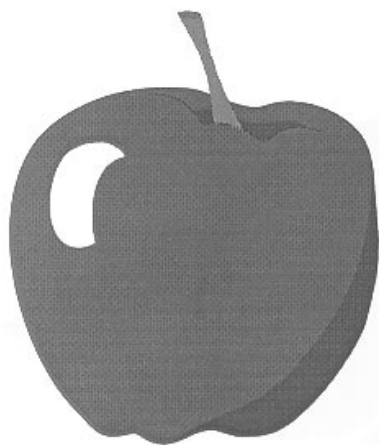


PLANT & PEST ADVISORY

FRUIT EDITION \$1.50

JULY 22, 1997



ReTain for Apple Crop Control in Southern New Jersey

Submitted by Jerome L. Frecon, Agricultural Agent

The following revised article, written by Dr. Richard Unrath, appeared in the July 1997 issue of North Carolina Apple Production News Volume 3, Number 7. While it may seem early to discuss stop drop spray, ReTain must be applied a minimum of 30 days before normal harvest. Since varieties like Gala and Paulared may be harvested in 4 weeks it is important to apply it now.

ReTain Has Been Granted Full Federal Label for 1997

ReTain (A.V.G.), produced by Abbott Laboratories, is a powerful new harvest management tool. It acts by blocking ethylene production in apples, which delays or slows all natural maturity processes. ReTain is labeled for a single application of one 333 gram pouch (50 grams a.i.) per acre at four weeks before the normal start of harvest date for non-treated fruit of any given variety. ReTain *MUST* be applied with Silwet L-77 or Sylgard at 0.1% (V/V.) To obtain full response, other surfactants and spreader stickers are not effective. Applications should be made at 1X-4X based on tree row volume water rates, higher concentrate applications show a reduced response.

Benefits of ReTain use include: strong stop drop control; letting fruit hang on the tree to allow for normal fruit size increases and better natural coloring as cooler night temperatures occur; a delay in fruit softening which increases fruit firmness with the option of delaying harvesting substantially and expecting fruit firmness similar to untreated fruit harvested much earlier. Coloration can be temporarily suppressed but the delayed harvesting compensates because of better natural (cooler temperatures) coloring conditions.

Fruit maturity will be delayed and as a result harvest must be delayed to allow ReTain treated fruit to reach acceptable harvest maturity. For this reason and that ReTain is very expensive, growers will want to use ReTain on only a portion of their acreage of any one variety so they will have some fruit to begin harvesting at the normal start of the harvest season. This will also help growers manage the harvest by spreading or expanding the picking window for one variety. The exception to spraying only a portion of your acreage may be for Gala, where fruit size is a prime consideration. The use of ReTain on Gala can provide a substantial fruit size increase and better coloration by

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delaying harvest without fear of over-maturity, accelerated fruit drop, and greatly reducing the stem end cracking problem with Gala fruit as they mature.

Generally fruit maturity and stop drop delays of 3-4 weeks are expected with ReTain under our conditions. However, with hot, dry adverse weather conditions the response has been reduced to two weeks. With optimum weather conditions we have seen delays of 5 and 6 weeks with good fruit quality and drop control. Growers should carefully monitor for fruit condition and loosening of ReTain treated orchards and make appropriate harvest timing decisions for their orchards and prevailing weather conditions. As a general rule we have found early season varieties to be exceptionally responsive, mid-season varieties to be very responsive and later season varieties to be less responsive. We also found Law Rome to be more responsive than green Romes in last year's tests.

Below is the recommendation that will be added to the spray manual:

ReTain is at least as strong and generally a stronger fruit drop control material than preload NAA, but ReTain also substantially delays fruit maturity. This maturity delay allows additional time on the tree for fruit to increase in size and develop natural coloration (for Red varieties) without excessive loosening and fruit becoming over-mature.

Response: To delay preharvest fruit drop and maturity to allow time for added fruit size increase and natural coloration of Red varieties.

Chemical: ReTain

Rate and Time of Application: Apply one 333 gram pouch (50 grams active ingredient) per acre plus Silwet L-77 or Sylgard surfactant at 0.1% (13 oz/100 gal) at 4 weeks before anticipated normal start of harvesting of untreated fruit.

Re-Entry Interval: 12 hours

Preharvest Interval: 28 days

Comments: Fruit maturity and harvest date will be significantly delayed.

Apple Prices

Submitted by Jerome L. Frecon, Agricultural Agent

The Volume #3 Edition of the July issue of the North Carolina Apple Production Newsletter contained some excellent information on apple prices received by North Carolina apple growers over the past years. Southern New Jersey growers use some of the same markets.

	Price Per Bushel		
	Fresh	Process	Juice
1988	\$1.62	\$1.94	n/a
1989	\$7.00	\$3.20	\$1.80
1990	\$8.50	\$3.78	\$2.52
1991	\$8.19	\$3.36	\$2.10
1992	\$8.50	\$2.94	\$2.10
1993	\$6.78	\$2.24	\$1.26
1994	\$8.20	\$3.47	\$1.68
1995	\$9.35	\$2.96	\$2.20
1996	\$7.50	\$4.09	\$3.36

Fruit Meeting Calendar

July 24 - 26, 1997 - NJ Peach Festival, Rt. 77 - 4-H Fairgrounds, Mullica Hill, NJ

Contact: Jerry Frecon, RCE of Gloucester County, 1200 N. Delsea Drive, Clayton, NJ 08312, 609-863-0110

July 31, 1997 - Pennsylvania Tree Fruit Growers Field Day, Penn State Fruit Research and Extension Center, Biglerville, PA

Contact: Dr. George Greene 717-677-6116

Sept. 11, 1997 - Variety Showcase and Open House, Rutgers Fruit Research and Extension Center, 283 Route 539, Cream Ridge, NJ

Contact: Dr. Joseph Goffreda 609-758-7311, Ext. 10.

Weekly Weather Summary

Keith Arnesen, Agricultural Meteorologist

Temperatures averaged much above normal. Extremes were 101 degrees at Pemberton and Woodstown on the 16th and 47 degrees at Charlotteburg on the 20th. Weekly rainfall averaged 0.28 inches North, 0.09 inches Central, and 0.53 inches South. The heaviest 24 hour total was 0.84 inches at Seabrook on the 18th to 19th. Estimated soil moisture, in percent of field capacity, this past week averaged 67 percent North, 43 percent Central and 41 percent South. Four inch soil temperatures averaged 75 degrees North, 78 degrees Central and 79 degrees South.

The following table contains meteorological information since the start of the growing season March 1st. The table is updated each Monday and the following is an explanation for each column.

Week=total rainfall for the previous 7 days ending Monday morning

Total=total rainfall since March 1st

Dep=departure from normal of rainfall since March 1st. A negative sign indicates below normal and no sign indicates above normal.

Mx=highest temperature for that 7 day period

Mn=lowest temperature for that 7 day period

Avg=average temperature for that 7 day period

Dep=departure from normal of the average temperature for that 7 day period

Total=total number of growing degree units since March 1st

Dep=departure from normal of growing degree units

%FC=percent of field capacity (soil moisture)

Weather Summary for the Week Ending 8 Am Monday 7/21/97										
WEATHER STATIONS	RAINFALL			TEMPERATURE				GDD BASE50		MON %FC
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	
BELVIDERE BRIDGE	.42	14.05	-4.13	94	51	75.	2	1223	-83	65
CANOE BROOK	.65	13.36	-5.91	101	56	81.	7	1490	180	65
CHARLOTTEBURG	.12	16.16	-3.29	95	47	74.	3	1144	80	57
FLEMINGTON	.09	13.78	-4.82	98	48	76.	2	1267	-85	59
LONG VALLEY	missing									
NEWTON	.11	13.93	-3.82	94	48	74.	2	1032	-136	66
FREEHOLD	missing									
LONG BRANCH	.00	14.12	-3.89	98	54	78.	3	1391	11	22
NEW BRUNSWICK	.28	17.70	-.24	97	50	78.	2	1428	-111	70
PEMBERTON	.01	14.41	-3.54	101	52	80.	5	1630	135	20
TOMS RIVER	.00	13.82	-4.58	99	54	79.	5	1432	44	25
TRENTON	.14	17.29	.22	97	49	77.	1	1420	-181	44
CAPE MAY COURT HOUSE	.00	14.41	-1.57	96	59	81.	5	1488	7	19
DOWNTOWN	.41	13.64	-3.08	98	55	81.	5	1512	-102	41
GLASSBORO	.37	15.81	-1.94	99	57	81.	5	1640	47	38
HAMMONTON	.20	14.18	-3.49	99	54	81.	5	1499	-89	29
POMONA	1.33	16.03	.10	98	55	81.	6	1506	31	66
SEABROOK	.84	15.26	-.90	98	58	82.	6	1624	3	59
ATLANTIC CITY MARINA	.56	11.39	-3.87	95	60	80.	5	1484	92	43
WOODSTOWN	.38	14.16	-3.76	101	56	83	NA	1652	NA	NA
WES KLINE — GDD BASE 40 PINEY HOLLOW										
Last Week	248 (Ending 07/14/97)									
This Week	286 (Ending 07/21/97)									

Fruit IPM

Dean Polk, Agricultural Agent

◆ Peach

✓ **Oriental Fruit Moth (OFM):** We are in between generations in most areas. Adult trap captures are below 6 to 8 males per trap, except where pressure has been very high.

✓ **Catfacing Insects:** Catfacing pressure has subsided somewhat in Gloucester through Cumberland Counties. One site in Camden County was seen with an assorted number of weeds in the ground cover and quite a bit of new catfacing injury. High populations of tarnished plant bugs or stink bugs can often result in fruit with multiple injuries. Fruit at the Camden County site had multiple spots of thin tendrils of sap oozing from the fruit. If a cut is made into the injury point in the direction from the skin to the pit, a thin necrotic area may be seen from 2 to 4 mm long. This is where the insect mouth parts entered the fruit. Sap is oozing from this one small point, which is why it appears like a thin tendril. Sap that is lumped up on the surface, or that is primarily on the suture, may be associated with an internal gumming around the pit, or a split pit. The latter is not insect injury.

✓ **Tufted Apple Budmoth (TABM):** No treatments are needed at this time. Trap counts are low, reflecting very little adult activity. Adult counts should increase over the next week to 10 days, with the first sprays due to control the second brood in about 2 weeks. Since we have already seen small amounts of first brood injury, particular care is advised for the second brood. Second brood injury is most common on those varieties that ripen after mid-August. I found up to 20+% injury on the last picking of Encore in Gloucester County during 1996. Options include Lannate LV @2-3pt/A or 90SP @.75-1 lb/A (1.5 pt of LV roughly equals the same amount of active ingredient as .5 lb of 90SP), or the synthetic pyrethroids (after mites are controlled): Ambush @6.4 - 10 oz/A (7 day PHI), or Asana @4.8 - 8 oz/A (14 day PHI). All sprays should be applied in at least 100 gal. of water per acre.

✓ **European red mites (ERM):** Mites have decreased where Apollo has been used. The mite predator, *Stethorus punctum*, has increased in many blocks. Where a 3 minute predator count compared to the number of mites per leaf equals a 2:1 or 2.5:1 ratio, biological control is usually seen within a week.

✓ **Thrips:** Some thrips injury has been seen on both nectarines and peaches. Thrips are common in weedy ground cover, especially clover seed heads. These insects are causing late season silvering injury during the last 1-2 weeks before picking. Lannate and Carzol work well, but only Lannate has a 4 day PHI (1 day on nectarines). Carzol has a 21 day PHI

which renders it useless to prevent late season silvering injury. Sevin, which has a 1 day PHI, has very little activity against thrips.

✓ **Japanese beetles (JB):** JB are appearing in ripening varieties. Since these insects damage the fruit during the final ripening phase, only insecticides with 1 to a few days PHI can be used. These include Lannate (see above) and Sevin (1 day PHI on peach and 3 days on nectarine).

✓ **Peach scab:** Scab is present at low levels where problems were seen last year. There are no controls which can be used after scab is visible. The disease takes a minimum of 40 days after infection takes place to become visible on the fruit. If scab infested fruit is seen, then special attention should be paid to that planting next year.

◆ Apple

✓ **Tufted apple budmoth (TABM):** The same timing applies for apple as for peach above. However, control options are different. One option available for apples is to use Confirm. Only 2 applications are needed, with the first application applied at 20-30% egg hatch (2350-2450 DD after biofix), and the second application at 60-70% egg hatch (2650-2740 DD after biofix). Confirm is a growth regulator, and must be ingested by the larvae. Therefore good coverage is essential. Use at least 100 gal. of water per acre on free standing trees greater than 10 feet tall.

✓ **Codling moth (CM):** According to degree day counts, second generation codling moth sprays are due in southern and central counties now (this past weekend in some areas). While Confirm has activity against codling moth, proper timing for TABM and CM treatments do not coincide. An OP is suggested for the first

SEE IPM ON PAGE 5

Tree Fruit Pest Degree Day Accumulations Since 1st Catch - 7/21/97

Site	Biofix/1 st Catch Date & DD - TABM	Biofix/1 st Catch Date & DD - CM
Hammonton - At. Co.	5/2 1784	5/9 1345
Hardingville - Glou. Co.	4/30 1813	4/30 1411
Bridgeton - Cumb. Co.	5/1 1820	5/2 1404
Princeton - Mercer Co.	5/12 1633	5/5 1311
Oldwick - Hunt. Co.	5/17 1522	5/16 1197
Hackettstown - War. Co.	5/22 1432	5/9 1221
Spray target after biofix/1st catch	Alt Mid Appl. at 490, 625, 763, 898 (1st brood), and 2228, 2415, 2605, 2795 (2nd brood)	250 DD plus 2 weeks later (1st generation), 1250-1300 DD plus 2-3 weeks later (2nd generation)

CM spray. This will also control any apple maggots that are also present. If growers are going to use Confirm, then the first TABM spray will likely also suffice for the second CM spray.

✓ **Spotted Tentiform leafminer (STLM):** Some locations have reflected up to 3 mines per leaf. Sap feeding larvae were present at treatment levels in several southern and northern locations this past week. Parasitism was very high at one Gloucester County farm. Parasitized larvae can be identified by opening up the mines and finding a white to cream colored cocoon in place of the larva. There are several parasites found naturally in the orchards, most of which are very small wasps.

✓ **Sooty blotch and fly speck:** Sooty blotch and fly speck sprays need to be applied in all southern and central counties. Applications of Benlate should be delayed until mid August, when its effect on predatory mites is minimized.

◆ **Blueberry**

✓ **Aphids:** Sampling has indicated decreased infestation levels since last week. The highest level was 13% of soft growing shoots infested. A combination of tissue hardening, very high temperatures, and use of high rates of Lannate has resulted in lower populations.

✓ **Blueberry maggot:** While traps placed in cultivated fields show very low populations, traps placed in wild sites show that we are close to peak adult activity. Although counts in Burlington County are usually higher than in Atlantic County, the reverse is true this year. One cultivated site in Atlantic County did show over 50 maggot fly adults per trap.

✓ **Sharpnosed leafhopper:** Activity has decreased some in commercial fields, indicating that we have reached peak activity in those areas.

◆ **Trap Averages**

South Jersey Tree Fruit

Week Ending	RBLR	STLM	TBM-A	CM	AM	OFM	TBM-P	LPTB	PTB
6/6	0.0	96	34.1	1.9	—	5.8	40.0	30.2	0.2
6/13	0.1	390	32.6	2.2	—	2.6	44.4	21.4	0.04
6/20	3.1	1036	58.0	4.9	—	5.4	74.3	19.9	0.5
6/27	26.9	1169	52.2	3/7	—	13.8	69.9	31.1	0.4
7/4	47.4	1517	45.9	1.9	.11	11.1	53.1	32.7	1.5
7/11	37.4	1507	19.8	1.4	.04	9.9	21.4	24.7	3.3
7/18	27.0	1108	7.1	2.0	.08	7.0	7.5	21.1	5.9

North Jersey Tree Fruit

Week Ending	RBLR	STLM	TBM-A	CM	AM	OFM	TBM-P	LPTB	PTB
6/6	0.3	26	3.0	3.1	—	4.8	2.3	5.3	0.6
6/13	0.05	268	8.4	3.5	—	4.2	6.8	21.6	1.5
6/20	0.1	374	21.1	5.5	0.0	2.5	19.2	22.3	1.5
6/27	5.2	658	19.1	5.1	0.0	2.1	14.5	17.4	1.0
7/4	1187	552	43.5	5.3	0.0	2.1	6.4	2.0	12.2
7/11	16.9	1330	13.9	1.9	0.0	3.0	5.8	0.8	1.0
7/18	7.2	528	5.8	0.9	0.0	1.9	1.8	2.8	0.7

Blueberry

Atlantic Co.

Week Ending	RBLR	OBLR	CBFW	SNLH	BBM
6/6	0	3.1	8.1	—	—
6/13	0.2	8.3	2.2	0.0	0.0
6/20	35.1	14.0	0.6	0.5	0.0
6/27	105	13.4	0.6	1.8	.02
7/4	97	3.4	0	1.5	.04
7/11	95	1.6	.04	0.8	0.2
7/18	39.1	0.6	0.0	0.3	.14

Burlington Co.

Week Ending	RBLR	OBLR	CBFW	SNLH	BBM
6/6	0	0.4	2.9	—	—
6/13	0.8	6.1	2.2	1.5	0.0
6/20	4.0	12.8	0.8	2.6	0.0
6/27	36	6.5	1.1	2.9	0.3
7/4	47	1.8	.06	1.2	0.0
7/11	71	2.1	0.4	1.4	0.0
7/18	31.3	0.4	0.0	0.7	0.0

Wild Sites

Week Ending	At.Co. SNLH	Burl.Co. SNLH	At.Co. BBM	Burl.Co. BBM
6/27	—	8.7	—	0.0
7/4	13	14.7	0.0	11.0
7/11	8.0	9.6	0.0	4.6
7/18	6.0	11.2	0.0	27.0

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