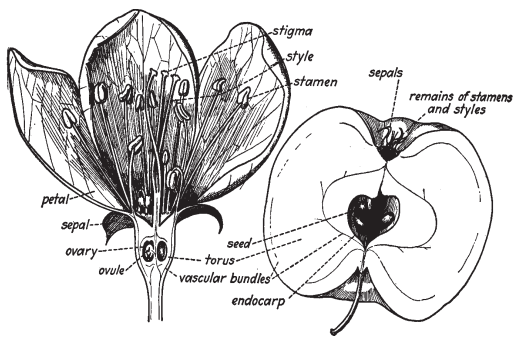


PLANT & PEST ADVISORY

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JULY 14, 1998



NAA Ethephon for Preharvest Drop Control

Predicted apple harvest in southern New Jersey is two weeks to 10 days early. Growers should thus be thinking of preharvest sprays to improve color, quality, and reduce drop in early varieties. In the July 7 issue Win Cowgill talked about Retain and Provide. Win also has details on the use of Ethephon and NAA in the 1998 NJ Commercial Tree Fruit Production Guide on pages 79 and 80.

The following information is contained in the 1997 Spray Bulletin for Commercial Tree Fruit Growers, written by Virginia, West Virginia and Maryland Cooperative Extension.

1. Ethephon for Stimulation of Coloring and Ripening of Apple

Ethephon (Ethrel) provides several fruit modifying effects (Table 15). Used properly, it can spread out picking time for selected parts of orchards by permitting earlier harvesting of better colored fruit. Ethephon response is greatest under good fruit-coloring conditions and cannot substitute for conditions associated with poor color development, such as hot weather and poorly-pruned trees. Hot, dry conditions may stimulate ripening, softening, and watercore with inadequate red color, particularly on fruit treated with ethephon. Ethephon is not advised under conditions of severe water stress and high temperature.

Ethephon applied alone can cause early and severe fruit drop. Combination of NAA with ethephon will provide adequate drop control. Two sprays at 20 ppm may be needed. NAA will only prevent fruit drop for 7-10 days. Therefore, 7 days after the initial ethephon-NAA application, an additional NAA application should be used if treated fruit will not be harvested by 8-9 days after initial application. Since only two NAA applications are permitted for fruit drop control, *all* treated fruit *must* be harvested by 8-10 days after the second NAA application.

For stimulating red color on fruit to be marketed early, use a dilute spray combination of ethephon at 3/4 to 1 pt per 100 gal plus 4 oz of a surfactant plus NAA as shown in Table 15.

Use ethephon 1 to 2 weeks before normal picking time. Do not spray ethephon earlier than 3 weeks before normal harvest date because response may be limited.

Check fruit development closely, and harvest when treated fruit are ready. Do not spray more fruit than can be harvested in a 2-3 day period. Watch fruit condition because ethephon reduces starch levels,

SEE NAA ON PAGE 2

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Strawberry Renovation on Plastic Mulch

Pete Probasco, Agricultural Agent

Now is the time of year to finish up renovating your plastic culture strawberries. Growers who have done this report that yields can be equal to or better than first year strawberries on plastic. The idea is to reduce the plants to two - three crowns per hole by thinning and mowing. This can be done with an asparagus knife by cutting the plant and crown in half and discarding the cut half. Then, you should mow the field back to an inch above the plastic. Mowing too close will kill some of the strawberries. Run the drip irrigation after renovating and spray the field with Benlate (1 lb. SOWP/A) after new leaves have developed.

Strawberries will be slightly smaller on a renovated field than a new field but still will be very marketable. The cost of renovation is much less than the cost of establishing a new field. The problem many growers have is that they are busy with other crops at this time and don't get around to renovating their old strawberry fields. Take the time - it may be your best investment. □

Meeting Calendar

July 23 through July 26, 1998 - New Jersey Peach Festival at the Gloucester County 4-H Fair, 4-H Fairgrounds, Mullica Hill, NJ. Contact Chris Smith at 609-881-1411 or Marsha Gaventa at 609-467-8028.

August 4, 1998 - Deer Fencing Installation Seminar, Rutgers Snyder Research Farm, Pittstown, NJ. Call Snyder Farm at (908) 730-9419, ext. 11 to register.

August 5, 1998 - Deer Fencing Installation Seminar, Rutgers Agricultural Research & Development Center, Bridgeton, NJ. To register, call Rutgers Snyder Research Farm at (908) 730-9419, ext. 11.

August 18, 1998, 6:30 p.m. - Direct Marketing Twilight Meeting, Monmouth County, Atlantic Farms, 1506 Atlantic Avenue, Wall Township (Rt. 524), NJ 08736. Contact Ramu Govindasamy at (732) 932-9171 ext. 25.

NAA FROM PAGE 1

increases soluble solids, and stimulates ripening and softening of apples on the tree and after harvest. It may be possible to begin harvest earlier in some seasons, or to pick more or most fruit with better color at normal picking time.

Ethephon absorption is decreased at low temperatures. Apply when air temperature is between 60 degrees and 85 degrees F. *Reduced response may be expected if application is followed by rain or excessive heat.*

Table 15. Ethephon Timing and Stop-drop Concentration

Variety	Timing (weeks before normal picking)	Concentration (ppm) NAA
Jonathan	1-2	10
Delicious	1-2	10
Golden Delicious	1	10
Rome	1	10-20
Stayman	1	10-20
Winesap	1	10
York	1	10

¹An additional application should be made if fruit are not harvested by 8-9 days after initial application

2. Preharvest Drop Control of Apples

Naphthaleneacetic acid (NAA) provides preharvest drop control (Table 15 & 16).

Proper timing and rate are important for effectiveness (Table 16). Anticipating the expected time of drop is affected by weather conditions; however, the period is usually around the normal harvest period for a given variety. Heavy, late season rains, particularly following drought conditions, have been associated with heavy preharvest drop.

Fruit should be harvested as near the normal harvest date as possible, even with the use of NAA. NAA reduces the drop of fruit, but fruit ripening continues at normal or even faster rates. Such fruit, if allowed to remain on the tree too long, will be of poor quality and have decreased storage life.

NAA may not be effective when applied at low-volume concentrations. Use dilute or not higher than 3x, based on tree-row-volume calibration. Thorough coverage is necessary. Healthy leaves are necessary for maximum stop-drop spray effectiveness; severe mite injury on leaves can reduce response.

Recent research results indicate that NAA may be most effective when applied before fruit loosen on the tree. We suggest an application at least 2 weeks before the first fruits drop (about 3 weeks before harvest). NAA becomes effective 2-3 days after application. It may be necessary to apply a second spray of NAA if fruit start to loosen. Do not make more than two applications because additional applications may not be effective. Do not use within two days of harvest.

Table 16. NAA rates for preharvest drop control

Variety	NAA (ppm)
Grimes	5
Jonathan	10
Delicious	10
Golden Delicious	10
Rome	10-20
Stayman	10-20
York	10-20
Winesap	10-20
Other late varieties	10-20

Submitted by Jerome L. Frecon, Agricultural Agent

Apple Summer Disease Control and Spray Coverage

Dave Rosenberger, Extension Plant Pathologist, Cornell University, Hudson Valley Lab

Reprinted from *Scaffolds Fruit Journal* Volume 7 No. 17, <http://www.nysaes.cornell.edu/ent/scaffolds/>

Good spray coverage will be especially important for controlling apple diseases throughout summer and fall of 1998. Apple scab is present in many orchards, and a wet June has favored early development of summer diseases (flyspeck and sooty blotch) in many regions of the state. In "normal" years, apple scab disappears as a concern after mid-June, and the threat from summer diseases does not peak until late July or early August. This year, apple scab has remained a constant threat in many orchards where primary scab was not completely controlled. Wet weather in early summer has allowed summer diseases to build more quickly than normal in border areas that supply most of the summer disease inoculum for commercial orchards. As a result, complete spray coverage in the tops and centers of trees will be essential for preventing summer diseases and late-season fruit scab in 1998.

Several approaches can be used to improve spray coverage. Proper sprayer calibration and nozzle orientation are obvious first steps. It may also be necessary to slow down travel speed while applying sprays, especially where smaller PTO-powered sprayers are being used to spray large or minimally-pruned trees. Complete spray coverage is possible only when the sprayer fan moves enough air to displace the air within the tree canopy. The volume of air per linear foot of tree row can be increased by slowing the travel speed of the sprayer. Where apple scab is still a problem, fungicide spray intervals may need to be shortened. Benlate and Topsin M both provide up to three weeks of protection against summer diseases, but these fungicides probably will not control apple scab because resistant isolates are present in most orchards. Residual activity of captan is not reliable for more than 14 days. In orchards where scab is prevalent, spray intervals should be kept to 14 days except when hot dry weather supplies a natural brake for scab development.

Summer pruning will help to improve disease control by opening the tree canopy and thereby allowing better spray penetration. The interior of the canopy on a summer-pruned tree will dry more quickly than that of an unpruned tree, thereby minimizing the duration of wetting periods that favor disease development. Where scab was active through June, water sprouts in the center of trees often harbor the most recent scab infections because these actively growing shoots provide a constant source of susceptible tissue. Eliminating water sprouts can therefore help to eliminate some of the scab inoculum.

The benefits of summer pruning will be especially important if rainfall is abundant during August and September. As apple limbs begin to bend down under the crop load, it will become increasingly difficult to maintain good fungicide coverage on fruit in dense tree canopies. Effective summer pruning could result in significantly better control of late-season scab infections that would otherwise cause pinpoint scab of fruit during storage.

Submitted by Win Cowgill, County Agent <http://orchard.uv.edu/win>. □

Save a Miticide: Rotate

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

This is a gentle reminder to practice miticide-resistance management. Most of us have been through cycles of watching miticides lose their effectiveness over time. What used to work doesn't any more. Then, all of a sudden, a new miticide gets registered and everyone is happy because now mites are easily controlled. That is, until resistance develops and the product no longer works. Let's not let this happen with our new miticides.

We have several recently registered miticides available for mite control on apples including Apollo, Savey, Agri-mek, and Pyramite. I know that a lot of apple growers have used these in their orchards. What impresses me is the number of New Jersey growers that are practicing resistance management by rotating the use of these and other miticides in addition to using lower rates and practicing Integrated Mite Management. If done correctly, I expect that these growers will prolong the effective life of these products in their orchards.

Other growers should follow the examples set by these good growers. This may be especially important when using Pyramite. A search of the literature revealed an alarming item: mites are resistant to pyridaben (the active ingredient of Pyramite) in parts of Asia where it has been used in tree fruit for several years. Let's not let that happen here! Remember, spray only when you have to, avoid disruptive materials that flair mite populations, rotate miticides, and provide adequate coverage when spraying. Save a miticide: Practice resistance management. □

Fruit IPM

Dean Polk, Agricultural Agent

Peach

Tarnished Plant Bug (TPB), Catfacing Insects, and Thrips: Overall catfacing pressure has been low, with a few exceptions of adult stink bugs occasionally found in the trees. Thrips injury (see last week) has been another story. While the most heavily affected varieties seem to have been Eastern nectarines and Sentry peaches, all peach varieties in scouted blocks have some level of feeding. Most injury is occurring during the last 7 to 10 days prior to picking. If thrips are present, insecticide (Lannate) must be on the fruit as close to picking as possible. If more than 7 to 10 days passes between the first pre-harvest application and the SECOND picking, a second application may be needed. Thrips have been observed to continue feeding just prior to the second picking AFTER an initial application was made prior to the first picking. Be careful to observe the 4 day PHI for Lannate on peaches, or 1 day PHI on nectarines.

Oriental Fruit Moth: As mentioned last week, several sites had been found where there were occasional entries on fruit. Upon exploring the surroundings, abandoned and poorly sprayed peach and apple trees are playing an important role. On one farm apples that border a peach block were found to have many fruit infested with fruit moth larvae. Apples were located in the tops and centers of large, thick trees, making them very difficult to reach with insecticide.

Fruit Condition and Disease: Many injured fruit are being found that are bleeding and gumming. Upon examination, the fruit is gumming around the pit, or the pit is starting to split. These fruit are going to be more susceptible to brown rot as the season progresses. Growers who are on a sulfur schedule may wish to switch to a captan-based program during at least the last 3 weeks prior to picking. Some brown rot is present on ripening fruit, especially on split pit fruit. While it may be easy to say "they're only splits", brown rot present on split pits adds to the inoculum level and pressure, making disease control a greater challenge. Rhizopus is also present on about 1% of harvested fruit.

Apple

Spotted Tentiform Leafminer (STLM): New sapfeeding mines continue to appear in both southern and northern orchards. Vydate applied for sapfeeding miners has been very effective. (It has also been observed to suppress mite populations where ERM populations were heavy.) However, under heavy STLM pressure, one application may not be sufficient. Provado is more effective than Vydate, but is harsh on mite predators and can aggravate a mite problem.

European Red Mite (ERM): Mite control has broken in several locations where Pyramite was applied earlier. Unfortunately there are few alternatives at this time of year. If predators are not present, the alternatives include: Kelthane 35W @4-6 lb/A or 50W @3-5 lb/A (higher rates are usually needed in NJ orchards). Most growers have also used Pyramite at the 4.4 oz/A rate. The label rate goes up to 13.2 oz/A, but of course is much more expensive, and repeated use of Pyramite is not good resistance management. Lorsban-based insecticide programs may also suppress mite populations.

Rose Leafhoppers (RLH): RLH adults are present in several south Jersey orchards and are laying eggs. These insects will remain with us through the Fall, and will be joined by white apple leafhopper in several weeks.

Codling Moth (CM): Sprays for the second generation should continue in all areas of the State. Growers who have trap counts above 5 moths per trap should be particularly aware of CM problems. Old CM stings are evident on a number of large trees. Populations in and around these trees can cause increased insect pressure. Remember that strong afternoon thunderstorms can wash off most of a fresh insecticide application. If this occurs during the peak of insect activity, (now) the material should be re-applied.

Disease Control: Wetting periods are predicted to produce scab and fire blight infections in northern counties around Wednesday or Thursday of this week. Afternoon storms may bring both scab and fire blight infections to orchards in southern counties from Tuesday through Saturday.

SEE IPM ON PAGE 5

Degree Day Accumulations Since Biofix and Spray Targets								
July 12								
Insect	Hammonton	Bridgeton	Hardingville	CreamRidge	Princeton	Oldwick	Pittstown	Hackettstown
OFM	Done	Done	Done	Done	Done	Done	Done	Done
TABM	1745	1733	1766	1634	1620	1594	1391	1287
CM	1322	1356	1374	1285	1260	1232	—	1048
Spray Targets:								
OFM	200 & 400 DD ₄₅ after biofix (1 st generation).							
TABM	490, 625, 763, 898 DD ₄₅ after biofix (1 st generation). 2228, 2415, 2605, 2795 DD ₄₅ after biofix (2 nd generation).							
CM	250 DD ₅₀ after biofix plus 14 days later (1 st generation). 1250-1300 DD ₅₀ after biofix plus 14 days later (2 nd generation).							

Blueberry

Leafrollers: Leafroller larvae are being seen in only 8% of our samples. Two tenth percent larvae per 20 clusters was the highest level seen.

Aphids: Aphids are being found at fewer sites, although a few farms are still seeing some blocks in the 40-50% infestation range. The average shoot infestation level across all farms sampled is 7%.

Cranberry Fruitworm: The number of samples with infested fruit is lower than the previous week. Four

percent of samples had some level of infested fruit with 00.7% being the highest level seen.

Blueberry Maggots: Trap captures of fruit flies have increased slightly as compared to the previous week in both commercial and abandoned fields.

Disease: Mummyberry was found in 27% of our samples with 03.6% being the highest level seen. Anthracnose was seen in 25% of all samples, while Alternaria was found in 16%. The highest levels for each disease was at 01.1% and 00.4%, respectively.

Trap Captures

Tree Fruit – South Jersey

WEEK END:	RBLR	STLM	TABM-A CM	AM	OFM	TABM-P	LPTB	PTB
5-Jun	0.20	875	58.49	5.51	0.25	8.75	84.20	55.87 2.62
12-Jun	6.80	850	59.83	2.83	0.08	5.31	67.72	62.29 1.13
19-Jun	12.20	931	27.52	1.77	0.24	7.64	36.90	44.50 1.68
26-Jun	27.80	1054	38.62	1.96	0.28	11.81	52.12	54.37 7.70
3-Jul	19.60	943	25.26	1.52	0.05	8.55	30.91	40.69 8.57
10-Jul	4.28	782.48	10.14	1.33	0.03	6.18	12.58	26.81 2.62

Tree Fruit – North Jersey

WEEK END:	RBLR	STLM	TABM-A CM	AM	OFM	TABM-P	LPTB	PTB
5-Jun	0.30	658	42.30	10.09		8.49	33.14	53.26 0.00
12-Jun	0.61	429	23.05	2.65		1.87	21.15	2.53 0.00
19-Jun	5.71	1210	27.15	4.75		4.65	22.48	25.88 0.27
26-Jun	21.54	1162	20.07	7.38		8.59	17.41	38.72 2.04
3-Jul	36.41	844	15.20	4.98	0.10	8.05	13.81	25.11 3.77
10-Jul	20.19	649	3.31	1.79	0.32	4.66	4.91	23.88 5.03

Blueberry - Atlantic Co.

WEEK END:	RBLR	OBLR	CBFW	SNLH	BBM/HIGH	BBM/LOW
6/5	12.4	7.5	0.53	0	0	0.04
6/12	26.25	2.025	0.41	0	0.06	0.01
6/19	44.98	1.47	0.30	0.25	0.02	0.01
6/26	36.04	1.34	0.04	0.004	0.67	0.30
7/3	20.79	1.0	0.03	0.02	0.34	0.22
7/10	7.4	0.42	0	0	0.33	0.15

Blueberry - Burlington Co.

WEEK END:	RBLR	OBLR	CBFW	SNLH	BBM/HIGH	BBM/LOW
6/5	0.89	12.17	1.61	0.47	0	0
6/12	5.44	11.38	2.17	0.67	0	0.03
6/19	21.67	10.31	3.83	0.61	0.07	0.11
6/26	40.78	4.19	0.56	0.5	0.2	0.17
7/3	23.61	1.31	0.44	0.06	0.35	0.06
7/10	6.6	0.2	0	0.03	0.5	0.12

Market News Reports on the Internet

Jerome L. Frecon, Agricultural Agent

If you have computer access to the Internet, then you can get all types of daily market reports for free. The United States Department of Agriculture, Agricultural Marketing Service has a page listing all the market reports they publish that can be easily accessed by highlighting and clicking the report. The address is

<http://www.ams.usda.gov/fv/mncs/fvwires.htm>.

Many fruit growers and marketers in southern New Jersey are interested in the Bridgeton Shipping Point Report. It is posted daily. I accessed the first peach prices of the year on Monday the thirteenth of July at 5 p.m. The address is: http://www.ams.usda.gov/mncs/mn_reports/BT_FV110txt. The address for Appalachian District Processing Apple Report is: http://www.ams.usda.gov/mncs/mn_reports/MB_FV195txt. □

Update on Early Maturing Peach Varieties in SNJ

Jerome L. Frecon, Agricultural Agent

Redhaven is now ripening in southern New Jersey. This season we are getting better quantitative information on fruit size, split pits, and fruit blemishes on our cultivar evaluations. A hundred fruit of each variety are selected at random and sized and graded. Bob Belding and his associates are also collecting postharvest and quality data on the best selections.

On Thursday evening July 9th a variety meeting was held with grower members of the New Jersey Peach Council. Many very early and early season varieties, ripening before Sentinel, were on display, or observed on the tree at the Jake Reuter Memorial Block in Richwood.

The following are some comments on the best varieties we have evaluated:

Rich May - This yellow-fleshed variety ripened on June 19. While the size was small it was a beautiful and firm fleshed peach. It never crops heavily and is susceptible to bacterial spot;

Flamin Fury #1 - This attractive bright red skinned, yellow-fleshed variety ripened on June 21. It was observed this year on my test site and in five commercial orchards. The following is a breakdown of sizes in two commercial orchards: 46% were less than two inches and 49% were between 2" and 2 1/4 inches. FF#1 must be thinned hard to obtain acceptable size. It has generally been small in my test block and in two of the five commercial orchards where it was observed. In two orchards with a moderately heavy crop it had very acceptable size. In these orchards the size average was 33% 2 1/4 to 2 1/2 inches, and 62% 2 1/2 inches to 2 3/4 inches in diameter. In all of these orchards it had very few splits. While it is firm fleshed it will not hang as well as some of the later maturing varieties. It is probably the best peach we have in this very early season;

Derby and Candor - These two yellow-fleshed varieties ripened on June 24 and June 25. Both had acceptable size. Derby's size averaged 40% 2 1/4 to 2 1/2 inches and 40% 2 1/2 to 2 3/4 inches in diameter. 40% of the fruit, however, had split pits;

Flamin Fury #5B - This yellow-fleshed variety matures on June 24, and has better color and fewer split pits than Candor or Derby. It is probably just as firm. The following is a breakdown of sizes from my test trees. 75% were from 2 1/4 to 2 1/2 inches and 25% for 2 1/2 to 2 3/4 inches in diameter with 5% split pits. No growers in southern New Jersey have this selection in production;

Harrow Dawn - This firm yellow-fleshed variety ripened on June 30th. It is quite attractive, large and

hangs on the tree well. Split pits may be a problem. On my three year old test trees 16% were 2 1/4 to 2 1/2 inches and 83% were 2 1/2 to 2 3/4 inches in diameter. These trees had 24% split pits. On two year old trees the sizes were 44% 2 1/4 to 2 1/2 inches and 49% 2 1/2 to 2 3/4 inches in diameter with 12.5% split pits;

Scarlet Pearl - This moderately firm white-fleshed peach ripened on June 30th. We have been evaluating this variety many years and firmness has been its main drawback. It has very good high acid aromatic flavor and color. Fruit size was 70% 2 1/4 to 2 1/2 inch and 30% 2 1/2 to 2 3/4 inches in diameter with 8% split pits. In a second test planting fruit was smaller with 50% 2 1/4 to 2 1/2 inches and 8% 2 1/2 to 2 3/4 inches in diameter. This lot had 2% split pits;

Sugar May - This dark red, very firm white-fleshed variety ripened on July 3 and hangs on the tree very well. Sugar May has a low acid flavor similar to White Lady. Both Sugar May and Summer Pearl are susceptible to bacterial spot. Fruit size was 47% 2 1/4 to 2 1/2 inches and 35% 2 1/2 to 2 3/4 inches in diameter. Only 1% of the fruit had split pits;

Glen Glo - Formerly GW 115, Glen Glo is an attractive, firm, yellow-fleshed variety ripening with Garnet Beauty on July 1st. Glen Glo has nice size with 99% of the fruit above 2 1/2 inches in diameter and only 4% split pits. Glen Glo may be a good variety where Sentry does not crop well if it is winter hardy. It does not appear to set heavily in either of my test blocks;

Sentry - A significant amount of this attractive yellow-fleshed variety is fruiting in southern New Jersey orchards. Because of its reputation for good size Sentry is not being thinned hard enough where it sets heavily. In one test block where Sentry was not thinned hard it was 72% 2 1/4 to 2 1/2 inches and 21 % 2 1/2 to 2 3/4 inches in diameter with 5% split pits. Where it was thinned size was 28% 2 1/4 to 2 1/2 inches and 72% 2 1/2 inches to 2 3/4 inches in diameter with 2% split pits. Sentry ripens with Garnet Beauty on July 1 with fewer split pits;

Summer Serenade - I am not sure if this variety has been officially named but it has been tested many years as WB 258 ripening in 1998 on June 30th. WB 258 is attractive and firm, and has been more productive than Glen Glo or Sentry, but similar to Garnet Beauty. The fruit size is better than Garnet Beauty. On trees that were not thinned hard fruit size was 61 % 2 1/4 to 2 1/2 inches, and 39% 2 1/2 to 2 3/4 inches in diameter with 11% split pits, while in a test block thinned hard it had 24% 2 1/4 to 2 1/2 inches and 76 % 2 1/2 to 2 3/4 inches in diameter with 22% split pits. A disadvantage of this variety is the high percentage of split pits similar to Garnet Beauty;

Gala - This attractive yellow-fleshed variety ripened on July 4. Unfortunately the fruit size was small with

SEE VARIETIES ON PAGE 7

100% of the fruit 2" to 2 1/4 inches in diameter;

Rising Star - Also known as Fruit Acres 47 this very attractive variety ripened on June 29th just before Garnet Beauty. This is the first year I have had a good crop to evaluate. The fruit was moderately firm with a full bright crimson red blush over 80% of the surface. 47.5% of the fruit was 2 1/4 to 2 1/2 inches and 44.5% 2 1/2 to 2 3/4 inches in diameter with 3% split pits;

Golden Monarch - This northwestern yellow-fleshed variety ripened on June 29th. It was dark red and firm. The trees are only two years old so it was not sized;

Summer Prince - This yellow-fleshed variety ripens on July 7 just before Sentinel. It is very firm and attractive with a deep bright red color over 90% of the skin surface. However, Summer Prince for the second year in a row did not size with 94% of the fruit less than 2 1/4 inches in size.

Eastern Glo - This is still the prettiest nectarine with 90% of the surface covered with a bright red blush. If Eastern glo gets too dark it will be stippled and have skin discoloration when exposed to water and abrasions. Eastern glo picked and handled properly on my test trees had 21% 2" to 2 1/4 inch, 56% 2 1/4 to 2 1/2 inch fruit and 23% 2 1/2 to 2 3/4 inch fruit with 15% split pits. Eastern glo is very firm and has a high acid tangy flavor when mature on July 5.

Arctic Glo - It is similar to Eastern glo in many ways ripening in the same season but with white flesh. Artic glo is a beautiful nectarine and has a lower percentage of skin blemishes than most varieties. It is very firm with a high acid aromatic white flesh streaked with red. Arctic Glo had 20% 2" to 2 1/4 inch fruit, 76% 2 1/4 to 2 1/2 inch and 4% 2 1/2 to 2 3/4 inch fruit with 9% split pits;

Southern Pearl - This attractive white fleshed peach ripens on July 9 with Sentinel. It is attractive with 65 to 75% of the surface covered with a bright pinkish red blush. It is sweet and aromatic with firm juicy flesh. 100% of Southern Pearls fruit is 2 1/2 or larger with 5% split pits.

Southern Pearl is not as susceptible to bacterial spot as Sugar May, Scarlet Pearl. It is more productive, larger and firmer than Snobrite ripening in the same season.

Many other varieties were evaluated but most were either not attractive, not firm, not productive or susceptible to bacterial spot. This growing has been particularly difficult for nectarines so all varieties are being evaluated for fruit finish and blemishes. Only **May Grand** and **Zee Grand** had as good a finish as Arctic Glo and Eastern Glo but both were significantly smaller. □

Split and Shattered Pits in Peaches

Jerome L. Frecon, Agricultural Agent

Growers continue to ask about the high percentage of split pits in early maturing varieties. There are genetic differences in the susceptibility of varieties to splitting. Early maturing varieties are generally more susceptible.

Peaches with split pits are undesirable because they may develop rot problems, are generally misshapen, and if they split, the end of the fruit may be a point of entry for earwigs and other insects. If the fruit is open or visible the fruit is usually downgraded and sized, and of lesser value.

Many early varieties of peaches are clingstone and enter their final swell (cell enlargement) before the pit has hardened. If the enlargement is rapid or great, these flesh cells may pull the hardening pit apart. Usually mid- and late-season varieties have freer stones that are hardened before the final swell. Any cultural practice or environmental condition that causes rapid sizing will cause splitting on early varieties. Scoring or girdling in some regions of the United States reduces split pitting on susceptible varieties. Better control of nitrogen fertility and irrigation will reduce split pitting. If a crop is reduced by frost or freezes, controls must be implemented to reduce or slow down growth.

Shattered pits may occur in peaches with split pits. Pits may also be shattered on later varieties. Why shattering occurs is not completely understood. Shattering of pits, however, is probably related to low temperature injury during the pre-bloom or post-bloom period. Four nights of below-freezing temperatures during the post bloom period in April 1998 can be expected to result in the appearance of shattered pits. Because the pit of a peach is the "factory of energy" for growth and development of the fruit, any injury may result in shattering of the pit, abnormal size or shape, or premature ripening or drop. Passive and active methods of low temperature control can be employed during bloom, but little can be done after the damage is done. Watch fruit closely for these symptoms since shattering of pits may also increase fruit rots. Additional fungicide application may be warranted if this occurs. □

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