Cranberry white grub has a 2- or 3-year lifecycle. Most of the Cranberry white grubs that we collected so far in cranberries are *Phyllophaga anxia*. Several other *Phyllophaga* species have also been collected from our bogs in the past two years. Most of the annual grubs that we have (Cranberry rootworm, Oriental beetle, and Japanese beetle) will reach the third instar stage (last larval instar) in the following few days. Grubs in this stage cause the most damage to the roots. All larval stages of Cranberry white grub can be found in the bog at this time.

Vines under stress from root-feeding insects will begin to show symptoms in the next few days. The damaged vines can be easily lifted and rolled back like a carpet. Also, vines in infested areas may be weak (spindly), and in severe cases, may even die leaving bare patches in the bogs.

Most of our surveys to date have utilized bogs around the Chatsworth area. We would like to expand our surveys to include all major cranberry growing areas of the State. Please give us a call at (609) 726-1590, Extension 12 if you have bogs suspected to harbor grub infestations. □

Rutgers Begins Cranberry Crop Nutrition Research Program

Jack Rabin, Assistant Director, NJAES

I am pleased to announce that this fall Rutgers will be recruiting an Assistant Research Professor to work with growers for five years on improving their cranberry crop management. The new researcher will be stationed at the Rutgers Blueberry/Cranberry Research and Extension Center in Chatsworth and will have a joint appointment in both research and extension.

How did this exciting new support for the industry come about? During 1997-98 growers met with the New Jersey Agricultural Experiment Station (NJAES) and Rutgers Cooperative Extension administration urging greater support for cranberry research at the Rutgers Blueberry/Cranberry Research and Extension Center in Chatsworth. New Jersey cranberry growers have financially supported research and extension, and continued development of the Chatsworth Center, as much or greater than any other commodity group on a per acre basis of crop production. They felt research staffing was less than for comparable crops at Rutgers.

The growers had previously met and assessed their priority needs. Entomology and IPM are currently well-served by both Rutgers and Ocean Spray with Dr. Sridhar Polavarapu and Dan Schiffauer, respectively. Plant pathology work on the whole fruit rot complex is in capable hands of Dr. Peter Oudemans. Dr. Nick Vorsa works in plant improvement, varieties, and many other areas as well as directing our Chatsworth Center. Only crop nutrition and management was missing.

Ranking high on this grower list of priority needs was mineral nutrition of cranberry crops; the major and minor fertilizer nutrients and crop management strategies that result in the highest possible yields and fruit quality. The growers also determined that research in this area was more important than extension outreach. Many growers remember with respect the yield and quality raising contributions made for New Jersey by Dr. Joan Davenport when she worked with Ocean Spray Cranberries, Inc. This has been the missing link in our research and extension team at Chatsworth. Also, nutrition and plant physiology seemed to be a greater priority concern to New Jersey cranberry growers than to growers in other regions, so not much help was currently available to build on Joan Davenport's work.

Rutgers committed some support funds. Grower Abbott Lee, also a member of the Ocean Spray Research Committee, helped pave the way for a five year, \$185,000, grant from Rutgers to Ocean Spray, matched 50/50 by Rutgers, to raise the level of support and recruit a competent new cranberry nutrition researcher. Both Rutgers and Ocean Spray leveraged their support to improve the area of crop nutrition and management than each was prepared to do alone. Also, since this problem appeared as a higher priority for New Jersey than other regions, this puts all our support in the region where the need appeared greatest. Our new scientist may be called upon to lend expertise in other production areas, just as our current faculty do.

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I wish to thank all New Jersey growers for their continued support of the Plant & Pest Advisory Newsletter, the continued support of research and extension through our Center in Chatsworth, and especially for moving forward with plans for construction of additional space to relieve inadequate facilities at Chatsworth. I can not express how proud I was when Dr. Joe Speroni, Director of Agriculture, Food & Quality Sciences at Ocean Spray, who also made this research addition a reality, remarked to me that of all the stations where Ocean Spray supports work, they felt the Chatsworth Center gives them the most bang for the buck. □

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ACGA Annual Field Day

August 27, 1998

8:30 a.m.

**Rutgers Blueberry/Cranberry
Research & Extension Center
Chatsworth, NJ**

**For further information call
(609) 726-1590**

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