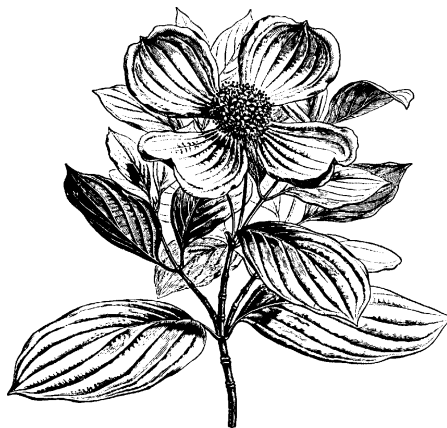


PLANT & PEST ADVISORY

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INSIDE

Dogwood Borer Infestation in New Jersey Apple Orchards	1
Calendar of Events	2
Biology and Control of Summer Trunk Insect Pests	2
Late Apple Thinning, Weather Conditions, and Rainfastness of Thinners	3
Fruit IPM.....	4
Soil Survey Web Site	5

Dogwood Borer Infestation in New Jersey Apple Orchards

Win Cowgill, Agricultural Agent and Dean Polk, IPM Fruit Agent

With the introduction of higher density apple orchards and the utilization of dwarfing clonal rootstocks, the dogwood borer has been observed in New Jersey apple orchards. The dogwood borer (*Synanthedon scitula*) was discovered for the first time in the Northeast in the 1980's. They have been observed as a problem in Virginia, West Virginia, Maryland, New York and Michigan apple orchards.

Untreated infestations of dogwood borers may reduce yields, and in rare cases girdle young trees. The infestation occurs primarily in burr knots and at the graft union in callus tissue on the more dwarfing clonal rootstocks. Burr knots are root initials that most often appear on the shanks of exposed rootstocks, such as the M9 clones, M26, M7 and especially MARK. Growers also should be aware of burrknot producing scion cultivars such as Empire and Gala.

Cultural control should consist of keeping the trunk area weed-free so moisture does not remain any longer than necessary. Tree guards also provide an ideal growth environment for burr knots and prevent pesticide applications from reaching the trunks. The use of white latex paint on the trunks is also effective in helping to prevent the infestation of burr knots with dogwood borer. We utilize a mixture of 50% white latex paint with a low acrylic content mixed with 50% water. This makes a white wash that can be sprayed on the trunks and rootstock shanks. It assists in the prevention of southwest injury as well.

In 1998 at the Rutgers Snyder Research and Extension Farm in Pittstown, NJ, nine-year old Empire trees on M26 rootstock were found to have nearly 100% infestation of dogwood borer larvae in the scion and rootstock produced burrknots. Up to 6 larvae per burrknot were found in some of the trees. The trunks of the trees are guarded with solid plastic tree guards, aiding in a favorable environment for the formation of burrknots and reducing the amount of pesticide reaching them.

For chemical control, Lorsban 50W has a label for dogwood borer on apples. This is a Gowan product. The label rate lists 3 lb./A

SEE BORER IN NJ ON PAGE 2

BORER IN NJ FROM PAGE 1

of Lorsban 50 W. However, for effective dogwood borer control the application should be made with a handgun soaking the tree trunks and burrknots with the solution and puddling the solution at the base. Utilize the 3lb/A rate in 100 gallons of water. Penn State says 6 oz per tree is effective with a backpack sprayer directed at the burrknots and the surrounding tissue. Do not exceed the 3lbs/100gallons per acre rate.

Yes, there are pheromones available and they can be trapped. We will be placing dogwood borer traps at selected locations in New Jersey apple orchards. The pesticide application should be made just after peak flight. In New Jersey most of our borer activity is from late July into August.

For more information on dogwood borers visit the Penn State Web Site at:

<http://tfpg.cas.psu.edu/part2/part23k.htm>

or obtain the Cornell Fact Sheet on Dogwood Borer at:

<http://www.nysaes.cornell.edu/ipmnet/ny/fruits/FruitFS/dgwdborer.html>

or the West Virginia website at

http://www.caf.wvu.edu/kearneysville/pest_month/insectfocusocto.html

Please read the following related article on Biology and Control of Summer Trunk Insect Pests. □

Calendar of Events

June 5, 2001, 6:15 PM - Twilight Grape And Enology Meeting, Heritage Tree Fruit LLC. Rt. 609 Richwood-Elmer Rd., Richwood, NJ. Contact: Jerry Frecon at Rutgers Cooperative Extension of Gloucester Co. at 856-307-6450.

June 26, 2001, 6:15 PM - Twilight Fruit Research Meeting, Rutgers Agricultural Research and Extension Center, Northville Rd., Upper Deerfield Township, Bridgeton, NJ. Contact: Jerry Frecon at Rutgers Cooperative Extension of Gloucester Co. (Registration required) This meeting will be part of the State Horticultural Association of Pennsylvania Fruit Tour of southern NJ.

Biology and Control of Summer Trunk Insect Pests

Dick Straub, Extension Entomologist, Cornell University, Highland University

Reprinted from the NYSAES Scaffolds newsletter, June 7, 1999, Volume 8, No. 12. <http://www.nysaes.cornell.edu/ent/scaffolds/1999/6.7.coming.html>

Borers

In recent years, the incidence of infestations by dogwood borer (DWB), *Synanthedon scitula*, has become noticeably more prevalent. Infestations of this clearwing moth in apples are almost always located in burrknots or graft unions that are planted too high above ground level. Burrknots are aggregations of root initials that can develop on the above ground portion of the rootstock; all commercial dwarfing and semi-dwarfing rootstocks have a tendency to develop burrknots. Some chemicals with hormone effects, such as NAA, can increase the expression of burrknots, as will failure to keep the area around the trunk weed-free and open to sunlight.

The adult seeks out these spots to lay eggs, particularly if they are surrounded by vegetation or protected by something, such as mouse guards. Moreover, mouse guards may frequently house weeds, and shield the lower trunk from incidental exposure to insecticide cover sprays. Sustained feeding by dogwood borer at the graft union may severely weaken the tree at this juncture, or girdle the trunk and cause a slow decline in tree health. Orchards in which mouse guards are emplaced should be examined for signs of damage.

All grafted trees in New York should be periodically checked for infestation. White latex paint brushed on the exposed portion of the rootstock will prevent new infestations of the borers, and also protect against southwest injury to the bark. Dilute trunk applications of an insecticide with good residual activity can provide control of established infestations. Lorsban 50WP is the most effective labeled material if applied during the period between *July 15 and August 15, bearing in mind the specific pre-harvest intervals.*

Submitted by Win Cowgill, Agricultural Agent. □

Late Apple Thinning, Weather Conditions, and Rainfastness of Thinners

Win Cowgill, Agricultural Agent

Thinning apples for enhanced size and stimulation of return bloom is the most important cultural practice growers do. Thinning must work! Inadequate thinning will result in significant losses of crop value due to small fruit and the induction of bi-annual bearing in some cultivars. We must take advantage of every opportunity possible to thin fruit chemically because we cannot count on the weather during our thinning windows. We have encouraged growers to begin thinning at petal fall in order to have a second opportunity at the traditional timing of 8-10 MM.

Cool weather can adversely impact the efficacy of our thinning materials. Most PGR materials are more active if a warming trend follows application. Many of our new cultivars are difficult to thin and require multiple applications to get the job done.

Most New Jersey apple growers still have an opportunity to make an additional thinning application(s) if needed.

Late Fruit Set Window (15-20MM)

All labeled thinning materials are somewhat effective at this time including NAA, and Accell. However, the high rates of these materials must be used and will work better if used in combination with Sevin or Vydate. Sevin XLR combined with NAA or Accell, or Vydate combined with NAA or Accell are two suggested combinations.

Ethephon or Ethrel work better at these later windows but are rate dependent. Certain cultivars are much more sensitive to Ethephon. Rates range from 1/2 pint per 100 gal and up to 1 and 1/2 pints per 100 gallons. Make sure to consult the label.

Closing Window (20MM+)

During this time of thinning the receptivity and response to thinners is declining. The use of combinations is necessary at this time. Ethephon 2 or Ethrel has been effective on some varieties at this timing.

Weather conditions and Rainfastness

Dr. Duane Green, UMASS, in his fact sheet on apple thinning, states the following, "the effectiveness of chemical thinners is influenced by the weather in several ways. All chemical thinners, to be effective, must diffuse across the cuticle, which covers all aerial portions of the plant, including leaves, flowers, and young fruit. Waxes on the cuticle provide a major barrier to penetration. When the weather is cold and cloudy, little wax is secreted on the leaf surface, thus

permitting greater penetration of the chemical. Conversely, when the weather is sunny and dry, wax is secreted and deposited at an accelerated rate, thus restricting penetration of thinning chemicals. Therefore, chemical thinners, generally, are less effective after warm, dry periods and more effective after moist periods. Regardless of the mode of action of each thinning chemical, all require some type of stress."

How quickly is the thinning chemical absorbed? We have always recommended that thinners be applied in the evening in order to have slow drying conditions. It is during drying that the chemical is absorbed. Green reports "NAA penetration is linear as long as the droplet does not dry. During the drying process, NAA penetration accelerates. Little absorption occurs after droplet drying. My rule of thumb is that you can expect an 80% response if drying occurs. With NAA that is probably conservative. I did an experiment a number of year ago where NAA was washed off leaves immediately following droplet drying (about 10 minutes). A near 100% response was observed."

The question of rainfastness or how much drying time must follow an application of Sevin and NAA prompted this discussion. A grower received 1/2 inch of rain 3 hours after an evening application at 8-12MM stage on multiple cultivars.

Dr. Ross Byers, VPI indicated that, "the major absorption of NAA and Sevin is during drying. Once dried, they both may be rewetted and absorption may occur again. NAA is destroyed by light over time and after 2-4 days what is on the surface may not be important. Sevin is not destroyed by light. It could last a week on the surface without entry unless rewetted."

If Sevin is rewetted by rainfall it is then reactivated, and more thinning can occur. Heavy dews can also reactivate Sevin. Mark Longstroth, MSU, reported a year ago on the Apple-Crop E-mail list that after a 1/2 inch of rain, more than one half of the Sevin should still remain on the leaf.

Dr. Byers also indicated the following observation, "even if it rained and the tractor driver quit; right where he quit it should have about the same effect as if it had dried, in our experience. As long as it is not a drenching rain. Most of the absorption is on the underside of the leaf. Usually rain is on the top side."

If you have additional questions on late chemical thinning of apples, contact your area fruit agent for specific recommendations. □

Fruit IPM

Dean Polk, Fruit IPM Agent

Peach

✓ **Green Peach Aphids (GPA):** While GPA colonies are common, population densities are rather low in most blocks. If you have 1 to 2 colonies per tree, you should not immediately decide to spray them, unless it is a block of nectarines. These levels are too low to justify treatment. Some blocks have been seen with over 5 colonies per tree, while 1 block had up to 13 colonies per tree. Provado applied at the 4 oz/Ac rate, but in only 1 middle (effective 2 oz rate) has worked very well in scouted blocks. It takes 5 to 7 days to get a good evaluation, since aphids do not immediately die with 1 alternate middle application.

✓ **European Red Mites (ERM):** Populations are present on some farms. Since we have a number of good miticides now, it may be better to see what kind of predator populations can develop before deciding to treat. Of course, if 10 to 20 mites per leaf are building up on early varieties, then treatment is advisable.

✓ **Rusty Spot:** We are still experiencing very favorable conditions for rusty spot. Therefore the use of Nova on sensitive varieties is suggested for the next couple of sprays. Remember that the lack of rain makes for good rusty spot infection conditions.

✓ **Oriental Fruit Moth (OFM):** The second application for OFM will be due in northern counties on about 5/21-22 (the first treatment was due around 5/9-10). Treatments in southern and central counties should have been applied by this weekend to Monday.

✓ **Catfacing Insects (CFI):** Low numbers of catfacing insects continue to be found in beating tray samples, but fresh injury is rare. These insects are still a target for early season spraying.

Apple

✓ **Spotted Tentiform Leafminer (STLM) and European Red Mite (ERM):** STLM populations are low in most blocks, but did require treatment on one farm so far. Mites are more common, and have required treatment in a number of blocks. Before deciding to treat either STLM or ERM, consider all your options. Provado, Lannate, and Agrimek will all control leafminers. However, only Agrimek will also control mites. Agrimek must be used with 1/4% oil by volume or a silicone penetrant. When combining with oil, use of 1 gal/Ac is best, but only in high volume and cooler weather. Be aware of fungicide use and oil compatibility when using oil. All products should target STLM in the early sapfeeding stage, so timing is critical.

✓ **European Apple Sawfly:** Some injury has been seen in northern counties. From past experience, we have seen that injury is usually associated with late petal fall applications or using 1 alternate middle spray at petal with too much time stretched between the first and second middle.

Blueberry

✓ **Leafrollers, green fruitworms, and spanworms:** Most samples (80%) showed no activity. The highest levels seen were close to .5 larvae per 100 clusters, and most of these were green fruitworm larvae.

✓ **Aphids:** Trying to find significant aphid populations this spring has been a boring job. The vast majority of samples show no aphid activity. Where aphids are present, only single insects are present. One farm was seen with 8% of soft terminals infested, so populations can be found.

✓ **Plum Curculio (PC):** While some PC activity was noted last week, only 1 "hot spot" was seen, and levels here have dropped off. Hotspots are more common where fields lay up against woods and wild hedgerows. Where eggs were successfully laid on fruit, larvae will develop inside the berries, and the fruit will drop. Infested mid-season and late varieties will drop before picking time, but infested early season varieties may hang on for harvest. Therefore, care should be used in the packing of early season varieties that have significant woods borders immediately surrounding those fields.

✓ **Cranberry Fruitworm (CBFW):** Adults have started to emerge. Adults are small moths with gray-brown wings. Young adults have 2 white spots on each wing. If you look for eggs, they are flat and white, and are laid in the calyx end cup of developing berries. Developing larvae usually move through 3 to 6 berries, leaving webbing and frass as they go. The frass hangs on and is the distinguishing characteristic of its damage. Larval development is usually finished by the end of May to mid-June. Key spray timing is usually just after trap counts peak at the end of the month and first few days of June.

✓ **Mummy Berry:** Bushes are clean in most fields, but where present up to 2 strikes per bush may be seen. One Early Blue field had up to 7 strikes per bush, and 5-6 strikes were easily found in 1 unsprayed field.

SEE INSECT TRAP COUNTS ON PAGE 5

Soil Survey Web Site

Joseph R. Heckman, Ph.D., Soil Science

Soil survey maps are available from the Natural Resource Conservation Service (NRCS). They provide a wealth of information about local soil conditions such as drainage, texture, and crop yield potential. The NRCS is now coming out with county soil survey maps on cd-rom. Somerset and Burlington Counties are currently available. Eventually you will be able to access soil survey maps from the web. For further information, the NRCS web site for New Jersey-specific information is: www.nj.nrcs.usda.gov. □

Insect Trap Counts

Tree Fruit - Southern Counties

Week Ending	AM	CM	LPTB	OFM	PTB	STLM	TABM-A	TABM-P	OFM-A
1-Apr				0.00					
8-Apr				0.00					
13-Apr				0.20		725.00			6.00
19-Apr				2.02		1040.00			43.00
27-Apr				63.82		1466.67	0.00	0.00	132.00
4-May		0.29		64.79		1213.33	0.29	0.27	117.50
11-May		2.88	1.00	43.69		1280.00	7.56	6.53	123.00

Tree Fruit - Northern Counties

Week Ending	AM	CM	LPTB	OFM	PTB	STLM	TABM-A	TABM-P	OFM-A
11-May		3.02		58.27		1213.33			

Atlantic Co. Blueberry Trap Averages

WEEK END	CBFW	RBLR	OBLR	SNLH	OR BEET	BBM
8-Apr		133.00				
15-Apr		197.50				
22-Apr		195.75				
29-Apr		215.60				
6-May		188.80				
13-May		108.67				

Burlington Co. Blueberry Trap Averages

WEEK END	CBFW	RBLR	OBLR	SNLH	OR BEET	BBM
8-Apr		—				
15-Apr		—				
22-Apr		25.00				
29-Apr		107.00				
6-May		125.50				
13-May		41.43				

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