

PLANT & PEST ADVISORY

FRUIT EDITION \$1.50

AUGUST 30, 2005



INSIDE

Apple Maturity Update for North-Central New Jersey 1

Getting the Most from the "Old" Stop-Drop: NAA 2

Fruit IPM 4

National Farm Safety & Health Week 5

Web Soil Survey 6

Annual Farm Safety Twilight Meeting 6

Calendar of Events 6

Apple Maturity Update for North-Central New Jersey

Win Cowgill, Agricultural Agent

Growers should be observant as we approach Gala and McIntosh harvest in North-Central Jersey. Macs have colored some with several nights last week in the 50's and 60's. Warm night temperatures the last several days with warm tropical wet air have slowed color development and will hasten maturity.

Gala

Background color has historically been one of the best indicators of maturity for Gala. Fresh market Galas should be harvested when the background color is turning from a yellow to a cream color. SI index with the Gala Starch chart can be a guideline as well.

Southern New Jersey Gala harvest is about complete; South Jersey growers began last weekend, with color hard to come by according to several growers. Central Jersey spot harvesting of Gala will begin this week on early maturing strains. The high colored strains are showing good color. Size has been hard to come by but for those with irrigation slow and steady irrigation the last 1-2 weeks has increased size. Care should be given to not over irrigate Galas, or cracking can result. A concern about Hurricane Katrina was that too much rain would happen at one time which is still a possibility.

I like to harvest Gala at above 12% Brix and over 16 lbs pressure.

North Jersey growers will begin this week to spot pick Gala cultivars shortly as well.

Some strains in northern NJ are already showing good red color development including Buckeye, Stark Galaxy, and Royal. Sugar levels are present with Brix development at 10-12% but size can improve some yet. Multiple pickings must be used on Gala to get consistent fruit quality and size the first pick is usually a skim of the ripest fruit.

Morris- Harding Twp	Date	Retain	Pressure	Brix	Starch
Fulford Gala	8/25	yes	18	13%	6.8
Morris- Chester	Date	Retain	Pressure	Brix	Starch
Fulford Gala	8/25	no	17	12.5%	6
Hunterdon- Snyder	Date	Retain	Pressure	Brix	Starch
Buckeye Gala	8/30	yes	22	12.1%	2.6
Stark Galaxy		no	17	10.2	5.4

SEE APPLE MATURITY ON PAGE 2

Getting the Most from the “Old” Stop-Drop: NAA

Jim Schupp, PhD., Specialist in Pomology, Penn State University (Former Specialist in Pomology, NYAES, Geneva, NY)

Reprinted from *Scaffolds Fruit Journal*, August 18, 2003 Volume 12 No. 23, Cornell Cooperative Extension, <http://www.nysaes.cornell.edu/ent/scaffolds/>

The use of NAA (Fruitone N, K-Salt Fruit Fix) for control of preharvest drop has been overshadowed in recent years by that of ReTain; however, ReTain use must be planned weeks prior to harvest. With the effective application time so close to the onset of drop, NAA offers a “rescue” treatment, should the threat of preharvest drop be increased due to unforeseen circumstances. Examples of such situations include unavoidable delays in harvest due to bad weather or labor issues, slow red color development, and overlapping harvest schedules of varieties with similar maturity windows, such as McIntosh with Macoun, or Empire with Delicious. While it is not the purpose of this article either to promote or condemn the use of ethephon (Ethrel, Ethephon II) to promote fruit coloring, those growers using one of these products also need to use NAA to prevent excessive fruit drop resulting from accelerated fruit maturation. The following tips and reminders are offered to help growers brush up on using NAA to best effect.

Timing NAA stop-drop sprays is a little like a game of chicken, requiring both steely nerves and a good understanding of your opponent. The label says to apply NAA when the first sound fruit begin to drop. A single spray of 10–20 ppm NAA offers drop control for about seven days from the date of application, but it takes two or three days to “kick in”. Apply NAA three days too early and the window of effective drop control is about halved. Apply three days too late and perhaps a quarter of the crop will be on the ground before the NAA takes effect!

SEE NAA ON PAGE 3

McIntosh

Growers in Central and North Jersey should watch their Mac’s closely for maturity development and drop. It is too late to treat Macintosh blocks with Retain. Applications of NAA can be used instead for stop drop. Many blocks in North Jersey have colored nicely; sugars are developing ranging between 9-12 Brix. Central Jersey Mac harvest may begin with some spot picking this week. Hudson Valley, NY is picking Macs heavily as well.

Hunterdon-Snyder Farm	Date	Retain	Pressure	Brix	Starch-Iodine
Macintosh-Rogers Red	8/30	Yes	17.2	9.4%	2.7
Macintosh-LindaMac	8/30	No	17.6	10.3	2.8
Morris-Harding Twp.	Date	Retain	Pressure	Brix	Starch-Iodine
Macintosh-RedMax	8/25	Yes	15.7	12	6.2

Honeycrisp

Honeycrisp is beginning to develop red color at the Snyder farm with temperatures in the fifties and sixties last week. It maybe a good color year for New Jersey if we get some more cool nights.

Note: Growers should note that Honeycrisp can drop severely and the tendency is to pick it early with red color development. If picked prematurely it may not develop the full array of flavor that this apple is noted for. It will then be hard to demand the premium price it well deserves. A lousy eating Honeycrisp is a lousy apple.

Morris-Harding Twp.	Date	Retain	Pressure	Brix	Starch-Iodine
Honeycrisp	8/25	Yes	21	12.2	1.4
Hunterdon-Snyder Farm	Date	Retain	Pressure	Brix	Starch-Iodine
Honeycrisp	8/30	Yes	15.5	12	4.6

Cortland

Cortland is an apple that has increased in popularity with newer strains being highly colored. Cortland is usually picked one week after Macs (remember Macs can be picked over 3 weeks if stop drop is used, normally around mid September at the Rutgers Snyder farm. They do not starch test well but SI testing can be used as guideline, target a starch of 5-6.

Hunterdon-Pittstown	Date	Retain	Pressure	Brix	Starch-Iodine
Cortland-RedCort	8/30	No	20	10	1

Retain®: Reminder Retain® should be applied 28 days before anticipated harvest on alter varieties, with a 21 day Pre Harvest Interval (PHI). If blocks were not treated with Retain®, it is not too late this season to apply for late September apples like Red Delicious and Empire, and too early for October maturing apples such as Suncrips, Fuji, Stayman. ☐

Stem loosening coincides with the climacteric rise in ethylene that signals fruit ripening. Unlike ReTain, which delays drop by delaying fruit maturation, NAA stops drop by delaying stem loosening. Predictive degree-day models and the pattern of starch disappearance measured by the starch index test do not provide a precise guide to timing NAA stop-drop sprays. These techniques can indicate whether the threat of drop is earlier or later than normal, but more direct monitoring is required for the actual timing of the sprays.

Varieties such as McIntosh that are highly susceptible to preharvest drop require careful monitoring to determine when fruit drop is beginning. Limb tapping should be used to determine the onset of drop as fruit near maturity. Bump several scaffold limbs of three or four inches in diameter throughout the block on a daily basis. Use the palm of your hand with a short firm stroke, striking the limb at its mid-point (just like golf, this skill improves with practice and experience). If zero to one apples per limb drop on average, it's too soon to apply NAA. If the average is about two, check again later the same day or the next morning. When several apples drop in response to limb bumping, its time to harvest within two days or apply NAA.

When NAA is used to control drop on ethephon-treated trees, the two may be tank-mixed if the fruit is to be harvested within seven days. If the fruit is to be left on the tree longer than seven days after the ethephon, then NAA should be applied three days after the ethephon.

Rates of 10–20 ppm NAA are usually needed to be an effective stop-drop. To obtain the maximum drop control, use a split application of 10 ppm in the first spray, followed by a second spray of 10 ppm five days after the first. Split applications can provide drop control for about 12 days from the date of the first application.

Research in Virginia showed that the deleterious effects of NAA sprays on fruit maturity and fruit softening were minimized in Red Delicious by making repeated applications of 5 ppm NAA at four weekly intervals prior to harvest. This “pre-loading” technique has recently been included as an application option in the Fruitone N label. I have not repeated this research on Delicious, but using this technique on McIntosh resulted in more advanced ripening and softening, not less! I do not recommend NAA pre-loading for McIntosh and other early season, high-ethylene varieties. I suggest that growers use caution when trying pre-loading on later varieties. Use it only on a trial basis until more is known about how varieties other than Delicious grown in different climates will respond.

As with thinning sprays, stop-drop sprays of NAA work best when applied with good coverage and plenty of water. Concentrating beyond 4X (less than 75 gallons of water per acre for 300 gallon TRV trees) may diminish the effectiveness. Use a non-ionic or organosilicone surfactant to enhance uptake.

When used as a stop-drop, NAA may advance ripening, especially at the maximum label rate of 20 ppm. The primary impact of his advance in maturity is reduced storage potential of the fruit, particularly in the loss of firmness. This effect is not consistent from year to year or block to block. The question then arises whether NAA-treated fruit has potential for CA storage or treatment with SmartFresh (1-MCP).

(Technical Editor's Note: this loss of firmness is not an issue on PYO blocks or fruit held for short term storage.)

Perhaps the simplest way to answer the question with regard to CA is to remember the adage “garbage in, garbage out”. If the fruit was left on the tree to the bitter end of the drop control, is measurably softer than previously harvested fruit, and has elevated starch index values, then it should be marketed in the short term. On the other hand, if the fruit was harvested within a week after treatment and has good firmness and starch values for CA storage for the variety (e.g., McIntosh with 14 lb pressure and a Cornell chart starch index rating of 6 or lower), there is little reason to expect it to perform differently than similar fruit that received no NAA.

The question of whether NAA stop-drop sprays have advanced fruit maturity may be most critical when using SmartFresh on McIntosh, where the maturity of the fruit is an overwhelming influence on whether the fruit will respond to 1-MCP. Quoting Dr. Chris Watkins in the Proceedings of the 2003 Apple Storage Workshop: “We do not have any data yet, but we assume that induced ethylene production that results from use of NAA will deleteriously affect fruit responses to 1-MCP. If you use stickers [NAA stop-drop], your storage operator should be informed.”

Finally, a comment about use of NAA on trees previously treated with ReTain. *The use of both stop-drops at the respective correct times results in drop control that is superior to that obtained by using either one alone.* Fruit treated in this manner, then left for an extended time on the tree, often have limited storage potential (see above); however, this combination can be an effective way of getting the ultimate in drop control. This drop control comes at a high price *and should therefore only be used on high value fruit with little or no storage period, such as for a few rows of trees held for late picking in PYO blocks.*

Submitted by Win Cowgill, Agricultural Agent. □

Fruit IPM

Dean Polk, Fruit IPM Agent and David Schmitt and Eugene Rizio, Program Associates, Tree Fruit IPM

Peach

✓ **Tufted Apple Budmoth (TABM):** All spray timings are complete.

✓ **Oriental Fruit Moth (OFM):** Trap counts have risen on some farms that missed the last timed insecticide application. There has been some fruit injury noted. Maintain insecticide coverage for OFM where flagging or fruit injury is noted.

Apple

✓ **Tufted Apple Budmoth (TABM):** See Peach section above.

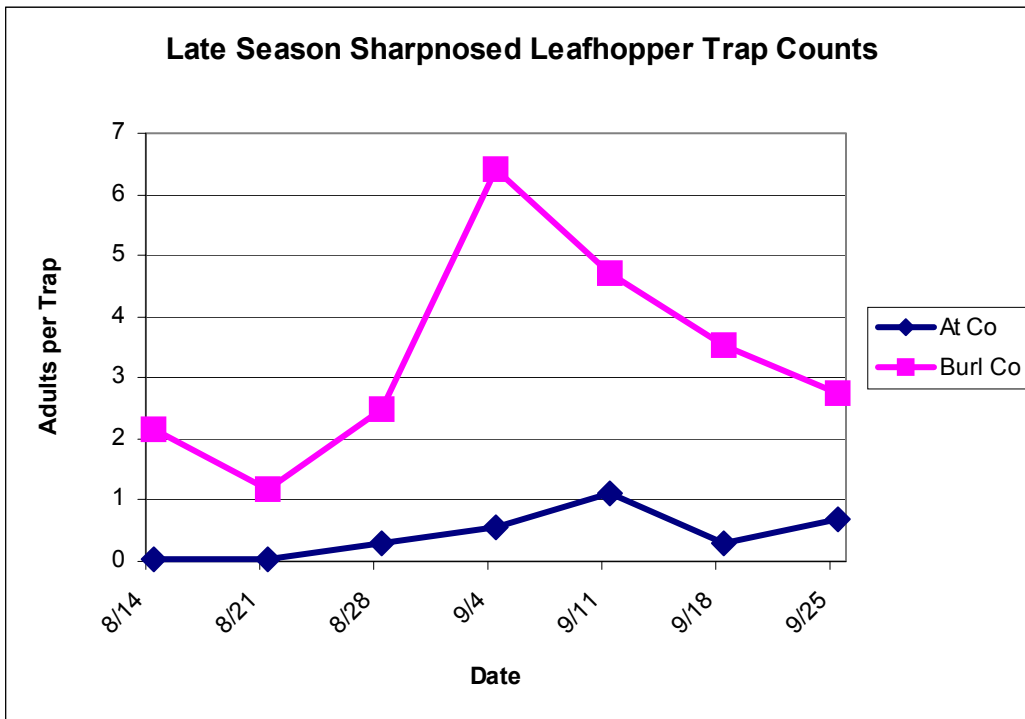
✓ **Oriental Fruit Moth (OFM):** Pressure building in peach blocks will also pressure neighboring apple blocks. Maintain coverage with an effective insecticide.

✓ **Codling Moth (CM):** Some farms are still experiencing very high pressure as indicated by high trap counts. If your farm has trap counts that are significantly over 5 moths per trap, then additional sprays may be needed, especially on later varieties. Continued late season pressure from codling moth may also be due in part to insecticide tolerance or resistance. Do not repeat the use of the same chemistries, i.e. do not make repeated use of OP's, carbamates, or even newer materials in consecutive sprays.

Blueberry

✓ **Sharpnosed Leafhopper:** As reported in the last few newsletters, this is the one pest that growers still need to be aware of. If 2nd generation treatments have not yet been applied, then they should be completed as soon as possible in Stunt prone areas, especially in Burlington County. Some locations in that county have up to 30 adults per trap. Trap counts have peaked in both Atlantic and Burlington Counties, but leafhoppers may need a second treatment around problematic areas in Burlington County. Please see graph below.

SEE INSECT TRAP COUNTS ON PAGE 5



National Farm Safety & Health Week

National Farm Safety & Health Week this year is September 18th to 24th; this year's theme is "Harvesting Safety and Health". In New Jersey, Rutgers Cooperative Research and Extension (RCRE) serves the farm community with outreach events, training, publications and media, and web resources in safety and worker protection; see the RCRE Farm Safety webpages at <http://www.rce.rutgers.edu/farmsafety/>.

In 1942, President Franklin D. Roosevelt declared the third complete week in September as National Farm Safety and Health Week. This year's event marks the 62nd time a United States President has issued a Proclamation. This year's theme is 'Harvesting Safety & Health'

Public Helping Your Fellow Highway Users See You!

Sam Steel, Ed. D., Agricultural Safety Specialist, National Safety Council

Harvest season always comes with a safety message about important precautions on our rural highways. It's the season when farm machinery and other vehicles use the same two-lane highways. It's also the season when collisions between farm equipment and other vehicles occur more frequently.

These collisions are often the result of the speed differential between farm equipment and cars and trucks.

On any rural highway, the closure distance and time between vehicles operating at 55 miles per hour and a farm tractor pulling grain wagons operating at 15 miles per hour can be very short. Many investigations of these incidents have shown that the driver did not allow distance between their vehicle and the farm equipment in order to react quickly enough to avoid the collision.

There are several important ways in which these incidents can be avoided. Slow-moving vehicle (SMV) emblems should be prominently displayed on the back of tractors, wagons and combines using rural highways. They should not be faded or dirty and need to be placed in the line of the sight of vehicle operators. Most farm tractors and combines are equipped with lighting and marking that will make the equipment more visible. It should be used whenever the equipment is on the highway and must be maintained in good working condition in order to be effective.

Vehicle operators should be especially wary of farm equipment that they could encounter at any time. Lower natural light conditions, especially at dusk, are critical times on rural highways. When encountering farm equipment, vehicle operators should be prepared to stop to avoid a rear-end collision or to avoid a piece of machinery that turns left in front of them into a field or farmstead.

With a little extra patience, careful driving habits, and the use of emergency marking and lighting, many of the collisions between farm machinery and vehicles could be prevented during this fall's corn and soybean harvest.

SEE FARM SAFETY & HEALTH ON PAGE 6

Insect Trap Counts

Tree Fruit Southern Counties

Week ending	STLM	TABM-A	CM	AM	OFM-A	DWB	OFM-P	TABM-P	LPTB	PTB
7/15/05	235	1	0		9	31	3	1	54	4
7/22/05	237	1	1		8	14	4	4	63	6
7/29/05	584	3	1		10	18	5	11	90	4
8/05/05	583	5	3		6	0	7	11	81	18
8/12/05	725	5	1		10	95	6	13	79	11
8/20/05	418	8	4		12	34	14	11	56	8
8/26/05	117	5	2		14	137	17	5	55	4

Northern Counties

Week ending	STLM	TABM-A	CM	AM	OFM-A	DWB	OFM-P	TABM-P
7/15/05	90	3	0.5			19	3	3
7/22/05	67	3	2	0	0	17	5	5
7/29/05	185	2	3	0		25	5	2
8/05/05	180	2	3	0	0	5	4	4
8/12/05	90	6	2	0	0	9	4	3
8/20/05	118	5	2	0	0	8	4	8
8/26/05	347	5	1	0	6	6	6	3

Key: STLM = Spotted Tentiform Leafminer, TABM = Tufted Apple Budmoth (A – apple, P – Peach), CM = Codling Moth, AM = Apple Maggot, OFM = Oriental Fruit Moth (A – apple, P – Peach), LPTB = Lesser Peachtree Borer, PTB = Peachtree Borer

Web Soil Survey

Agriculture Secretary Mike Johanns announced the launch of a USDA Web Soil Survey site that provides public access to the national soils information system. On-line soil information is now available at: <http://soils.usda.gov/survey>. Select Web soil survey for this new window to soil maps and reports.

Submitted by Joseph Heckman, Specialist in Soil Fertility. □

FARM SAFETY AND HEALTH FROM PAGE 5

Electrocution Can Be a Serious Problem on U.S. Farms

Sam Steel, Ed. D., Agricultural Safety Specialist, National Safety Council

This summer's tragic incident during a national scouting event in Virginia reminds us that electrocution incidents can happen any time in a seemingly safe and tranquil setting. Farms and ranches are no exception! The simple movement of a portable grain auger from one bin to another can have tragic results if the individuals involved are not extremely careful. Tractors with large cabs and antennas and oversized grain wagons can also result in preventable electrocution incidents.

Most farmsteads could use a very careful overhead electrical line visual inspection. Service lines may no longer meet the proper height codes because of age and/or damage to poles and pole guy wires. The sag may have increased over the years, while the height of the machinery being used today may be much higher. Don't be fooled by those birds perching on the overhead lines, or the thought that insulation on the lines could protect you. Always assume that the lines have no insulation and that they may not be as high as they look. Never undertake the height measurement of the lines without the on-site help of utility company officials. During normal farming operations, maintain at least a 10 ft. margin of safety from the lines. When in doubt, don't operate taller equipment, including tractors and combines with antennas, tractors with their front buckets raised, and large, fold-up cultivators under electrical service lines on your farmstead. Make sure that all family members and workers on your farm are aware of the electrocution dangers.

Where possible, install electrical safety warning signage to prevent equipment and personnel contact with power lines. This will be beneficial to your suppliers who may be making deliveries to your farm. Always keep in mind this message from Iowa State University Extension, "Electricity doesn't allow mistakes. And neither should you." □

Annual Farm Safety Twilight Meeting

The 4th Annual Farm Safety Twilight Meeting will be held hosted by Paul and Barbara Shinn at the Toyland Farm (610 Georgetown-Juliustown Road, Jobstown, NJ) on Wednesday, September 21, 2005, from 6 to 9 p.m.

This meeting is intended for the entire farm family since safety is everyone's concern.

Attendees will hear talks and see demonstrations on subjects such as equipment safety, fire prevention, skin/sun protection, chainsaw safety, and many other topics. We will also have a special breakout session for the children. A special new feature for this year's meeting is a "Personal Protection Equipment Fashion Show", to demonstrate the latest gear for pesticide applicators. The meeting will be **free of charge** to farm families and will include **pesticide credits, a pig roast, spectacular home made desserts, take home safety items**, and much more.

Registration is required by September 14, 2005. Please call Rutgers Cooperative Research & Extension of Burlington County at (609) 265-5050 to reserve your seat today! □

Calendar of Events


September 7, 2005, 5:30 – 8:30 pm - Sustainable Horticultural Research Twilight Meeting, Rutgers Snyder Research Farm, 140 Locust Grove Rd., Pittstown, NJ. Contact: Diana Boesch at RCRE of Hunterdon County at boesch@aesop.rutgers.edu or 908-788-1339 by September 5.

September 7, 2005 – 2005 Crush Workshop, Crossing Vineyards & Winery, 1853 Wrightstown Rd., Washington Crossing, PA. Contact: send check or money order for \$45 payable to "PSCE Program Fund" or credit card number with name on card and expiration date to: 2005 Crush Workshop, Attn. Stephen Menke, Enology Educator, Adams County Extension Office, 670 Old Harrisburg Road, Gettysburg, PA 17325 by September 2.

September 21, 2005, 6:00 – 9:00 pm – Annual Farm Safety Twilight Meeting, Toyland Farm, 610 Georgetown-Juliustown Rd., Jobstown, NJ. Contact: RCRE of Burlington County at 609-265-5050 by September 14.

FIRST CLASS
POSTAGE PAID
PERMIT #576
MILLTOWN, NJ 08850

NJ AGRICULTURAL EXPERIMENT STATION
RUTGERS
COOPERATIVE RESEARCH & EXTENSION
Plant & Pest Advisory
Rutgers' Cook College
18 College Farm Road
New Brunswick, N.J. 08901-8551



PLANT & PEST ADVISORY

FRUIT EDITION - CONTRIBUTORS

Rutgers Cooperative Extension Specialists and Program Associate

George Hamilton, Ph.D., Pest Management
Norman Lalancette, Ph.D., Plant Pathology
Bradley A. Majek, Ph.D., Weed Science
Peter W. Shearer, Ph.D., Entomology
Gail Lokaj, Program Associate in Pomology

NJAES/Cook College

Joseph Goffreda, Ph.D., Breeding

Rutgers Cooperative Extension Agricultural Agents and Program Associates

Atlantic County, Gary C. Pavlis, Ph.D. (609-625-0056)
Gloucester County, Jerome L. Frecon (856-307-6450)
Hunterdon County, Winfred P. Cowgill, Jr. (908-788-1338)
Morris County, Peter J. Nitzsche (973-285-8300)
Passaic, Elaine F. Barbour, Agric. Assistant (973-305-5740)
Warren County, William H. Tietjen (908-475-6505)
Fruit IPM, Dean Polk (609-758-7311)
Meredith Compton, Program Associate (908-788-1338)
Gene Rizio, Program Associate (856-566-2900)
David Schmitt, Program Associate (856-307-6450)

Newsletter Production

Jack Rabin, Associate Director for Farm Services, NJAES
Cindy Rovins, Agricultural Communications Editor

For back issues, visit our web site at: www.rce.rutgers.edu/pubs/plantandpestadvisory.

Pesticide User Responsibility: Use pesticides safely and follow instructions on labels. The pesticide user is responsible for proper use, storage and disposal, residues on crops, and damage caused by drift. For specific labels, special local-needs label 24(c) registration, or section 18 exemption, contact RCRE in your County.

Use of Trade Names: No discrimination or endorsement is intended in the use of trade names in this publication. In some instances a compound may be sold under different trade names and may vary as to label clearances.

Reproduction of Articles: RCRE invites reproduction of individual articles, source cited with complete article name, author name, followed by Rutgers Cooperative Research & Extension, Plant & Pest Advisory Newsletter.