

PLANT & PEST ADVISORY

CRANBERRY EDITION \$1.50

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Fertilizing Cranberry Bogs

Raymond J. Samulis, Burlington 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 ten years ago, what the basis for this single application of fertilizer was 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 precisely supplied 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 applications that are 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

See Fertilizing on page 3

Insect Update

Sridhar Polavarapu, Ph.D., Entomology and IPM

✓ **Blackheaded fireworm:** Pheromone traps have been capturing male Blackheaded fireworms for the past week at the Research Center (drawn March 30). We expect the trap catches to peak around 4-6 June. 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 has a section 18 registration against blackheaded fireworm in New Jersey. You should have the section 18 label in your possession at the time of insecticide application. Confirm 2F should be applied 10-14 days after the beginning of adult flight and 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 Latron B-1956 label regarding dosage. If you have any questions, please call the Research Center at (609) 726-1590.

✓ **Spotted fireworm:** Adult flight activity of Spotted fireworm has started around May 27 at the Research Center. Most of the population is in sixth instar and prepupal stages. High levels of larval parasitism has been recorded from two cranberry bogs around Chatsworth area.

✓ **Sparganothis fruitworm:** Most of the larval population is currently in fourth instar stage. Sparganothis fruitworm pass through five larval instars before reaching pupal stage. The bulk of the larval population will reach pupal stage in the following 10-day period. It is too late to use organophosphate insecticides to control Sparganothis fruitworm or Spotted fireworm at this time. □

1st Annual Cranberry Growers Twilight Meeting

Ray Samulis, Burlington County Agricultural Agent

In today's technological society, it is easy to look for complex solutions for problems that may have simple causes. For example, you would be surprised how many upland farm problems I diagnosed that initially appeared to be some disease or physiological symptom, only to find out that the trouble was a soil pH of 4.8! All farmers know the value of lime in our area, but somehow the importance of liming needs to be reviewed periodically. Over the last few years, I have had great success with educational programs for farmers where we taught basic fertilization, weed identification, disease diagnosis and other topics that were a review for most farmers.

Cranberry grower tours in New Jersey have focused on cutting edge research and technology that is both important and exciting. This year I am initiating a back-to-basics **Cranberry Growers Twilight Meeting** to address everyday contemporary problems that cranberry growers experience. Topics will include: how to know if your bee colonies are healthy and using bee colonies for maximum pollination; the fine points of using Stinger for effective weed control; identifying common cranberry insects and symptoms of damage; fungicide timing and selection; complying with the worker right-to-know program and other important topics. A tour of the bogs and hands-on demonstrations of current problems should prove informative. You may want to bring samples of specific problems from your farm for the experts to view.

Sam and Neva Moore at 126 Moore's Meadow Road, Tabernacle, have graciously agreed to host this initial meeting at their farm. If it proves successful, these meetings can become a regular rotating initiative. Tree fruit growers have had this type of program for years and recently the blueberry growers have also started a similar program with great success.

The program will be held **Wednesday, June 17 at 6:30 p.m.** I realize that this is somewhat early, but if we intend to sufficiently address the topics, have time for a tour, and bring up problems, we have to beat the sunset. The program will have an attractive amount of pesticide credits as well a refreshments supplied by the Moores. All growers on my mailing list will receive a formal invitation along with a map. Feel free to call with any other questions regarding this program at (609) 265-5050. This program should meet the needs of new growers, review basics for experienced growers, furnish pesticide credits, and provide a pleasant forum to discuss areas of mutual interests. I hope to see you all there! □

method to get rapid uptake of nutrients into the cranberry vines, research shows that only about 15% of nutrients can be 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.

Slow-release fertilizer materials have been investigated for use in cranberries by myself and Dr. Jim Paterson in recent years. 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 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. □

Weekly Weather Summary

Keith Arnesen, Agricultural Meteorologist

Temperatures averaged much above normal. Extremes were 93 degrees at Woodstown on the 21st, and 38 degrees at Newton on the 23rd. Weekly rainfall averaged 0.05 inches north, 0.25 inches central, and 0.07 inches south. The heaviest 24 hour total was 0.55 inches at Toms River on the 20th to 21st. Estimated soil moisture, in percent of field capacity, this past week averaged 74 percent north, 72 percent central and 58 percent south. Four inch soil temperatures averaged 61 degrees north, 65 degrees central and 67 degrees south.

Weather Summary for the Week Ending 8 a.m. Monday, 5/25/98

WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	.10	18.40	7.71	87	40	65.	3	444	189	66
CANOE BROOK	.13	17.19	5.39	88	40	65.	3	549	319	74
CHARLOTTEBURG	.00	18.01	6.38	86	39	62.	3	379	230	62
LONG VALLEY	.00	17.07	5.03	84	39	64.	4	380	199	70
NEWTON	.00	14.05	3.71	85	38	62.	2	375	191	69
FREEHOLD	.38	18.96	7.81	89	46	68.	4	530	230	74
LONG BRANCH	.00	22.59	11.08	89	48	67.	5	399	140	48
NEW BRUNSWICK	.00	18.09	7.13	89	44	66.	2	493	164	72
PEMBERTON	.52	16.28	5.66	91	44	68.	4	651	326	78
TOMS RIVER	.55	25.72	14.58	89	43	66.	3	548	266	66
TRENTON	.02	18.61	8.52	89	43	66.	1	489	124	62
CAPE MAY CRT HOUSE	.02	14.64	4.86	89	46	67.	4	486	163	53
DOWNSTOWN	.28	14.16	4.11	90	46	67.	2	596	218	56
GLASSBORO	.11	12.81	2.13	90	47	70.	5	602	240	53
HAMMONTON	.00	14.30	3.91	91	45	68.	3	552	198	43
POMONA	.00	18.89	9.18	91	44	69.	6	523	223	46
SEABROOK	.06	15.06	5.88	92	48	69.	4	621	238	51
ATLANTIC CTY MRINA	.00	18.70	9.52	86	52	69.	7	449	164	46
WOODSTOWN	.00	11.47	1.57	93	44	69	NA	653	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW				Last Week	144 (Ending 5/18/98)	This Week	194 (Ending 5/25/98)			

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