

PLANT & PEST ADVISORY

FRUIT EDITION \$1.50

JULY 11, 2000



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Farm Pond Algae Control

Raymond J. Samulis, Agricultural Agent

We often consider algae growth in farm ponds a summer problem. Observations I made this past winter have led me to believe that due to recent mild winters, algae continued to grow all winter. Heavy algae growth can cause serious oxygen deficiency problems which result in fish kills. Algae can also cause problems by clogging irrigation intake screens, which usually results in automatic pump shut down.

When we look at the root causes of algae problems, both high phosphorous and nitrogen are suspect. You can measure the relative levels of these nutrients through a conductivity meter that measures soluble salts. This can be tested by a simple, inexpensive hand held tool all the way up to the computerized instrument I use, which tests six different water quality measurements at once.

Water temperature is another factor that encourages algae growth in farm ponds. As temperature increases, so does algae growth. It appears to me that this spring's early warm period resulted in early warming of water, which in turn has exacerbated algae problems. The early water warming is also evident when you look at this year's ocean temperatures.

Interestingly, algae can be a double-edged sword when it comes to water oxygen levels. Since algae is photosynthetic (green), during the day it will give off oxygen into the water as part of this process. Conversely, during the night the respiration process will use up oxygen and lower the levels in water. As dead algae decomposes, the decaying process will also lower oxygen levels.

Correcting algae problems can get complicated. There are many different herbicides that are registered for this purpose; however, there are significant restrictions for their use. If your farm pond has no inflow and outflow, you may be able to use certain algaecides such as copper sulfate. If there is inflow or outflow, you will be required to get a Category 5 Pesticide Applicator License. There are other considerations such as number of employees, pond size, etc., which also trigger the need for a Category 5 License. The way to determine which category your farm is in is to see the requirements in extension bulletins FS153 - *Aquatic Weed Control* and FS155 - *Guidelines for Aquatic Pesticide Applications Involving Water Intakes or Water Use Areas*.

Effective algae control should begin early, before invasive new

SEE ALGAE ON PAGE 4

Fruit IPM

Dean Polk, Fruit IPM Agent

Peach

✓ **Oriental Fruit Moth:** Trap counts have decreased, indicating that we are between the second and third adult flights. Even though we are between flights, adult catches are in excess of 6 to 8 males per trap, indicating that continued insecticide covers are needed. Growers should be aware that the repeated precipitation we had during the second flight and egg laying period may have made it difficult to control the second brood. Larval infested fruit was seen recently in Garnet Beauty and Sentry. Levels were at less than 1% of crop injury. Insect population pressure varies among farm location, with several "hot spots" in Gloucester County and Hammonton, and in Hunterdon and Morris Counties (see pest distribution maps).

✓ **European Red Mites (ERM):** Many predators are present in some orchards where mites are also present. If there are insufficient predator levels to control mite populations, Pyramite is now labeled in peaches at 4.4 to 6.6 oz per acre, or 2.2 oz per 100 gal. We have seen 2.2 oz/A applied every other middle, work well this season. By now, many of you were faxed the new label. Please refer to the new label for application procedures.

✓ **Catfacing Insects - Tarnished Plant Bugs (TPB) and Stink Bugs (SB):** Low to moderate levels of catfacing insects continue to be found in the ground cover. Higher populations continue to exist in weedy areas. Up to 13 TPB adults and nymphs are present in weedy covers. Low numbers of stink bugs also continue to show up.

✓ **Peach Scab:** Scab is showing up in post harvest samples being taken on early varieties. Levels are spotty, depending where in the orchard the sample was taken, but have been in excess of 12 to 15% in some places. There is nothing that can be done about peach scab at the present time. However, blocks that have scab at any level have the potential for serious infections next season.

Apple

✓ **Tufted Apple Budmoth (TABM):** TABM is between generations as indicated by low trap counts. Slightly higher counts are present throughout much of Gloucester County (see pest distribution maps). Mid-size to larger first brood larvae can be found in both

Insect Trap Counts South Jersey Tree Fruit

Week Ending	AM	CM	LPTB	OFM	PTB
6/30	0.00	2.14	52.52	26.79	4.28
7/7	0.08	0.76	39.06	16.76	4.85

North Jersey Tree Fruit

Week Ending	AM	CM	LPTB	OFM	PTB
6/30	0.02	1.98	1.83	12.18	1.41
7/7	0.11	1.16	0.93	10.51	0.67

Blueberry

Week Ending	Atlantic County				
	RBLR	OBLR	CBFW	SNLH	BBM
6/30	84.15	3.00	0.00	0.68	0.05
7/7	36.46	0.38	0.00	0.74	0.18

apples and peaches. No sprays should be targeted for TABM at this time. Treatments for the beginning of the second flight should be planned for the end of the month in southern counties and the beginning of August in northern counties. There will be more on this timing in later newsletters.

✓ **Dogwood Borer:** Insecticide applications for dogwood borer should be applied to the tree trunks and graft union areas as soon as possible if not already done. Lorsban 50W @ 3lb/100 gal applied with a handgun dilute, or 6 oz per tree applied with a backpack sprayer is suggested for control.

✓ **Spotted Tentiform Leafminer (STLM):** Trap counts indicate that the STLM flight has peaked. Second brood sap feeding larvae are starting to be seen, but at low levels. Treatment should be initiated only when there is an average of at least .5 to 1 total mines per leaf. The majority of active mines should have larvae in the sap feeding stage. These are only visible from the bottom sides of the leaves. Insecticides like Vydate, Lannate and Provado should be targeted against newly hatching and young larvae. Insecticides do not work well against older tissue feeding larvae.

Blueberry

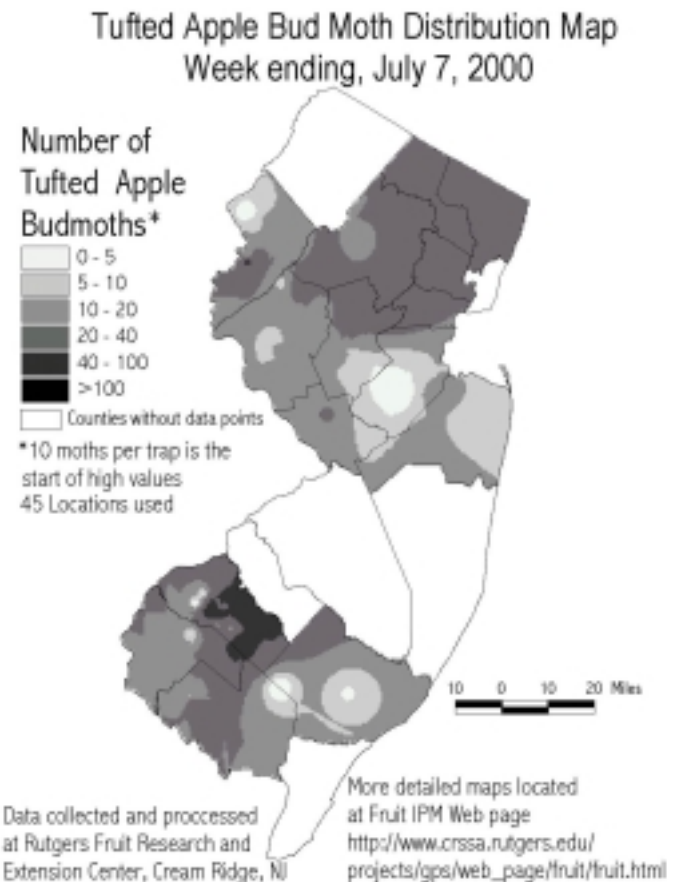
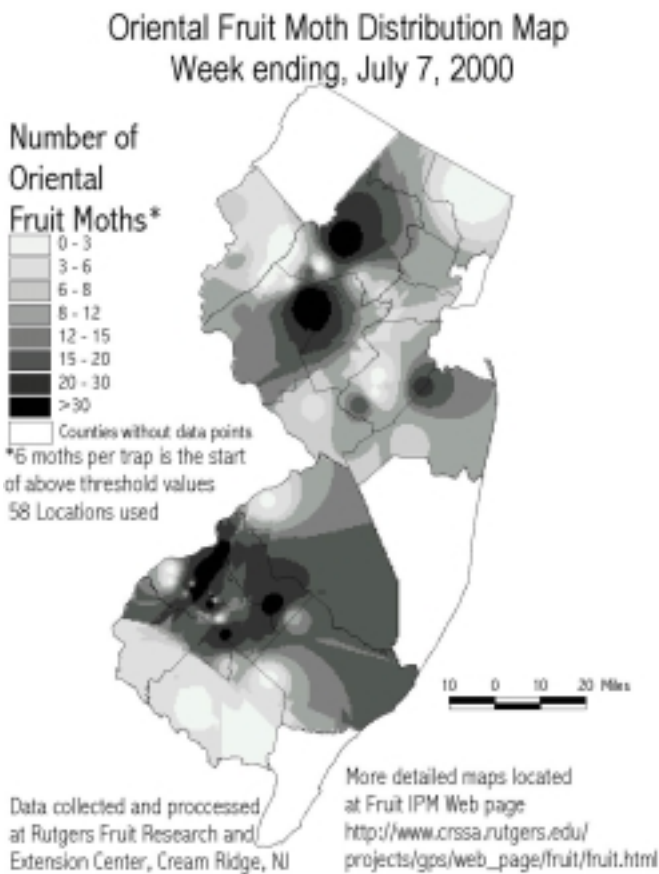
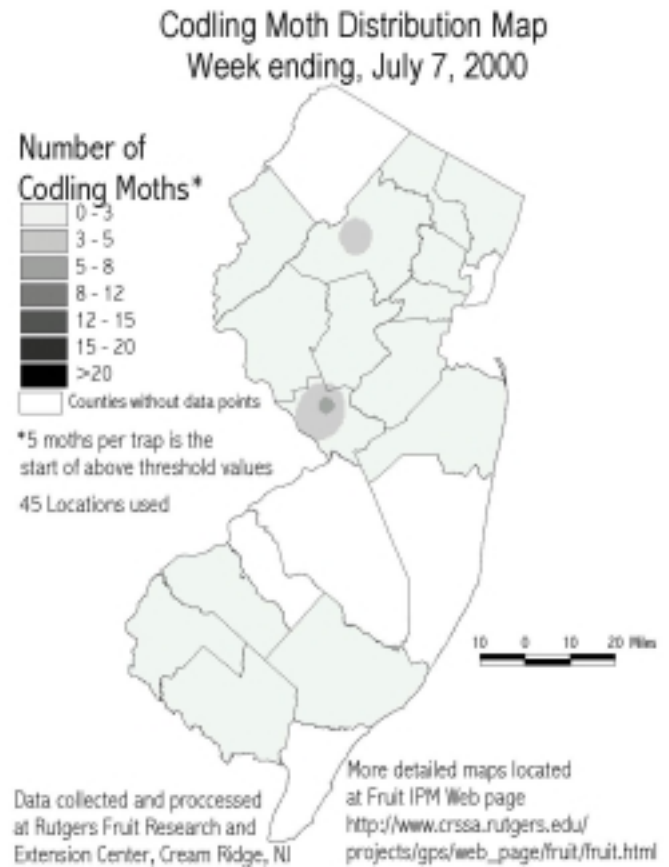
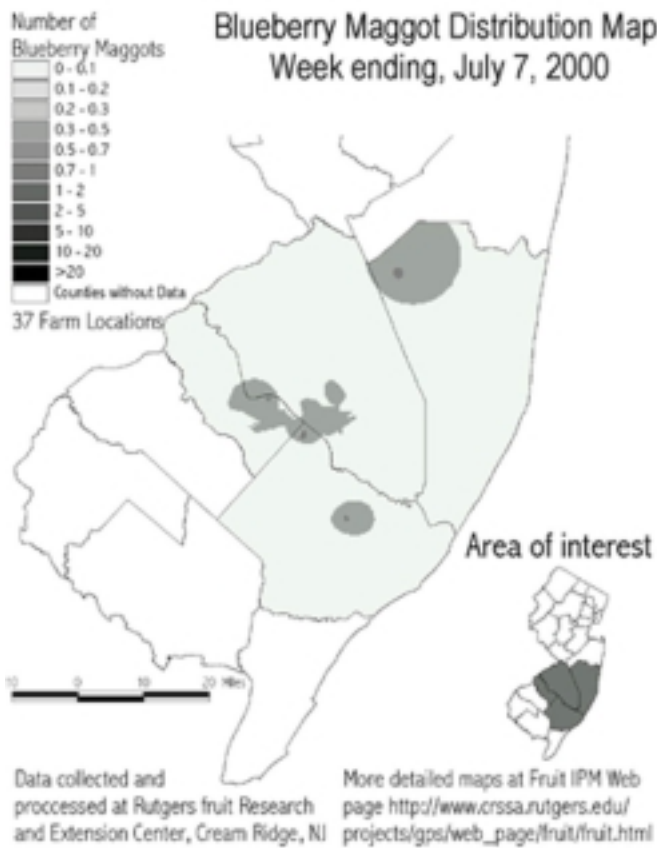
✓ **Blueberry Maggot (BBM):** BBM adults remain at similar levels as seen last week. Populations vary with about half of all Burlington County farms and over half of all Atlantic County farms having "0" trap catches. However, the highest trap catches were present in Atlantic County (commercial farm), and in Ocean County on one unsprayed farm. The general picture of BBM fly distribution (from 157 traps) can be seen in the pest distribution map.

✓ **Leafrollers (redbanded and obliquebanded - RBLR and OBLR), Cranberry Fruitworm and other fruit infesting larvae:** Samples continue to show 4 to 5 % of samples with leafrollers and 14% of samples with fruitworm and cherry fruitworm damage, although by now most larvae have exited the fruit.

✓ **Aphids:** Aphid populations have decreased over the last two weeks, and are present in only 36% of samples at low levels of 1 to 2% of young shoots infested. This is not the prime target it was 3 weeks ago when we were finding aphids in over half of the IPM samples.

✓ **Disease: Mummy Berry and Alternaria** are now easy to see. We have been seeing what seems to be abnormally high levels of soft fruit for several weeks. Much of this is now Alternaria infected fruit. Mostly larger, ripe fruit has the calyx end covered by a greenish black mass of mycelium. Frequent earlier rains have probably contributed to the disease incidence.

	STLM	TABM-A	TABM-P	Burlington County						
				OB	RBLR	OBLR	CBFW	SNLH	BBM	OB
	1433.39	17.82	25.61	271.83	64.00	2.00	0.40	3.03	0.18	88.00
	1560.69	3.53	8.25	266.92	8.88	0.11	0.00	1.85	0.21	109.20



Pyramite® Registered for Stone Fruit and Grapes

Peter W. Shearer, Ph.D., Tree Fruit
Entomology

The EPA has recently registered Pyramite® for use on stone fruit and grapes. This miticide is a very effective knockdown product for **European red mite** (ERM). It has a 7-day PHI for grapes, peaches, nectarines, plums, prunes, pears, nuts. It also has a 300-day PHI (yes this is correct) for cherries and apricots making Pyramite® a post-harvest material for these 2 crops.

The label rate for ERM is 4.4 – 6.6 oz/acre. I have had success in my trials using Pyramite® against ERM on peaches with a rate of 2.2 oz/acre as a complete spray in 100 gallons of water/acre. **Twospotted spider mites** require higher rates, 8.8-13.2 oz/acre. The maximum amount that can be applied per season is 26.4 oz/acre. With this and other new products, make sure you read the label. □

ALGAE FROM PAGE 1

algae mats have developed. Most herbicide treatments require you to calculate the total volume of water in the pond. This measurement can be used to determine how many pounds of copper sulfate or other aquatic herbicide are needed for control. The rules have changed recently for copper sulfate use. The highest recommended rate is now ½ ppm instead of the previous 1 ppm. In ponds with serious algae problems, it may be better to treat ½ of the pond at a time to decrease problems with low oxygen as the dead algae rapidly decays.

Algae problems can be effectively dealt with if care is taken in preparation. Be sure to carefully calculate the total pond volume. Understand the restrictions on each site and algicide used. Category 5 permits may be needed in some instances. Let's all hope for adequate rainfall this season, which is still one of the most effective algae deterrents. □

Apple Crop Report from IDFTA

Jon Clements, Extension Fruit Specialist, UMASS and Win
Cowgill, Agricultural Agent

Over one hundred and fifty fruit growers from throughout North America convened in Burlington, Vermont for the annual International Dwarf Fruit Tree Association Summer Tour. Hosted by growers and extension personnel in Quebec, New York, and Vermont, the organization spent three days touring orchards in the Lake Champlain Valley. The Champlain Valley region produces approximately five to six million bushels of apples annually. The predominant cultivar is McIntosh followed by Cortland and Empire. The tour proved again to be an opportunity for like-minded growers to get together to see first-hand the latest dwarf fruit tree production techniques. Discussion of marketing issues and new cultivars were also hot topics as we toured New York apple orchards.

Of interest to all is the status of this season's crop potential across North America. The following is a brief summary of the crop estimates of the major apple-crop producing regions in North America that we gleaned from our fellow tour participants.

Washington had a 'small' crop in 1999, so 2000 is looking to be *big*. In fact, estimates range as high as 125 million bushels! Unfortunately, the 1999 crop is still not completely sold, and a new shipment of Chinese juice concentrate has hit America's shores. Expect a glut of Delicious apples and plentiful juice concentrate to keep prices low for West Coast fruit during the 2000-01 marketing season.

Michigan is coming off a record crop of thirty million bushels in 1999. The 2000 crop is looking moderate, with the exception of southwest Michigan where fireblight has run rampant this spring. Some are saying it is the worst fireblight ever to hit the region, and many acres of dwarf trees may be entirely lost to blight. Ohio too is reporting a moderate crop, with fireblight again a problem in some orchards.

The **Mid-Atlantic** region includes North Carolina, the Virginia's, Pennsylvania, and New Jersey. Altogether the region suffered a serious drought in 1999, and this has apparently had some impact on the 2000 crop potential. Estimates suggest the crop will be decent, but perhaps slightly below average. No major calamities have stricken the region, although it is still very dry as you move south, and North Carolina in particular needs rain soon. Spotty hail in New Jersey and Pennsylvania may affect individual blocks.

The **New England** region includes Massachusetts, Maine, New Hampshire, Vermont, Connecticut, and Rhode Island. The apple-crop is best described as 'moderate.' Again, a heavy crop and drought in 1999 has contributed to less-than-ideal fruit set in 2000. Weather during bloom was highly variable, depending on location. For example, in Massachusetts many orchards went from king bloom to petal fall within just a few days. Prolonged cool, cloudy weather followed bloom in much of New England. Macs are reported to be particularly light in many orchards, while later blooming varieties fared better. Hail has already damaged the crop in a few orchards in Massachusetts and Connecticut.

New York picked a record crop of nearly 30 million bushels in 1999, so the 2000 crop is anticipated to be on the lighter side. Hail

SEE APPLE CROP ON PAGE 7

Honeycrisp-the Good, the Bad, & the Ugly

Jon Clements, Extension Fruit Specialist, UMASS and Win Cowgill, Agricultural Agent

At the recent IDFTA summer tour in New York, Vermont and Quebec; a group of Honeycrisp 'experts' was convened in a grower's orchard next to a large planting of young Honeycrisp. There has been a lot of hype about this new apple, so an attempt was made to be blunt about it's potential to make inroads into the market as well as be a profitable gem for growers. Included in the discussion were: David Beford, U. of Minnesota Honeycrisp breeder; Chris Watkins, Cornell University post-harvest physiologist; Susan Brown, Cornell University fruit breeder; Jim Schupp, Cornell, Pomologist; Paul Wooley of E.C. Marketing; and several growers from as far away as Minnesota, Wisconsin and Michigan who had experience growing and marketing Honeycrisp.

After much discussion, it was unanimous that Honeycrisp has the potential to do 'Good' for growers in traditional McIntosh country. If you cannot grow high quality, well-colored Macs you probably will not have much luck with this apple. All felt that Honeycrisp was the one new apple that, if done right, had the potential to make growers big money. Wholesale prices of \$500 were common in 1999.

But, among others, Sue Brown cautioned it has some characteristics that are not so desirable — she says the 'Bad' and the 'Ugly.' In a nutshell, here is how 'Honeycrisp' stacks up in her eyes:

the Good — clearly, Honeycrisp has excellent texture and flavor when picked at the right maturity. Both consumers and growers acclaim it's 'explosively crisp' eating quality, and mention it in the same breath as the highly desirable and good-eating Gala and Fuji. Plus it keeps remarkably well in 'plain-Jane' air cold storage.

the Bad — now here it gets a little strange, but unfortunately there has been a lot of variability observed in Honeycrisp's fruit appearance, and — in some cases — eating quality. For example, Honeycrisp are supposed to be a blush-red apple, although they have been reported to be striped too. Sometimes Honeycrisp fruit is washed-out in appearance, and usually these do not eat as well. This is more likely to happen when the tree is under stress with too heavy a crop load. Speaking of stress, it was advised to make sure Honeycrisp grow rapidly during the early establishment years. Otherwise, once they slow down, they may not be inclined to grow vigorously again. (Honeycrisp is inherently a weak grower — does irrigation sound like a good idea?)

and the Ugly — here things get even worse, as Honeycrisp storage issues remain a serious bugaboo. In particular, they are susceptible to soft and ribbon scald, and bitter pit. (Although at least one grower claims calcium sprays easily rectify the problem.) Also, the best storage environment and temperature regimen remains to be worked out. Fortunately, there is some active research addressing these serious storage problems.

All of the Honeycrisp experts agreed the apple deserves serious grower trial, but before getting too gung-ho and planting large acreage, growers may want to wait until some of the 'bad' and 'ugly' characteristics of Honeycrisp are better understood and can be more easily managed and that this apple is adapted to your farm and region. □

Phytophthora Root Rot of Raspberry, Part I

Michael A. Ellis, Ohio State University, Columbus, Ohio

Source: Ohio State University Extension Fact Sheet HYG-3207-98.

Phytophthora root rot is caused by several related species of soilborne fungi belonging to the genus *Phytophthora*. To date, *P. megasperma*, *P. cryptogea*, *P. citriocola*, *P. cactorum*, and at least two additional unidentified *Phytophthora* species have been implicated in this disease. The disease occurs on red, black, and purple raspberries, although in the Northeastern US, it has been documented most commonly on red raspberries. The disease has been reported to occur on blackberries in Kentucky. *Phytophthora* root rot can be an extremely destructive disease on susceptible cultivars where conditions favor its development. Infected plants become weak and stunted and are particularly susceptible to winter injury; seriously infected plants commonly collapse and die.

Symptoms — The disease is most commonly associated with heavy soils or portions of the planting that are the slowest to drain (lower ends of rows, dips in the field, etc.) In fact, most declining plants that are considered to be suffering from "wet feet" may be suffering from *Phytophthora* root rot. Symptoms include a general lack of vigor and a sparse plant stand. Apparently healthy canes may suddenly decline and collapse during the late spring or summer. In such cases, leaves may initially take on a yellow, red or orange color or may begin scorching along the edges. As the disease progresses, affected canes wilt and die. Infected plants frequently occur in patches, which may spread along the row if conditions remain favorable for disease development. Because wilting and collapsing plants may be caused by other factors (winter injury, cane borers, etc.), it is necessary to examine the root system of infected plants to diagnose the disease. Suspect plants should be

SEE PHYTOPHTHORA ON PAGE 7

The 2000 NJ Peach Festival

Jerome L. Frecon, Agricultural Agent

The New Jersey Peach Festival is an educational and promotional exposition held annually for the New Jersey peach industry. The "festival" actually kicks off the new shipping season for New Jersey peaches. This year it will again be held at the Gloucester County 4-H Fairgrounds on Route 77, 2 miles south of Mullica Hill in Gloucester County. The exposition is run in conjunction with the Gloucester County 4-H Fair and begins at 12 p.m. on Thursday, July 27 and runs through 6 p.m. on Sunday, July 30, 2000.

The "festival" is centered in two locations on the fairgrounds. The small peach tent is located near the parking lot as you enter. Peaches, processed peach products and many other peach items are sold to raise money for peach promotion. Many growers and shippers donate beautiful peaches to help raise these funds. Consumers are given information on how to use peaches and where to buy retail. *If you would like to donate peaches to the festival please call me at 856-307-6450 and we will arrange for pickup.*

The second major area of the peach festival is in the large peach tent on the main promenade near the craft pavilion. Sold in this tent are peach ice cream and processed peach products for consumption on the grounds. The main exhibit in the tent is a display of yellow and white fleshed peaches and nectarines both from growers and shippers. This display is the result of the Commercial Peach Pak Competition. Growers enter 1/2 bushel boxes of peaches in three categories. The first category is the commercial one. My designated representative or I go to requested packinghouses and pick out peaches in one of three size classes. They are: 2 1/4 inches in diameter; 2 1/2 inches in diameter; and 2 3/4 inches in diameter. The peaches in this category represent the same peaches shipped to supermarkets across the US. The best box of peaches in this category is given the Governors Cup by Secretary Arthur Brown for their quality. Some growers prefer to hand select peaches for the competition; these are broken down for the same three sizes and put in the select category. A specialty category was also set up to handle entries of white peaches and nectarines. A specialty class was also made for the largest peach by weight.

Growers can have one entry in each class. The top three in each class will win ribbons and plaques, which will be presented on the main stage

on Friday, July 28, 2000 at 7 p.m. The best in each category will win a dinner for two at a quality restaurant in the area. *The best part of the competition comes after the judging on Thursday evening when all the beautiful boxes of peaches are on display for the viewing public. This is a tremendous opportunity for growers. Any grower or shipper wishing to display peaches or exhibit in the competition should contact me at 856-307-6450.*

The main peach tent will also feature a display of peach varieties being researched by Rutgers Cooperative Extension (RCE). Because the season is early in southern New Jersey we expect to have many samples of new varieties ripening before and after Redhaven.

The New Jersey Peach Promotion Council will have an exhibit of how to choose and use peaches and nectarines. RCE will have an exhibit of their educational programs. The Rutgers Agricultural Research and Extension Center in Centerton will display the results of their peach research programs. The New Jersey Farm Bureau will have an exhibit on economic viability and costs of food production. The RCE Integrated Pest Management program will have an educational display on major peach and fruit problems and how they are controlled. There will be other educational games and exhibits on display.

On Friday evening at the main stage the New Jersey Peach Queen will be selected and crowned along with the Little Miss Peach Queens. These queens represent the New Jersey peach industry at educational and promotional events throughout the year. The final peach event will be the Peach Blossom parade on Sunday morning, July 30, 2000.

Information on the festival can be obtained by calling the coordinators, Marsha Gaventa (856-467-8028) or Chris Smith (856-881-1411). □

PPV National Survey Information for Week Ending, June 30, 2000 for NJ

Robert Balaam, Director, Division of Plant Industry, New Jersey Department of Agriculture

Field Sampling:

Sampling conducted by: NJ Department of Agriculture

0 Acres of propagative orchards surveyed.	0 Samples taken
180 Acres of commercial orchards surveyed.	1,173 Samples taken
0 Mother trees sampled.	0 Samples taken
0 Nursery properties surveyed.	0 Samples taken
0 Other (list): Coop. Ext. Variety Eval. Blocks	0 Samples taken

Laboratory Analysis:

Analysis conducted by: NJ Department of Agriculture

1,058 Samples analyzed	1,058 Negative Samples	0
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This report covers activities from June 23, 2000 through June 29, 2000.

Submitted by Jerome L. Frecon, Agricultural Agent □

Twilight Research Fruit Meeting

Wednesday, July 12, 2000, 5:30 P.M.

Rutgers Agricultural Research & Extension
Center, 121 Northville Road (Centerton)
Bridgeton, NJ

The program below will be followed while the attendees travel throughout the farm observing research trials and plots. A light supper, compliments of the faculty and staff, will be served after the tour. Refreshments will also be provided. The agenda is:

5:30 p.m. Welcome and Remarks by Dr. Bruce Carlton, Dean of Cook College and Executive Director of the New Jersey Agricultural Experiment Station

5:45 p.m. Research on Disease of Peaches and Nectarines by Dr. Norman Lalancette, Specialist in Tree Fruit Pathology and Laura Furman (graduate student), Rutgers Cooperative Extension

6:10 p.m. Evaluating Fruit Storage Potential and Comparing Peach Tree Training Methods by Dr. Robert Belding, Specialist in Pomology, Rutgers Cooperative Extension

6:30 p.m. The IR-4 Fruit Program and Current Projects by Larry Rossell and Erin Hitchner, IR-4 Filed Researchers, Rutgers Cooperative Extension

6:40 p.m. Tree Fruit Entomology Issues and Research Update by Dr. Peter Shearer, Specialist in Tree Fruit Entomology, Rutgers Cooperative Extension

7:00 p.m. Perennial Weed Control by Dr. Brad Majek, Specialist in Weed Science, Rutgers Cooperative Extension

7:15 p.m. Strawberry Variety and Cultural Trial by Dr. Steve Garrison, Specialist in Vegetable Crops, Rutgers Cooperative Extension

7:30 p.m. Advanced Early Season Peach Selection for the New Jersey Stone Fruit Breeding Program by Dr. Joe Goffreda, Director, Rutgers Fruit Research and Extension Center, Rutgers Cooperative Extension

7:45 p.m. Display and Discussion of N.J.A.E.S and Commercial Peach and Nectarine Cultivars by Jerome L. Frecon, Agricultural Agent, Rutgers Cooperative Extension

8:00 p.m. Adjourn for supper and more refreshments.

For further information, contact RCE of Gloucester County at or 856-307-6450 or the Rutgers Agricultural Research and Education Center at 856-451-3100.

Because this tour will be conducted in the field with wagons and tractors- it is not totally accessible to the physically impaired. Special arrangements can be made by contacting RCE of Gloucester County at 856-307-6450.

An attempt will be made to obtain N. J. Certified Pesticide Applicator Units for this program. □

PHYTOPHTHORA FROM PAGE 5

dug up and the epidermis (outer surface) scraped off the main roots and crown. On healthy plants, the tissue just beneath the epidermis will be white; on plants with Phytophthora root rot, this tissue will be a characteristic brick red (eventually turning dark brown as the tissue decays).

Sometimes a distinct line can be seen between infected and healthy tissue, especially on the below-ground portion of the crown. In many fields, plants that are dying and declining because of Phytophthora root rot had previously been diagnosed as suffering from winter injury or "wet feet". One major difference in distinguishing between root rot and winter injury is that plants infected with phytophthora root rot will continue to decline as time goes on and will not produce healthy primocanes, whereas winter-injured plants will usually send up healthy primocanes the year following the damaging winter.

Disease Development – The fungi persist primarily as mycelium in infected roots or as dormant resting spores in the soil. When the soil is moist, reproductive structures (sporangia) are formed upon the infected tissue or by germinating resting spores (oospores) in the soil. Within each of these structures, a number of individual spores called zoospores are formed. These zoospores are expelled into the soil during periods when the soil is saturated with water. The zoospores have "tails" (flagella) that allow them to swim through the water-filled soil pores to reach new plant parts. Upon reaching a plant root or crown, the zoospores become attached and begin the infective process. As water remains standing and oxygen is depleted from the root zone, the plant is progressively less capable of resisting the fungus's attempts at invasion, and infection becomes more likely and severe.

Each new infection site is a potential source of additional resting spores and zoospores, allowing for epidemic disease development in sites that are subjected to repeated periods of standing water. Although the optimum season for infection is not known for certain, it is likely that spring and fall are particularly favorable periods. However, it is assumed that infection can occur throughout the growing season if soil moisture conditions are favorable.

Part II will continue in next week's issue.

APPLE CROP FROM PAGE 4

has already ruined several thousand acres in the lower Hudson Valley and Columbia County, resulting in a reduced crop potential of at least 50% in that region. Western New York has reported no problems, so the crop is looking average there.

In summary, the East is looking at about two-thirds of an average crop. But, the big crop potential in the West, plus continued pressure from Chinese juice concentrate will likely mean a continuation of less than optimal returns to growers for the 2000-01 apple crop.

For more information on IDFTA and the 2000 summer tour visit the IDFTA website at: <http://www.IDFTA.org>. □

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