

PLANT & PEST ADVISORY

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INSIDE

Weather and Apple Thinning 2003	1
Apple Rust Diseases	2
Fruit IPM	3
Addition to Cooperative Marketing Associations in NJ ..	4
Calendar of Events	4
Cutting Down Trees Safely	5
Frost Control and Pest Management Focus of Meeting in Franklinville	5
USDA Reminder of Sign-Up Dates for Farm and Conservation Programs	6

Weather and Apple Thinning in 2003

Win Cowgill, Agricultural Agent

This spring's weather is not cooperating for apple growers in New Jersey and areas north. Cold and cloudy weather is affecting bloom, pollination and chemical thinning decisions in most parts of the state.

Of course these climatic conditions cannot be controlled but they can greatly affect the strength of fruit set and the effectiveness of chemical thinning materials. Very cool temperatures in Northern New Jersey are slowing apple fruit development, with petal fall on Macs in Hunterdon County occurring approximately May 11, Gala cv. BC2 and Braeburns are just in full bloom as of today, May 13. Temperatures have not climbed out of the 60's for the past week. We have had night temperatures in the 40's and 50's with many cloudy days or minimal sunshine, all slowing fruit development.

As a result we have also had less than optimal pollination conditions, especially where not enough honeybee colonies have been brought in or are in place. The Verona Mite and winter kill this winter have eliminated many of the wild honeybees and weakened domestic hives as well.

Cloudy conditions cause shading and reduce carbohydrate levels in young fruit, causing poor retention. The temperature during a thinner application and the temperature after the application are critical to successful thinning. This is true for all the thinning materials in our toolbox. For thinners to work they must be absorbed. Absorption increases as the temperature increases. Forecasts are for temperatures to be in the mid to low 60's all week. *Temperatures below 65°F are considered too cold to apply thinners.* Under cold temperatures absorption is significantly reduced and poor or no thinning will result. All thinners work well in the optimum range of 70-80°F.

Applying thinners just before, during, or after a three-day cloudy period, especially when temperatures are above 65-70°F will likely increase the thinning response. This cloudy weather in a warming trend can enhance the thinning response. Warmer temperatures and slow drying times enhance thinner absorption. Dew or light rain following treatment may redistribute the chemical and cause additional uptake and more thinning response to occur. This is especially true with Sevin®.

What does the above mean to you, the grower? It means that since many factors affect thinning, good records and daily observation are

SEE APPLE THINNING ON PAGE 2

APPLE THINNING FROM PAGE 1

essential. Rates, materials and timing must be adjusted based on the season's current weather conditions.

My suggestion is to watch for the next warming trend and apply thinner applications at that time, even if it is at the 12-15MM size. Thinners applied at the beginning of a 3 day warming trend will be much more active and predictable. Last season the most effective timing for thinning applications was 15MM in Western New York. This was the only time the temperatures rose into the 70's during the post bloom period.

We have strongly advocated the multiple thinner application approach beginning at petal fall, but we must balance it with how the materials respond to temperatures.

Late Window Thinning

We also have **Ethephon**, which has been effective for many apple growers as a late rescue treatment for thinning in the 15-25MM window. Ethephon is marketed by Micro Flo Company as Ethephon 2 and also by Bayer CropScience as Ethrel® brand Ethephon. Ethephon is a synthesized natural hormone of apples that has many uses including apple thinning.

Ethephon is rate dependant and sensitive to temperature at both the time of application and for several days following application. The rate depends on both the timing of the application and the variety. It is labeled on apple for thinning at 1 1/2 to 8 pints per acre. Our New Jersey experience follows those of other mid-Atlantic states in that Ethephon or Ethrel is the only material we can count on as a late rescue treatment for thinning in the 20-25MM window. It is rate dependent with certain cultivars being more sensitive. Rates range from 1 1/2 pint 100 gal up to 1 and 1/2 pint per 100 gallons.

All our other thinning materials become significantly less effective after fruit passes 15 MM in size. □

Apple Rust Diseases

Dave Rosenberger, PhD, Extension Specialist in Tree Fruit Plant Pathology, NYAES, Hudson Valley Lab

Reprinted from SCAFFOLDS Fruit Journal, Geneva, NY Volume 12, No. 9, May 12, 2003. <http://www.nysaes.cornell.edu/ent/scaffolds/>

Between May 5 and 12, the lower Hudson Valley had at least five wetting-drying cycles that provided 67 hr of leaf-wetting but only 0.55 inches of rainfall. These conditions are highly favorable for **apple rust** diseases because the intermittent wetting promotes production and dissemination of rust spores, light rains are less effective than heavy rains for washing spores out of the air, and long wetting periods allow time for spores to be blown into orchards from the alternate red cedar hosts.

Furthermore, apples were passing from full bloom to the early stages of petal fall during the past week, and the period of peak susceptibility for rust infections on fruit occurs between pink and first cover.

Editors Note: Northern New Jersey has had very similar weather conditions and I would expect the same problems with the Rust Diseases as a result.

The EBDC fungicides (mancozeb, Polyram) and the SI fungicides (Rubigan, Nova, Procure, Bayleton) are all effective for controlling rust diseases on apples. The SI fungicides provide at least 96 hr of post-infection activity against rust infections on leaves. *The EBDC fungicides do not provide any post-infection activity*, although they may arrest the infection process when applied during the first 12-18 hr after rains begin. *Captan and Topsin M are ineffective against rust diseases.*

The strobilurin fungicides (Sovran, Flint) have provided good control of rust diseases in some trials and moderate levels of control in other trials. The inconsistent performance of strobilurins against rust diseases may be attributable to differences in spray timing. Several tests at the Hudson Valley Lab have shown that strobilurins controlled rust diseases as well as 3 lb/A of mancozeb if the sprays were applied before the infection period. However, the strobilurins have much less post-infection activity than the SI fungicides. In a 2001 trial where control plots had 69% of Jersey mac fruit with quince rust, Nova provided 98% control of quince rust when it was applied at either 3 days or 7 days after the infection period, whereas Flint provided only 23% control at 3 days post-infection and no control after 7 days.

Three different rust diseases caused by *Gymnosporangium* species occur on apples in the Hudson Valley. **Cedar apple rust** (CAR), caused by *G. juniperi-virginianae*, infects both leaves and fruit of susceptible cultivars, but leaf infections are far more common than fruit infections.

Hawthorn rust caused by *G. globosum* only infects leaves and is generally less abundant than CAR. **Quince rust** (*G. clavipes*) infects fruit but does not cause leaf lesions. On infected leaves, the early symptoms of CAR and hawthorn rust are so similar that the two species cannot be easily differentiated. The size and coloration of rust lesions on leaves also differs among apple cultivars. By mid-August, hawthorn rust and CAR can be differentiated based on the appearance of the fungal fruiting structures (aecia) that form on the bottom sides of infected leaves.

Nearly all apple cultivars are susceptible to quince rust, although the degree of susceptibility varies. Many apple cultivars are resistant to either cedar apple rust or hawthorn rust, but very few are resistant to both CAR and hawthorn rust. Even when cultivars are resistant to rust, rust

APPLE RUST ON PAGE 3

APPLE RUST FROM PAGE 2

spores can cause leaf spot lesions on leaves that are not protected with fungicides. Rust-induced leaf spots develop when rust spores germinate and kill a few leaf cells before fungal growth is interrupted by the incompatible host reaction on a resistant cultivar. The killed leaf cells are then invaded by other secondary pathogens such as *Alternaria*, *Botryosphaeria*, or *Phomopsis*.

All three of the apple rust diseases require red cedar trees as an alternate host. For both CAR and hawthorn rust, the spores that infect apples are produced on the orange, jelly-like teliohorns that are generated by cedar galls during wet spring weather. Quince rust does produce a gall on cedars. Instead, quince rust appears as a canker on cedar twigs. The cankers can be easily located only when they are wet and are producing orange-red teliohorns during spring. Unlike CAR and hawthorn rust, where individual galls produce spores for only one season, quince rust infections can survive and produce spores on cedars for many years.

Eliminating red cedars near orchards had long been recommended as one approach for reducing the incidence of rust diseases on apples. The number of spores reaching an orchard declines rapidly as the distance to the nearest cedar trees is increased. However, eliminating cedars rarely provides complete control of rust diseases in areas where cedar trees are common, because small numbers of spores can be blown to apples from distant cedars. Where all cedars are eliminated within several hundred yards of an orchard, outbreaks of apple rust diseases are likely only in years when light rains cause extended intermittent wetting periods. Under those conditions, the abundance of cedar trees in backyards, hedgerows, and unmanaged land will produce enough spores to "contaminate" the air throughout the Hudson Valley fruit growing region.

Because those conditions are occurring this spring, all growers in the Hudson Valley (and New Jersey growers) are advised to apply an SI fungicide before or near petal fall to minimize potential losses to quince rust.

Submitted and edited by Win Cowgill, Agricultural Agent. □

Fruit IPM

Dean Polk, Fruit IPM Agent

Peach

✓ **Oriental Fruit Moth:** The second of two applications for this pest will be due on Wed. 5/14 in southern counties and on about 5/20 in central counties. The first application was due in northern counties on 5/11, with the second application due around 5/24. In southern counties, trap catches have decreased some in peaches, but still remain at over 130 moths per trap in apple blocks. We are still in the thick of the first flight, but should see a rapid decrease in trap captures over the next week to 10 days. Growers who are using mating disruption dispensers for control of OFM will want to place ties before the first emergence of 2nd generation adults. Second generation adults should not be flying for another 2 weeks. Therefore those growers have at least another week to 10 days before dispensers need to be placed in the trees.

✓ **Green Peach Aphid (GPA):** Populations have increased slightly over the last week, but are below treatment levels on most farms. We did receive a crisis exemption for Provado last Friday, May 9, for which a fax broadcast message was sent out. The use rate is 5-6 oz./A and is good from May 9 through May 23. Copies of the proposed supplemental label were sent to growers in the fax. If you have any questions regarding this product, please contact IPM field personnel, this or your county office.

✓ **Tufted Apple Budmoth (TABM):** Adults were first captured on May 7 in southern counties. Treatments will not be needed for this pest for another couple of weeks. This insect has two generations per year, with the second generation being more problematic in most seasons. However, we did experience anywhere from 3 to 6% injury from first generation larvae last year on some varieties. Growers who have a history of TABM should be aware that OP (Guthion, Imidan), or OP plus carbamates (Lannate) programs may not work well against this pest.

✓ **Disease:** Wetting periods and some hard rains continue to provide ideal conditions for **Bacterial Spot** and **Peach Scab** infection. Any blocks that did not receive a complete program last year should receive a program geared for scab at this time of year. The best products to use for scab at this time of year include Bravo, Captan, Abound and Flint. Topsin may also be used for scab, but do not rely on it for **brown rot** control, since past experience has shown that resistant brown rot strains to Topsin are common.

Apple

✓ **Apple Scab:** Two infection periods were registered last week. One infection period totaled over 60 hours of

SEE IPM ON PAGE 4

IPM FROM PAGE 3

wetting. With adequate spore levels and ideal temperatures, this was a severe infection period. Growers should remain covered for infection at this time of year.

✓ **Codling Moth:** The first adults were caught in Gloucester County on 5/7. The first treatments for this pest will be due in about 2 ½ weeks with traditional OP programs. Timing for IGRs will be slightly different.

Blueberry

✓ **Leafrollers and other Lepids:**

Numbers in scouted samples remain very low. Only 4 samples showed any presence of these insects. Only one sample showed activity at a high of .1 larva per 100 blossom clusters.

✓ **Plum Curculio:** Feeding damage has been noted in Weymouth and Bluetta fields where fruit is set. Three samples done on cloudy days with temperatures in the sixties, showed live adults. While we scout for both adults and damage, the presence or absence of adults can be very misleading, since adults are very motile, and their presence in the field is largely dependent on temperature. Since we have had fairly cool weather, one would expect not to see many adults, even though they are present. If temperatures increase we could see much greater activity.

✓ **Mummy Berry:** Strikes are present, and at higher levels this week. In one field of Blueberry where we see a perennial problem with mummy, over 15 strikes per bush were recorded. Frequent rains continue to provide ideal conditions for further (secondary) infection where strikes are already present. Several newer materials are available for disease control. Please see the first newsletters for options.

✓ **Aphids:** Aphids are present in some areas, but are at very low levels. They are not a concern at this time. □

Addition to Cooperative Marketing Associations in New Jersey

In the May 6, 2003 issue of the Plant and Pest Advisory Fruit Edition, an article listing the Cooperative Marketing Associations in New Jersey was printed. An addition to this list includes the Landisville Produce Cooperative Association, Inc. The information is listed below:

Landisville Produce Cooperative Association, Inc.

PO Box 303 Railroad Blvd. Landisville, NJ 08326

Phone: 856-697-2271

Fax: 856-697-8908

Date established: 1913

Manager: Lawrence Marandino

Date of Opening: open all year round

Facilities/Service Offered: ordering produce from farmers, selling produce to brokers, packing sweet potatoes and cucumbers, selling supplies, ice, twist ties, containers, cartons, etc.

Commodities sold: basil, beans, beets, broccoli, cabbages (green, red, savoy, China), cilantro, collards, cucumbers, dandelion, dill, eggplants, endive, escarole, leeks, lettuces, melons, parsley, peppers, pickles, radishes, scallions, spinach, sweet potatoes, Swiss chards, tomatoes, turnips, winter squashes, yams, etc. □

Calendar of Events

May 14, 2003 – Evening Fruit Meeting – 6:15 p.m. Nichols Orchard, Royal Avenue, Franklinville, NJ. Contact: Jerome L. Frecon, 856-307-6450 ext. 1. Website: <http://gloucester.rce.rutgers.edu>.

May 22, 2003 – Blueberry Twilight Meeting – 6:30 p.m. Atlantic Blueberry Company Inc., 7201 Weymouth Road, Hammonton, NJ. Contact: Gary Pavlis at 609 625-0056 or pavlis@aesop.rutgers.edu.

June 4, 2003 – Twilight Wine Grape Meeting – 6:15 p.m. Cape May Winery, Toby Craig, 709 Town Bank Road, Cape May, NJ. Contact: Jerome L. Frecon, 856-307-6450 ext. 1 or Russ Blair at Rutgers Cooperative Extension of Cape May at 609 465-5115.

June 25, 2003 – Twilight Fruit Research Meeting – 5 p.m. Rutgers Agricultural Research and Extension Center (RAREC), 121 Northville Road, Bridgeton, NJ. Contact: Jerome L. Frecon 856-307-6450 ext 1.

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

NJ Pesticide Applicator Units to be provided at each of the evening and twilight tree fruit and grape meetings.

Cutting Down Trees Safely

Raymond J. Samulis, Agricultural Agent

Throughout my years dealing with farm safety, I find that often people think the necessity of basic safety reminders are unnecessary, boring, and, at best, redundant. As I have said many times before, once the statistics show that farming, along with mining, are not ranked as the first and second most dangerous occupations, we can begin to downplay the importance of farm safety. We need not look beyond the events of last month to understand the cold, harsh reality of the dangers on the farm. Last month we lost two prominent members of the New Jersey agricultural community due to separate accidents when cutting down trees. Could these events have been prevented? The reality is that we will probably never know. However, in attempting to prevent tragedies from occurring on the farm, planning, preparation, and precautions are in everybody's best interests.

When working with chain saws, there are some basic principles that can greatly decrease the chance of a mishap. It is always best to work as a team, so that in the event something occurs, help can be summoned immediately. Due to the basic nature of farming, many times we are working when we are extremely tired. Fatigue can slow our reflexes and make avoiding accidents more difficult. Make sure not to operate chain saws where a long reach is needed, or where the saw is above your shoulders. Make sure dull chains are sharpened, since dull chains wear out equipment faster and also increase the likelihood of binding the saw blade. Studies have shown that chain saws emit noise at a very high decibel level, which can damage your hearing over time. We demonstrated this at last year's Farm Safety Twilight Meeting in September. Consider wearing muff-type ear protection to safeguard your hearing, along with the proper safety goggles to prevent eye injury.

Kickback is another situation that can often occur when cutting trees down. This situation occurs when the moving blade at the tip of the saw comes into contact with an object (mostly the tree) and results in a violent jumping-back of the saw toward your face. Many new saws now have "inertial" chain brakes, which will lessen, but not eliminate, the danger of kickback.

There are some basic questions we should ask ourselves when contemplating whether to remove a tree ourselves or get someone with experience. This question is one that farmers are simply not comfortable with since they are used to doing everything themselves. It is important to evaluate the environment around the tree before felling is attempted. Does the tree lean? Do you think you can drop it where you think? This is often easier said than done, as the missing 75 feet of fence in my yard can attest, a small misjudgment by my neighbor. While it is theoretically possible to fell a tree in the opposite direction of the lean, only many years of experience will make this happen. One important part of a tree-cutting plan requires multiple escape paths, which must be planned ahead of any cutting. When in doubt of which way a tree appears it will fall, a plumb line can help in eliminating any optical illusions regarding which way the tree will drop.

Agriculture has always been dangerous, is currently dangerous, and in all likelihood will continue to be one of the most dangerous occupations in the world. Not all accidents can be avoided. This, however, doesn't mean we can't work on changing this by reminding ourselves of safety precautions and reviewing them when and where necessary on the farm. □

Frost Control and Pest Management Focus of Meeting at Nichols Orchard in Franklinville

Nichols Fruit Farm on 528 Royal Avenue in Franklinville, NJ will be the site of a May Twilight Fruit Meeting. Joe Nichols, owner and operator, will welcome commercial tree fruit growers to his diverse growing operation on Wednesday, May 14th. Specialists from Rutgers Cooperative Extension (RCE) will provide updates on current pest problems as a driving tour of the orchard is taken. Issues focused on will be the Use of Stinger for Perennial and Broad Leafed Weed Control, and Mite and Aphid Control. Dean Polk, IPM Agent with RCE, will also provide an Update on Tree Fruit Disease Control, and with IPM Fruit Program Associate, Dave Schmitt, will also bring the growers up-to-date on improved pesticide application technology.

"Mr. Nichols does a beautiful job training and pruning both his peaches and high density apple trees," said Jerry Frecon, Agricultural Agent with Rutgers Cooperative Extension. We will tour many of these planting on his home farm, many of which are irrigated with trickle systems. Win Cowgill agricultural agent with RCE of Hunterdon County will make some timely comments on apple pruning and also provide the latest information on chemical thinning and control of alternate bearing in apples.

Joe Nichols was one of the first growers to install wind machines for orchard protection from low temperatures," said Frecon. "If conditions are right Joe will start one of his machines so we can feel the effect of air movement and also better understand the impact of the noise generated on the surrounding community".

New Jersey Pesticide applicator units in Core, 1A, 3A, and PP2 will be offered for those attending the full program.

MEETING ON PAGE 6

USDA Reminder of Sign-Up Dates for Farm and Conservation Programs

Paul J. Hlubik, State Executive Director for USDA's Farm Service Agency in New Jersey wants to remind producers of key sign-up dates for USDA programs.

"Late May and early June 2003 contain many important dates for landowners and producers eligible to participate in these programs," said Hlubik. "As of today, producers can sign up so that program benefits can be provided in a timely and efficient manner."

Conservation Reserve Program

The CRP general sign-up is being held from May 5 through May 30. Producers can sign up at local USDA service centers across the nation. The 2002 Farm Bill authorized USDA to maintain CRP enrollment up to 39.2 million acres.

Aside from the general sign-up, CRP's continuous sign-up program will be ongoing. USDA has reserved two million acres for the continuous sign-up program, which represents the most environmentally desirable and sensitive land. USDA is making a special effort to help enhance wildlife habitats and air quality by setting aside 500,000 acres for bottomland hardwood tree planting. Continuous sign-up for hardwood planting will start after the general sign-up.

Direct and Counter-cyclical Program

Sign-up began Oct. 1, 2002, for the direct and counter-cyclical program for crop years 2002 and 2003 and continues until June 2, 2003. The 2002 Farm Bill provides for payments to be made to eligible producers of covered commodities and peanuts for the 2002 through 2007 crop years. Direct and counter cyclical payments are made to producers with established crop bases and payment yields.

Payment rates for direct payments are established by the 2002 Farm Bill and are issued regardless of market prices. Producers also are eligible for counter-cyclical payments, but payments are issued only if effective prices are less than the target prices set in the 2002 Farm Bill. The effective price is equal to the higher of the average loan rate or national average market price received by producers, plus the direct payment rate.

Crop Disaster Program

Sign-up for the crop program, which will reimburse producers for qualifying crop losses in either 2001 or 2002, will begin June 6, with payments to begin shortly thereafter.

Crop disaster payments must be calculated using the same formula used for the 2000 crop year. This means crop losses for 2001 and 2002 will be valued using the price election for Actual Production History crop insurance policies, or if that price is not available, a 5-year average.

Crop disaster payments are also subject to a formula which states that the sum of (1) the value of the crop not lost, (2) the disaster payment, and (3) the crop-insurance indemnity cannot exceed 95 percent of what the crop's value would have been, if there had been no loss. Crop disaster payments will be reduced if the 95 percent limitation is exceeded. The value of the crop not lost and the 95 percent limitation will be valued at either the Actual Production History price election or the NASS season-average price, whichever is higher. Specific details will be available from local Farm Service Agency offices, USDA Service Centers and on the web at <http://disaster.fsa.usda.gov>.

For more information on these and other USDA programs, visit the FSA website at www.fsa.usda.gov. Producers wishing to sign-up for these programs should visit their local USDA Service Center or FSA County Office. □

MEETING FROM PAGE 5

Rutgers Cooperative Extension of Gloucester County will sponsor the meeting. Please call 856 307-6540 for details and directions to the meeting. The full program and directions are also posted on the Rutgers Cooperative Extension Web Site at: <http://gloucester.rce.rutgers.edu>. □

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