

PLANT & PEST ADVISORY

FRUIT EDITION \$1.50

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Managing Apple and Pear Harvest with ReTain®

Win Cowgill, Agricultural Agent and Jeremy Compton, North Jersey Tree Fruit Technician

As the 2000 apple harvest approaches, New Jersey growers focus management strategies on harvesting a crop of optimum fruit quality. Consumer demand, market, storage requirements and labor availability all influence harvest decisions. One tool that allows for increased flexibility in management decisions is the ReTain® Plant Growth Regulator from Valent BioSciences. It has been commercially available to US apple growers since 1997.

ReTain® is a harvest management tool that slows the maturation process. It is an excellent stop drop material that can delay fruit maturity from 7-10 days and give growers a longer picking window on many cultivars. ReTain® works by retarding the development of ethylene, the chemical that causes ripening. ReTain® will increase fruit firmness, decrease watercore and allow for longer cold storage. ReTain® may also indirectly enhance fruit size and color by allowing the fruit to remain on the tree longer.

The active ingredient is a naturally occurring product called aminoethoxyvinylglycine (AVG), which is produced by fermentation. The fermentation process required to produce AVG is very difficult and expensive. As a result, ReTain® retails for \$270 - \$290 per acre. Because of this, ReTain® should only be used in high value blocks with large crops of unblemished fruit.

Fruit treated with ReTain® can be picked during the normal harvest period for enhanced retention of firmness in regular cold storage, or harvest may be delayed, allowing the fruit to continue to grow and develop red color for an extended time. Our experience in New Jersey is that ReTain® reduces preharvest drop on McIntosh from 10-30%.

Research also indicates that stem-end split (SES) and internal ring crack (IRC) may be reduced with the use of ReTain® on susceptible varieties such as Gala and Fuji. Although these disorders will not be eliminated with its use, ReTain® reduces the stress fluctuations that are thought to cause these disorders.

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Fruit IPM

Dean Polk, Fruit IPM Agent

Peach

✓ **Oriental Fruit Moth:** Trap counts are moving up, indicating the start of the third adult flight. Adults will continue to mate and lay eggs on leaf petioles and fruit. Larvae bore into the leaf petiole and shoot tip, resulting in tip damage or 'flagging'. Fresh and recent larval flagging is present in a number of blocks. Insecticides should be maintained on any block where trap counts exceed 6 to 8 males per trap (which is most farms at this time). Where mating disruption was used and the standard M-100 dispensers were applied in May, dispenser pheromone should be almost gone at this point. Insecticides will be needed from this point on in those blocks, unless the pheromone is to be reapplied.

✓ **Catfacing Insects - Tarnished Plant Bugs (TPB) and Stink Bugs (SB):** Populations remain spotty, but are high in some weedy areas. Over 65 TPB nymphs per 50 sweeps were found this week on one farm in Gloucester County.

✓ **Japanese Beetles and Green June Beetles:** Adults of both species are still active in some orchards. While most OP's control these insects, they may not be practical on ripening varieties. Guthion has a 21 day PHI, and Imidan has a 14 day PHI. Sevin has a 3 day PHI (Lannate has 4), and has given quick knock down in recent days. Growers have had good success with Sevin 50W at 2lb/acre.

✓ **Brown Rot:** The fact that considerable blossom blight was present from spring rains is now creating problems in some orchards. The increased inoculum level, combined with wet weather has created ideal brown rot conditions. These blocks have high rates of brown rot on the fruit, especially if fruit is in final swell. Under these conditions, full cover, every row sprays should be used. Do not use sulfur or sulfur combinations under these conditions. Captan combinations (with SI's) used 2 to 3 weeks before harvest and SI's alone near harvest are suggested. Abound is also an excellent material. Growers should consider alternating this product in place of repeated SI sprays. When using Abound, make sure to use a different sprayer than the one used on apples, and do not allow spray drift to contact apples.

Apple

✓ **Tufted Apple Budmoth (TABM):** While TABM captures have increased slightly, treatments are not suggested until 7/31 to 8/1 in southern counties, and about 8/6-7 in central counties. OP's alone are not suggested where this pest has been a problem. Combinations with Lannate are suggested. Confirm used at a slightly later timing also works well (more on those dates later).

✓ **Codling Moth (CM):** Trap counts remain at similar levels as during the previous week. Populations are below treatment level on most farms. However, where trap counts exceed 5 males per trap, treatment is suggested. The best timing for CM sprays in northern counties is the early part of this week. Treatments should be reapplied 10 days to 2 weeks later. However, given the recent rains, insecticide (and fungicide) applications do not last.

✓ **Summer Diseases (Sooty Blotch and Fly Speck):** Growers with fresh market apples should be targeting summer diseases. This means that Benlate @.5 to .75lb/acre plus another fungicide (such as Captan) should be included in the cover sprays. Topsin M may be used in place of Benlate, but has not given equal control in late season tests.

Blueberry

✓ **Blueberry Maggot (BBM):** BBM adults were found at 44% of surveyed farms, with one farm averaging just over 1 fly per trap. Overall levels are similar to those levels seen last week, but a slight increase was seen in Hammonton. One of our commercial samples that was incubated for disease analysis, had a number of maggot larvae that had exited the fruit after 7 days of incubation. A boiling at this site also showed maggot larvae in the berries. Because of the frequent rains, insecticide applications have been short lived. Growers should be aware of this and reapply insecticides if maggot fly adults are trapped on their farm, and heavy rains have followed insecticide applications. The general picture of BBM fly distribution (from 157 traps) can be seen in the pest distribution map.

✓ **Aphids:** Aphid populations have shot up in some locations, with aphids being found in 60% of our samples. A number of fields show aphid numbers in excess of 10% of young shoots infested with small colonies. Cooler weather and frequent rains have contributed to the presence of plenty of young shoot growth.

✓ **Leafminer:** Leafminer levels have increased, leading us to initiate an additional sampling procedure. A sample consists of 200 leaves per sample site. During this past week 40 such samples were examined. The average mine level was 6.3 mines per 100 leaves. The highest levels were in Atlantic County with two sites having 37 and 15 mines per 100 leaves. Some larvae have actually ended up in the packout.

✓ **Disease:** Both Alternaria and Anthracnose are easily found in field samples. Alternaria is present in 2% of samples, while Anthracnose is present in 7% of samples. These are just field numbers. Higher levels of disease are seen after the fruit is held at room temperature for 1 to 2 weeks.

SEE INSECT TRAP COUNTS ON PAGE 3 AND
PEST DISTRIBUTION MAPS ON PAGES 4 AND 5

ReTain® must be applied four weeks prior to anticipated harvest, therefore it is essential growers carefully project ripening dates of each block which they plan to use ReTain® on this season. For McIntosh and Gala the 28 day window is rapidly approaching. Apples at the Rutgers Snyder Research and Extension Farm, Hunterdon County, are currently running 3 to 5 days ahead of normal maturity. Applications of ReTain® on Gala cultivars are scheduled for early next week.

Important considerations to follow with ReTain applications in New Jersey

- Use the full rate of ReTain® (1 pouch or 333 grams/Acre of formulated product) with an organosilicone surfactant at 0.05% to 0.10 % (v/v).
- Only use one of the following organosilicone surfactants as a surfactant: Silwet L77 at 6.5-13 fluid ounces per 100 gallons, or Sylguard 309 at 6.5-13 fluid ounces per 100 gallons. When high temperatures prevail, the lower rate of surfactant is recommended.
- Apply 4 weeks before anticipated harvest (28 day PHI), it is better to apply slightly earlier rather than later.
- ReTain® should be applied with a sufficient amount of water to ensure thorough wetting of the fruit and foliage while avoiding spray run-off. Adjust water volume based on tree size and spacing. No alternate row spraying.
- For optimum results apply during periods of slow drying weather conditions. No rainfall or irrigation should occur within six hours of ReTain® application.
- Do not apply ReTain® to trees under stress. They may not respond to the benefits of ReTain®.
- Do not tank mix ReTain® with other agricultural products.
- NAA may be used according to label directions after the use of Retain if very long drop control is desired, or fruit begin to loosen. Be aware that NAA may accelerate fruit maturation.
- The interaction of ethephon products with ReTain® is not well understood and is not encouraged at this time.

Note: ReTain® has been given an Experimental Use Permit (EUP) for stone fruits in New Jersey for the 2000 growing season. ReTain® is currently being evaluated at the Rutgers Snyder Research and Extension Farm for its use benefits on peaches and with selected growers under the EUP. □

Plum Pox Virus Weed Survey Results

Mena Hautau, Agricultural Agent,
Penn State Cooperative Extension

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There are many unanswered questions regarding the natural host range of PPV and whether aphids will naturally infect plants other than stone fruit. Since the beginning of summer we have been checking weed samples collected from sites adjacent to PPV infected orchards to determine if PPV has become naturally established in weeds. This information is essential to the success of the PPV eradication program. Knowledge of natural weed hosts can aid in monitoring for the reappearance of PPV. Alternatively, if eradication is not successful then it will be imperative to know which weeds can serve as natural virus reservoirs to develop an effective PPV management program.

Weed survey results from the Bigler-ville lab for the week ending June 30, 2000

	Processed	# Positive
<u>Last week:</u>		
Weed samples (10 new species)	216	0
<u>Running totals:</u>		
Weed samples (180 different species) (John Halbrendt)	3761	0

Submitted by Jerome L. Frecon, Agricultural Agent □

Insect Trap Counts

South Jersey Tree Fruit

Week Ending	AM	CM	LPTB	OFM	PTB	STLM	TABM-A	TABM-P
7/7	0.08	0.76	39.06	16.76	4.85	1560.69	3.53	8.25
7/14	0.25	2.08	28.24	15.04	4.31	990.65	4.44	10.24
7/21	0.11	1.85	17.43	24.23	3.73	1163.22	6.50	20.60

North Jersey Tree Fruit

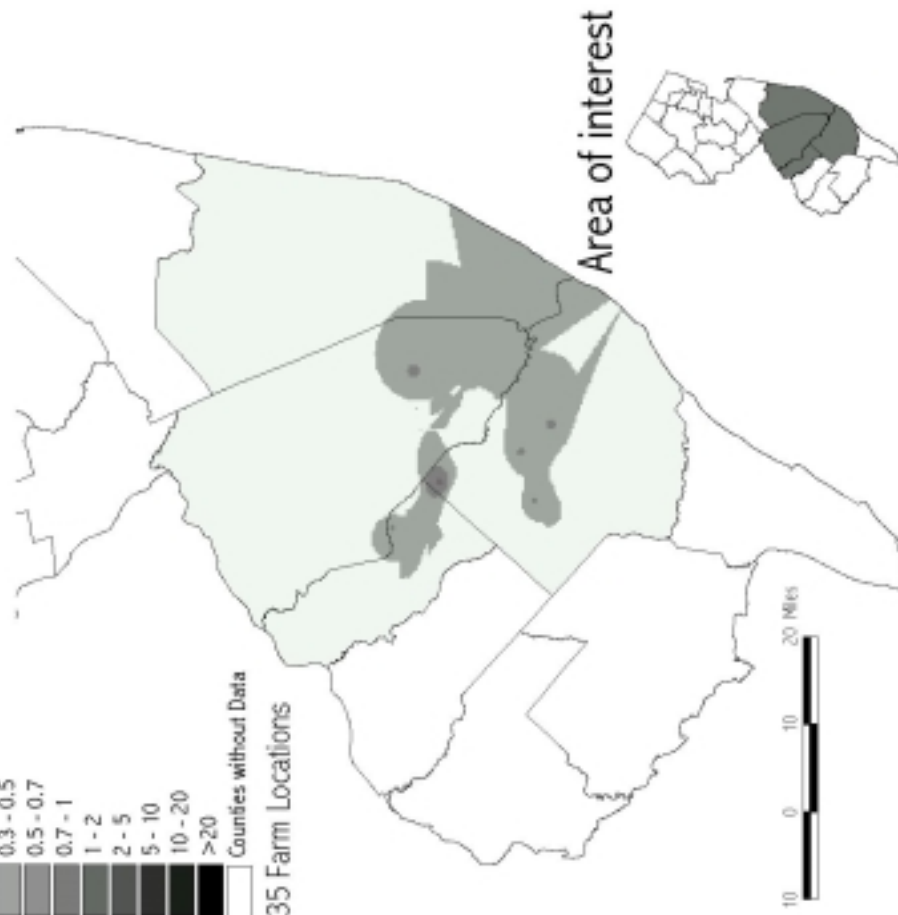
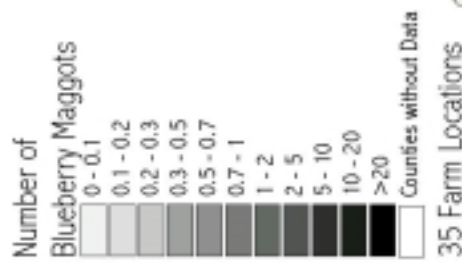
Week Ending	AM	CM	LPTB	OFM	PTB	STLM	TABM-A	TABM-P
7/7	0.11	1.16	0.93	10.51	0.67	679.35	2.22	3.24
7/14	0.20	0.54	0.44	8.91	0.74	598.45	0.96	1.24
7/21	0.09	0.96	0.38	4.44	0.92	377.54	0.20	0.17

Blueberry - Atlantic County

Week Ending	RBLR	OBLR	CBFW	SNLH	BBM	OB	RBLR	OBLR	CBFW	SNLH	BBM	OB
7/7	36.46	0.38	0.00	0.74	0.18	266.92	8.88	0.11	0.00	1.85	0.21	109.20
7/14	9.53	0.62	0.0	.053	0.18	176	2.13	0.11	0.10	1.13	0.39	28.9
7/21	9.75	0.17	0.00	0.35	0.27	46.08	0.25	0.00	0.00	0.28	0.26	12.7

Burlington County

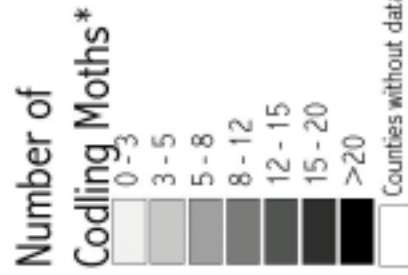
Blueberry Maggot Distribution Map Week ending, July 21, 2000



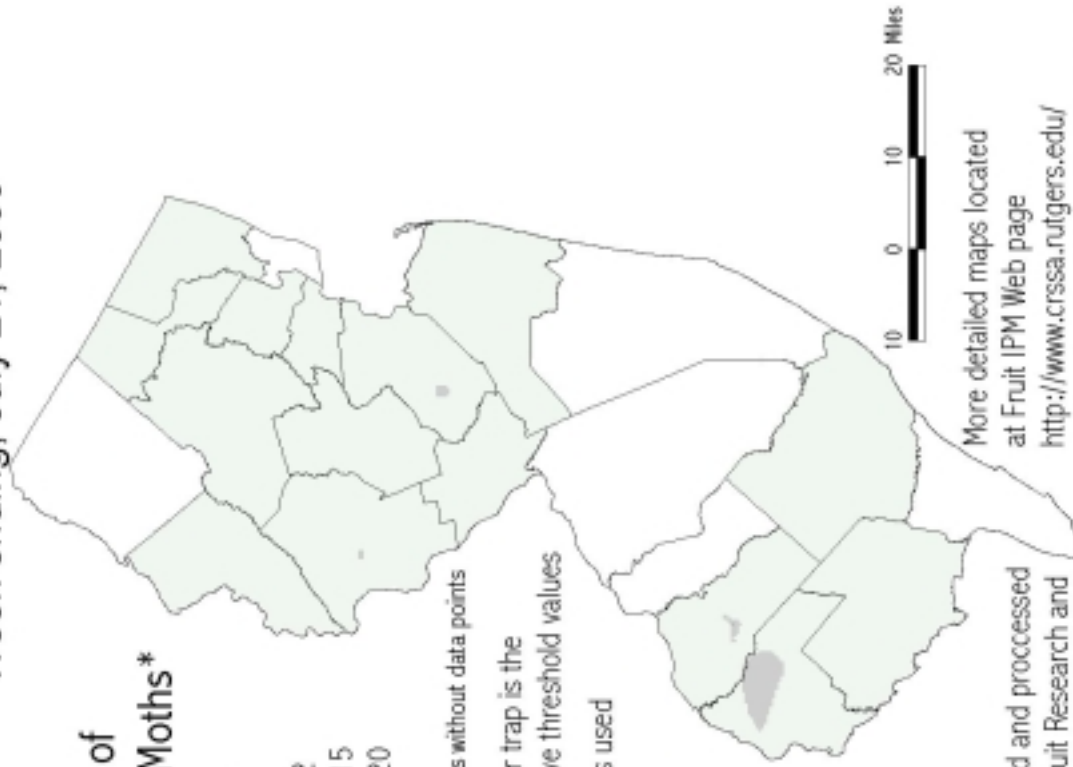
Data collected and processed at Rutgers fruit Research and Extension Center, Cream Ridge, NJ

More detailed maps at Fruit IPM Web page http://www.crssa.rutgers.edu/projects/gps/web_page/fruit/fruit.html

Codling Moth Distribution Map Week ending, July 21, 2000



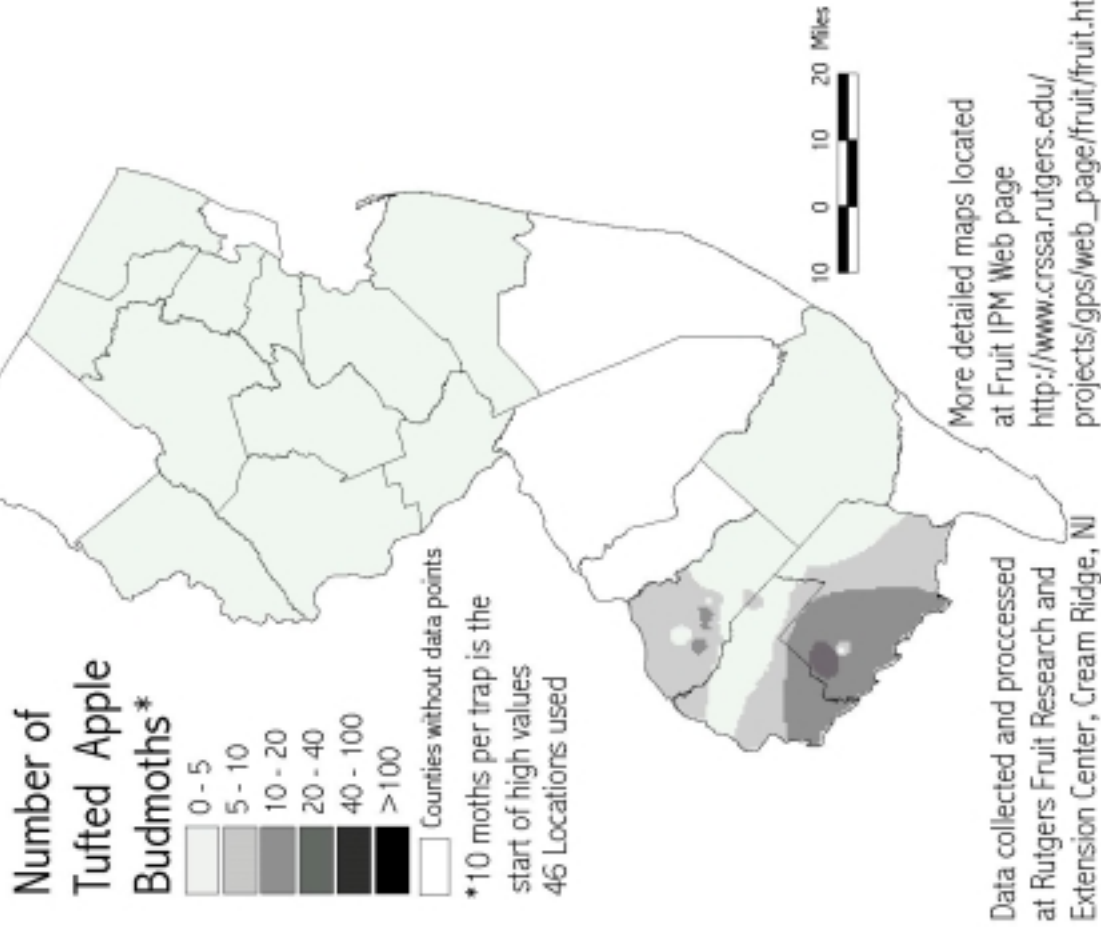
*5 moths per trap is the start of above threshold values
46 Locations used



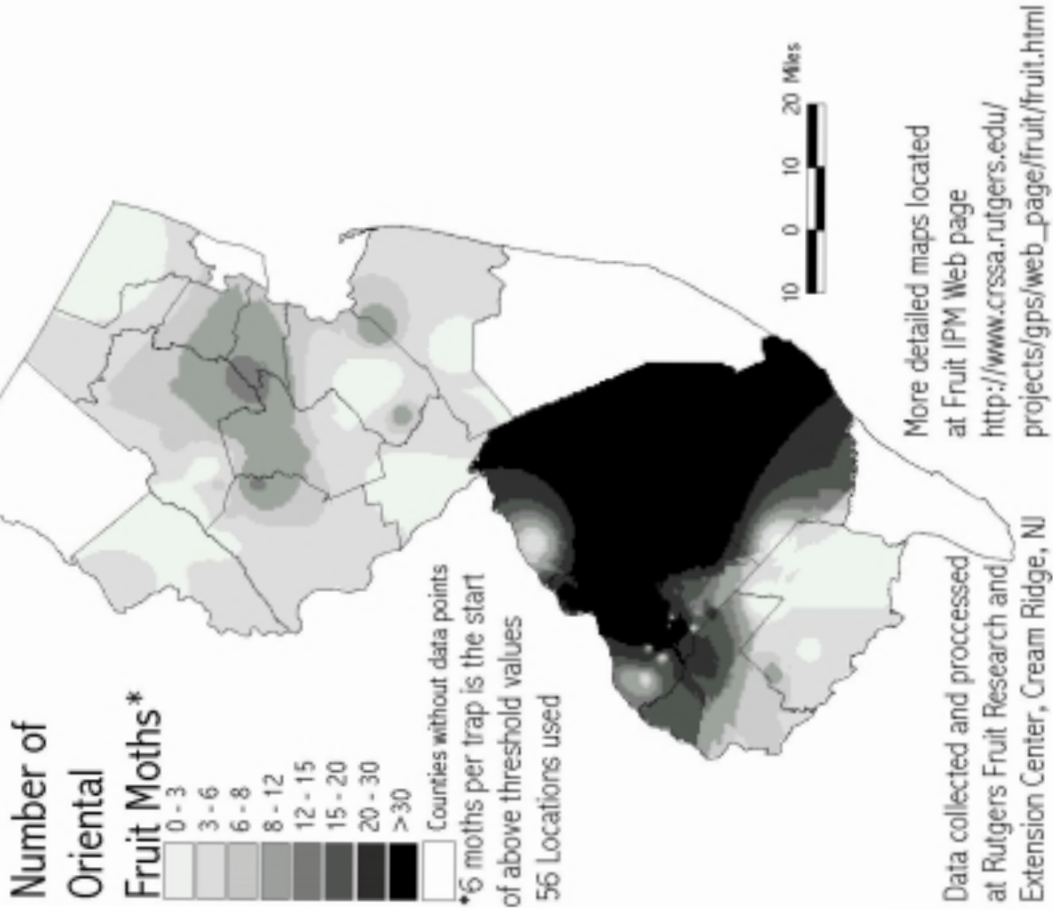
Data collected and processed at Rutgers Fruit Research and Extension Center, Cream Ridge, NJ

More detailed maps located at Fruit IPM Web page http://www.crssa.rutgers.edu/projects/gps/web_page/fruit/fruit.html

Tufted Apple Bud Moth Distribution Map Week ending, July 21, 2000



Oriental Fruit Moth Distribution Map Week ending, July 21, 2000



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