

PLANT & PEST ADVISORY

FRUIT EDITION \$1.50

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Peach Inking
Source: University of California at Davis

Peach Inking and Skin Discoloration

Jerome L. Frecon, Agricultural Agent

With the beginning of the peach harvest season comes the problem of inking. While we don't know the exact cause of inking and skin discoloration we know that it is related to four major groups of factors. These factors are based on research done at Rutgers and, more recently, at the University of California by Dr. Carlos Crisosto. They are:

- a) cultivar susceptibility;
- b) water;
- c) contaminants;
- d) abrasions of the skin;

a) Early maturing cultivars seem to be most susceptible. Any cultivar with dark-red or purplish over color can show inking or discoloration. Some of the very firm low acid white-fleshed varieties have been susceptible to discoloration. When very firm fleshed varieties are left on the tree too long waiting for size, the skin can soften, rendering them more susceptible to discoloration. No recommendations can be made based on varieties immune to discoloration or highly susceptible to skin discoloration. You never know for sure if it is going to be a regular problem with a cultivar.

b) We continue to recommend that water in the hydrocooler and hydrobrusher be buffered to maintain the pH at or near 7. Also make sure the water is not high in iron, copper or aluminum. Make sure your equipment is not corroded, depositing metals in the water. The water should be changed regularly and if the source is high in iron either change the source or install a filtering device. Skin discoloration has also been observed where fruit is harvested in the rain. Consider not harvesting under these conditions.

c) Dr. Crisosto has done a lot of work studying contaminants in contact with the fruit. Harvest fruit with clean hands and gloves. Make sure your picking bags and boxes as well as bins are clean. Avoid extensive exposure to dust. Make sure hydrocoolers, grading and packing equipment are clean. Do not spray nutrients with heavy metals during fruit maturation (final swell). As Dr. Joseph Heckman of Rutgers Cooperative Extension has pointed out in an earlier newsletter there are some fertilizers with significant heavy metal contaminants. Dr. Crisosto in his post harvest fact sheet also lists pre harvest intervals of formulations of Z.I.P. (20 DBH), Benlate (12 DBH), Roval (7 DBH) and Ronilan (1DBH). Information is not available on new fungicides and the latest

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Early Season Peach Varieties

Jerome L. Frecon, Agricultural Agent

The other day a grower asked me to make a list of varieties that I would plant, if planting an orchard today. This is always difficult for me because I have seen so many good varieties, and every site, growing and marketing situation is different. For example, we are in a season now when a number of nice varieties are available to replace Garnet Beauty (note picture 1). Many have been commercially planted while some have not. Let's look at these.

Sentry – This variety is probably the standard in this season. There are probably more acres planted today of Garnet Beauty than any of the early Red Haven types. It sizes much better and because it sizes uniformly, the number of split pits are much less. It either sizes because it is genetically larger or because it doesn't have the bud density. On many orchard sites there are frequently not enough buds to set a heavy crop. Wait to see what the bud density is before pruning in the spring. When Sentry has a full crop the color is equal to Garnet Beauty. When the crop is less, the tree is heavily foliated and the color suffers like it would on most varieties. With the proper fertility program (don't let the tree get too bushy and rank with heavy N) and good growing conditions the fruit of Sentry will be firm. The firmness and flavor are acceptable for commercial shipment.

Sweet Scarlet – This is the most beautiful peach in this season if you can keep the **bacterial spot** off the skin. The color is beautiful; dark to crimson orange over most of the fruit surface. The flesh is very firm, making it difficult to determine exact maturity. It has a sweet low-acid flavor, very good for an early season peach. Unfortunately, it is very susceptible to **bacterial spot**, which can blemish the fruit, and probably reduces fruit size because of leaf drop. It is genetically large for this season. Sweet Scarlet is the lightest cropper of all the varieties in this season.

Flamin Fury PF#7 – This very attractive peach has good flavor and very good color. It has no **bacterial spot** and crops heavily. This probably hurts its fruit size but if thinned hard it should produce a high percentage of 2 ½ inch fruit. The flesh is firm and the flavor acceptable for commercial shipment.

Summer Serenade – This variety has been in my variety block as WB 258 for over twenty years. I have been surprised not more acres have been planted. Growers that have them planted like the peach. The size is very good, color is excellent and the fruit is quite firm. The

flavor is good and it should be a good commercial shipping variety. The fruit is globose and in some years has a prominent suture. While it crops well the tree is weak and prone to *Cytospora* sp. canker. I have seen some **bacterial spot** but certainly not at a level that can't be managed.

Harrow Dawn – This attractive peach has very good size as well as flavor. The tree is very productive which does not seem to affect its genetically large size. It does not have the red color of other varieties but amount is acceptable. It is resistant to **bacterial spot**. The major problem that I have with Harrow Dawn is moderately firm flesh which may limit its acceptance for commercial shipment. The flavor makes it a viable variety for local sales on colder sites.

Glenglo – I have tested this variety for 15 years as GW 115. The fruit is large and more attractive than most of the other varieties except Sweet Scarlet. Fruit size is good. The flavor and flesh firmness are acceptable. **Bacterial spot** has not been a problem. Glenglo may be a replacement for Sentry because it crops better and produces consistently good sized fruit.

Rising Star – This is part of the Stellar series of peaches from Michigan and has been tested as FA 47. It doesn't have the class of the later Stellar varieties. Like most of the Michigan peaches it sets up heavily and has no **bacterial spot**. The flavor is good and the firmness acceptable. The color is very good but not as attractive as Glenglo, Sweet Scarlet or Sentry. We never seem to get this thinned properly to maximize size. When it is thinned I still have difficulty getting the size of the other varieties in this season. I thought it was a little earlier but in 2003 it ripened with Sentry and Glenglo.

All of these peaches are yellow-fleshed with a semi-clingstone when dead ripe.



Mid-Summer Hort Tips

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

- Remove clothespins that were placed to establish wide crotch angles on young apple trees. Clip onto shoot tip to help weigh young shoots down. Add additional clothespins if necessary.
- Re-pinch the shoot tips out of upper scaffolds in young apples in Vertical Ax systems. In freestanding young apples, use elastics on young scaffold shoots in the upper part of the tree to train down.
- Leader management in young apples: Rip-out upright, competing one and two year old shoots in the tops of young apple trees; no need to use pruners, just 'rip-em out' with a fast, downward motion. It's fast and effective for maintaining dominance of the leader and keeping the top of tree calm. (As opposed to a more invigorating, dormant pruning cut.) Use MaxTapner to keep the leader tied to the stake. Leaders flopping in the wind will produce ethylene and will stop growing.
- Prune sweet cherries immediately after harvest. This will help prevent the development of **bacterial canker** (*Pseudomonas sp.*), which actively spreads to pruning cuts made during the winter or early spring. (For more information, see 'Bacterial Canker of Sweet Cherry, OMAFRA Facts Sheet 88-0886, <http://www.gov.on.ca/OMAFRA/english/crops/facts/88-086.htm>.)
- Cherry: Use stub cuts and prune the leader now, which is effective at minimizing re-growth in the top of sweet cherries.
- Lighten up those peaches. Summer pruning out vigorous, upright shoots in the interior of the tree – especially in young trees – will create a better light environment inside the tree, and promote growth of more vigorous, fruitful shoots. Also, shading is a cause of twig die-back, hence a source of disease infection down the road. Prune all the way to the scaffold, do not leave stubs and do not make heading cuts. Summer pruning peach should be completed 2 weeks before anticipated harvest. Do not summer prune after August 20.
- Apple: Continue foliar calcium sprays. Calcium chloride is the cheapest form of calcium. Apply at a rate of 2.5 to 3 lbs. per 100 gallons dilute. Avoid concentrate spraying and application during very hot weather as foliar injury is more likely, and do not mix with Solubor.
- Scout blocks of young apple trees on dwarf rootstocks for **dogwood borer** injury. Look for frass or gooey exudate at the base of trees, particularly in burr-knots. Macoun and Honeycrisp on M.26 or M.9 seem to be particularly attractive to borers. If infested, a Lorsban trunk spray is indicated. □

Strawberry Update

Peter Probasco, Agricultural Agent

It is time to order strawberry tips and plugs for this fall. Chandler won our variety trial again this year and is still the best variety to plant for New Jersey. "Ovation" is the new variety we are recommending if you want a later variety and want to extend your picking season one week. Sweet Charlie is no longer recommended for New Jersey because of the poor yields. Wind protection is still a very important factor when selecting fields and can greatly increase the quality and yields of your strawberries. Renovated fields need to be sprayed for **leaf spot** diseases and should be irrigated during dry periods. □

INKING FROM PAGE 1

label information should not be a substitute for these suggestions.

d) Harvest and treat fruit gently. Soft clean picking containers are suggested. Clean plastic bins are preferred. Avoid long bumpy rides and use "shock proof" equipment. Seriously consider frequent grading and or surfacing rough roads. It is well known that brushing or fuzz removal hastens inking and skin discoloration. If you've done everything else and you can't relate a cause, consider not defuzzing your fruit. Make sure your brusher is not running too fast and try to test all areas of your packing and grading line to avoid abrasions. Box filler can also be a problem if the drop is too high. Make sure the water pressure is not too great in your hydrocooler and hydrobrusher.

It is always a good management practice at the beginning of the season to harvest grade, pack and store a few boxes of fruit at room temperature for at least 48 hours to observe for inking or skin discoloration. If it is a problem, go back through your system of management and pull out samples at various steps in the process to see if you can identify a relationship to inking. Later in the season storing spot samples with new cultivars will help you monitor the problem, even though your customers will let you know. □

Summer Prune Now for Color on Apples and Peaches

Jon Clements, Extension Tree Fruit Specialist, UMass and Win Cowgill, County Agent

From now until August 15 is a good time to summer prune varieties such as McIntosh, Cortland, Gala and Jonagold strains (and Golden Delicious) to improve fruit color. Color pigments are now being accumulated in the fruit skin but waiting for cooler weather to develop into the red color characteristic of fall apples. But the fruit must be exposed to light for the pigment to be stored and expressed, hence the value of summer pruning now to remove shading in the tree canopy. Vigorous, upright, current season's shoot growth ('suckers' or 'water sprouts') are prime candidates for removal by summer pruning. Also, undesirable uprights just above fruiting clusters can be headed-back to the cluster, and upturned branches can be thinned to a weak lateral branch. Summer pruning now may also help improve the calcium content of fruit¹ (but don't rely on it, keep that calcium foliar spray program going). Keep in mind summer pruning on apple can negatively impact fruit size, can result in sunburn if hot, sunny weather follows, and when done too close to harvest (less than three weeks) it can result in premature fruit drop. But usually the benefits of summer pruning in improving fruit quality far outweigh the potential drawbacks.

On Super Spindle apple plantings it is always time to remove heavy wood with the 2-1 rule and keep the leader singled out.

On peach, the last summer pruning on one and two year old peach trees to shape them, should be completed within the next week to ten days. On bearing peach trees, removing the upright vigorous sucker growth in the center of the tree will enhance color, but must be completed two weeks prior to harvest to prevent reduction in soluble solids.

Note: summer pruning of apple and peach should be completed by August 20. Pruning after this date can predispose the trees to winter injury.

References: ¹Training and Pruning Apple and Pear Trees, Forshey, Elfving, and Stebbins 1992, ASHS, ISBN 0-9615027-1-1. □

Calendar of Events

July 23, 2003, Wednesday – Wine Microbiology Meeting with Lisa Van de Water will be held at the Farm and Home Center in Lancaster, PA at 8:30 a.m. to 5:00 p.m. Contact: Mark Chien, Wine Grape Agent, Penn State University 717-394-6851.

July 24, 25, 26, 27, 2003, Thursday – Sunday – New Jersey Peach Festival and Gloucester County 4-H Fair will be held at the 4-H Fairgrounds, Rte 77, Mullica Hill, NJ. The complete program for the Fair is now on the website at <http://gloucester.rce.rutgers.edu/>.

August 20 – August 22, 2003 – North American Strawberry Growers Association Summer Tour, Park Inn & Suites, Brandywine Valley, PA and tours S. Jersey and S. PA. Contact: NASGA Business Office at 526 Brittany Drive, State College, PA 16803, phone: 814-238-3364, fax: 814-238-7051 or email: info@NASGA.org or www.NASGA.org.

September 3, 2003 – Fruit Variety Showcase, Gloucester County. Contact: Jerome L. Frecon at 856-307-6450 ext 1.

Plum Pox Survey 2003

Carl P. Schulze Jr., Director, Division of Plant Industry, New Jersey Department of Agriculture

Weekly Sampling Results, Week Ending – July 18, 2003, STATE: New Jersey

Date Sampling Began	Date Sampling Completed	Lab Doing the Analysis	Cumulative Total of Field Samples Collected*	Cumulative Total of Lab Samples Processed*	Sampling Results
5/21/03		NJDA	8,544	16,644 ¹	all negative
			9,735	38,940 ²	all negative
			18,279	55,584	

¹ = 1 quadrant field sample contains 2 lab samples per USDA sampling protocol - national survey.

² = 1 quadrant field sample contains 4 lab samples per USDA sampling protocol - high intensity survey.

To date, a total of 478 blocks of commercial fruit trees have been sampled.

Submitted by Jerome L. Frecon, Agricultural Agent. □

Fruit IPM

Dean Polk, Fruit IPM Agent

Peach

✓ **Oriental Fruit Moth (OFM):** Trap counts are low over most of the state. We are between 2nd and 3rd generations, so no treatments need to be applied at this time. According to the Penn State model, the first of 3 sprays for the 3rd brood will be due at 10% egg hatch. This should be around 7/26 in southern counties, and around 7/29 in central counties – more for northern counties as we get closer to the timing.

✓ **Tarnished Plant Bug (TPB) and Other Catfacing Insects:** Weedy orchards continue to have higher TPB counts than orchards with sod aisles. While last week we were reporting that more nymphs than adults were present, we are seeing more adults this week. This means that the bulk of the population (if present) can now move into the tree canopy, especially when the ground cover is disturbed. At this point, do not mow a weedy orchard without having a recent insecticide application. Well maintained sod ground covers continue to have the fewest catfacing insects.

✓ **Tufted Apple Budmoth (TABM):** While there are a few TABM larvae being seen, these are the 1st brood stragglers that got through the June/early July spray program. For the most part there is nothing to do for this pest, other than wait for the second brood timing. This should occur around August 7 to 15 in southern counties. So far there is very little TABM injury on early fruit.

Apple

✓ **Tufted Apple Budmoth (TABM):** Please see peach section above.

✓ **Codling Moth (CM):** While trap counts are low on most farms, degree-day accumulations dictate that if spraying for CM, the timing should be around 7/19 in southern counties, 7/23 in central counties, and around 7/29 in northern counties. If using full cover treatments, a second spray would be due about 10 days later. These timings are for standard OP's, Carbamates, pyrethroids, and Avaunt. Sprays should be 2-3 days earlier if using Assail, Confirm, or Intrepid.

✓ **European Red Mite (ERM) and other mites:** Mites are increasing on some farms, and were seen at up to 10 mites per leaf on 1 farm. Few predators are present at significant levels. Those predators that are present are various species of predatory mites, and not our normal small black lady beetle, *Stethorus punctum*. One significant point in all this is that you should not only be careful

with what kind of insecticides you use (no pyrethroids or Lannate), but also be aware of what kind of fungicides you use. Predatory mites can be sensitive to Benlate and Topsin. While we are no longer using Benlate, Topsin can be a major part of the summer disease program at this time of year. Therefore:

✓ **Summer Disease:** Our normal approach is to treat with Captan/Topsin combinations. This is one of the most effective programs we have, and this could be an on year for **sooty blotch** and **fly speck**. If you have a mite population and ANY predatory mites, consider using Captan/Ziram combinations for 1 or 2 treatments.

✓ **Stink Bugs:** Recent damage from stink bugs was seen on one farm in the southern part of the state. Stink bug injury can appear like corking, but... 1) It is a little too early for corking to appear at this time, and 2) Upon close examination with a hand lens, one may see a small entry point where the insect mouthparts penetrated the fruit. Be careful when cutting down neighboring weeds, or if nearby hay fields are cut, or with neighboring soybean fields.

Blueberry

✓ **Aphids:** Aphid levels are close to what they were last week (present in about 60% of samples). The population density increased slightly since last week, with aphids infesting over 10% of growing shoots in about 25% of our samples.

✓ **Redbanded Leafroller and Other Leps.:** Some larvae are present and showing up on the packing line. On most farms this should still not be a spray target. However, some locations especially around Hammonton have trap counts that reach 140 to 180 moths per trap. This signifies a healthy population. If *small* larvae are present combined with high trap counts, then treatment may be justified.

✓ **Anthracnose :** The presence of anthracnose increased this past week in field counts. Past experience has shown that whatever we see in field counts can easily increase 2 to 3 times when the berries run across the belt. After packing and kept at room temperature, the presence of anthracnose can increase dramatically in the package. Field sampling shows a doubling in the disease presence since last week (positive in 8% of our samples). Therefore, continued treatments are justified on later varieties.

SEE INSECT TRAP CAPTURES ON PAGE 6

Insect Trap Captures

Tree Fruit - Southern Counties

Week Ending	LPTB	PTB	OFM	TABM-P	AM	CM	DWB	OFM-ASTLM	TABM
6/6	35		4	32		2		12 13	16
6/13	47	5	3	26		4		3 325	18
6/20	37	5	3	27		8		7 1952	21
6/27	49	3	6	16		2	18	8 2268	15
7/4	48	9	7	25	0	2	18	11 1974	18
7/11	34	6	7	13	0	1	67	7 2784	10
7/18	38	11	10	2	0	0.5	7	8 1370	1

Northern Counties

Week Ending	LPTB	PTB	OFM	TABM-P	AM	CM	DWB	OFM-ASTLM	TABM
6/6			8.2	6.4		5.6		7.0 6.0	
6/13	58.5		12.6	15.0		7.3		10.0 11.4	
6/20	31		9	24.6		12.1		326.7 16.8	
6/27	4.9	0.0	6.4	19.1		6.0	8.0	932.5 17.3	
7/4	2.0	0.5	17.2	21.0		11.6	15.5	1526.4 18.7	
7/11	2.7	0.0	12.1	21.1		3.5	30.5	1130.0 15.4	
7/18	1.5	0.3	7.0	9.0		2.0	12.5	453.6 8.9	

Blueberry - Atlantic County

Week Ending	CBFW	RBLR	OBLR	SNLH	OB	BBM
6/6	0.08	1.0				
6/13	1.65	2.13				
6/20	0.5	34.5		0.02	14	0
6/27	.13	115.8		.15	165	.01
7/4	0.98	130.3		0.31	1780	0
7/11	.05	89.7		.28	2952	.24
7/18	.02	46.4		0.23	2265	0.31

Burlington County

Week Ending	CBFW	RBLR	OBLR	SNLH	OB	BBM
6/6	2.6	0.3				
6/13	3.36	0.0				
6/20	4.7	0.7		0	0	0
6/27	1.8	17.4		3.3	9.1	.12
7/4	0.8	56.6		5.2	377.5	0.13
7/11	0.0	42.5		.86	1244	.24
7/18	1.5	11.3		2.13	855.7	0.14

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