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Update on Pest Management
and Crop Development

F R U I T J O U R N A L

April 26, 2004

VOLUME 13, No. 6

Geneva, NY

NOW
SHOWING

ORCHARD
RADAR
DIGEST



Peak trap catch and approximate start of
egg hatch: May 8.

San Jose Scale

First adult SJS caught on trap: May
21.

Spotted Tentiform Leafminer

1st STLM flight, peak trap catch: May 16.

1st generation sapfeeding mines start show-
ing: May 20.

Optimum sample date is around Friday, May 26,
when a larger portion of the mines have become
detectable.

White Apple Leafhopper

1st generation WALH found on apple foliage:
May 18.

Geneva Predictions:

Roundheaded Appletree Borer

RAB adult emergence begins: June 2; Peak
emergence: June 16.

RAB egg laying begins: June 11. Peak egg laying
period roughly: July 1 to 15.

Lesser Appleworm

1st LAW flight, first trap catch expected: May
14; Peak trap catch: May 26.

Mullein Plant Bug

Expected 50% egg hatch date: May 19, which is
7 days before rough estimate of Red Delicious
petal fall date.

The most accurate time for limb tapping counts,
but possibly after MPB damage has occurred, is
when 90% of eggs have hatched.

90% egg hatch date: May 27.

Obliquebanded Leafroller

1st generation OBLR flight, first trap catch ex-
pected: June 13.

Oriental Fruit Moth

1st generation OFM flight, first trap catch ex-
pected: May 7.

Optimum 1st generation first treatment date, if
needed: May 24.

Redbanded Leafroller

1st RBLR flight begins around: April 23.

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Highland Predictions:**Roundheaded Appletree Borer**

RAB adult emergence begins: May 23; Peak emergence: June 7.

RAB egg laying begins: June 2. Peak egg laying period roughly: June 22 to July 6.

Lesser Appleworm

1st LAW flight, first trap catch expected: May 1; Peak trap catch: May 15.

Mullein Plant Bug

Expected 50% egg hatch date: May 9, which is 7 days before rough estimate of Red Delicious petal fall date.

The most accurate time for limb tapping counts, but possibly after MPB damage has occurred, is when 90% of eggs have hatched.

90% egg hatch date: May 18.

Obliquebanded Leafroller

1st generation OBLR flight, first trap catch expected: June 4.

Oriental Fruit Moth

1st generation OFM flight, first trap catch expected: April 22.

Optimum 1st generation first treatment date, if needed: May 14.

Redbanded Leafroller

Peak trap catch and approximate start of egg hatch: April 23.

San Jose Scale

First adult SJS caught on trap: May 9.

Spotted Tentiform Leafminer

1st STLM flight, peak trap catch: May 2.

1st generation sapfeeding mines start showing: May 8.

Optimum sample date is around Friday, May 15, when a larger portion of the mines have become detectable.

White Apple Leafhopper

1st generation WALH found on apple foliage: May 6.



PEACH
FUZZ

MANAGING BROWN ROT

(Bill Turechek, Plant Pathology, Geneva)

❖❖ Brown rot is the most serious disease of peaches, cherries, plums, prunes, nectarines, and apricots in New York. The fungus infects the blossoms, immature and mature fruit, spurs, and small branches. Major losses can occur if weather conditions favor disease development and fungicide protection is lacking during bloom and just before ripening.

Warm, wet weather favors brown rot infection. In the Northeast, most brown rot infections develop from conidia that are produced on mummies and infected twigs. Conidia are produced in late spring when temperatures range from 55–77°F and are spread by wind, rain, and insects. Although conidia can germinate and infect at temperatures between 32 and 90°F, optimum temperature for blossom infection of peach range

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from 70 to 77°F. Under these conditions, spores germinate and penetrate plant cells on wet blossom surfaces in as little as 5 hours. In tart cherries, significant blossom infection can occur following 12 hr of wetness at 60°F or 24 hr of wetness at 50°F. Blossom blight may also develop at lower temperatures with prolonged wetting periods.

Fungicide program: Some of the label information and restrictions for brown rot fungicides are summarized below. The protectant fungicides (e.g., Bravo, captan, sulfur) must be applied prior to a wetting period to be effective. If disease pressure is not very high, captan may be a good choice for blossom blight sprays because it is economical. Be aware, however, that captan can be phytotoxic to some sweet cherry and plum varieties. Bravo is a better choice for brown rot control on tart cherries and plums because it also controls black knot. Bravo is also the better choice when disease pressure is high, but it cannot be applied beyond shuck split.

The sterol-inhibiting (SI) fungicides Elite, Indar, and Orbit are labeled for control of blossom blight and can be applied again 2 to 3 weeks prior to harvest to control fruit rots. None of them are labeled for brown rot control at shuck split or first cover, but if applied at these times to control other diseases on the label (mildew, peach scab, cherry leaf spot, etc.) they will also suppress brown rot infections on green fruit. Read the label carefully because most products have restrictions concerning which stone fruits can be sprayed, spray timing, numbers of applications per season, etc. However, there is some good news. Orbit's label restriction preventing 'Stanley-type plums' from being sprayed for fruit rot control has been replaced with a precautionary statement that reads: *Applications of Orbit during bloom to Stanley plums have occasionally caused fruit to be less oval in shape and smaller in size at harvest. To avoid this, do not apply Orbit to Stanley plums earlier than 21 days to harvest.* My interpretation is that if you are willing to accept the risk stated above then you may apply Orbit for fruit rot control. SI fungicides should not be used exclusively for both blossom blight and fruit rot; these fungicides must

be rotated with non-SI fungicides for effective resistance management. The SI fungicides can provide 24–48 hrs of kickback activity if conditions prevented a timely application of a protectant fungicide prior to an infection period.

The benzimidazoles were once very effective brown rot fungicides. Widespread resistance to this class of fungicides has left them ineffective for most areas in New York State. The benzimidazoles may provide effective brown rot control in young orchards in isolated locations where resistant strains from older orchards are unlikely to be present. The benzimidazoles used in combinations with other brown rot fungicides can suppress black knot if applied at 7-day intervals between white bud and shuck split.

Rovral is a dicarboximide fungicide labeled for use against blossom blight. It should be used as a protective spray although it does have limited post-infection activity (~48 hrs at 68°F). Vanguard is in a different class of fungicides and, like Rovral, is labeled only for blossom blight control. It is labeled for use on all stone fruits EXCEPT sweet cherry. Vanguard has yet to be extensively tested for blossom blight in New York. In trials conducted in New Jersey, blossom blight programs that included Vanguard at pink or early bloom performed as well as those programs that used Rovral or Abound at pink.

Abound is also registered for blossom blight and fruit rot control. The use of Abound, however, is generally not recommended because Abound is **extremely phytotoxic** to certain apple varieties; particularly those with McIntosh heritage. Yet, Abound may fill certain needs for plum growers. If you choose to use Abound: DO NOT spray Abound where spray drift may reach apple trees; DO NOT spray when conditions favor drift beyond intended area of application; DO NOT use spray equipment that has been previously used to spray Abound to

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spray apple trees. These restrictions make it very difficult to use Abound in accordance to its label when it is applied with an airblast sprayer.

Final Considerations: For many stone fruits, only one blossom blight spray may be needed unless disease pressure is high. Where large numbers of fruit were left unharvested the year before, or when conditions are warm (above 60°F) and wet, more than one blossom blight application will be required. Petal fall applications are essential if bloom sprays were omitted and conditions turn warm and wet at

petal fall. Fruits are very susceptible to infection 1–3 weeks after shuck split, so shuck split and first cover sprays are important, especially in wet weather. Spray intervals should be tightened 3 weeks prior to harvest when fruits are most susceptible to brown rot. In order to manage disease resistance, SI fungicides such as Indar, Elite or Orbit should not be used continuously throughout the season for BOTH blossom blight AND fruit rot control. Use captan or other fungicides intermittently with preharvest SI fungicides. Lastly, ALWAYS check product labels for timing and rates of application.

Table 1. Labeled uses of fungicides for control of brown rot on stone fruit.

Chemical Category	Fungicide	PB(1)	Bloom	PF	SS	Pre-harvest	PHI
Protectants(3)	Bravo	ACNP(2)	ACNP	ACNP	ACNP	****	0
	Captan	ACNP	ACNP	ACNP	*CNP	ACNP	0
	Ferbam	****	****	*C**	*C**	*C**	7
	Sulfur	*CNP	*CNP	*CNP	*CNP	*CNP	0
	Thiram	****	**N*	**N*	**N*	**N*	7
	Ziram	ACN*	ACN*	ACN*	ACN*	ACN*	14/30
Sterol Inhibitors(4)	Elite	*CN*	*CN*	*CN*	****	*CN*	0
	Indar	ACN*	ACN*	ACN*	****	ACN*	0
	Orbit	ACNP	ACNP	ACNP	****	ACNP	0
	Nova	ACNP	ACNP	ACNP	ACNP	ACNP	0
Dicarboximide(5)	Rovral	ACNP	ACNP	ACNP	****	****	0
Strobilurins(6)	Abound	ACNP	ACNP	ACNP	ACNP	ACNP	0
Fenhexamid	Elevate	ACNP	ACNP	ACNP	ACNP	ACNP	0
Benzimidazoles(7)	Topsin-M	ACNP	ACNP	ACNP	ACNP	ACNP	1
Analino-pyrimidine(8)	Vanguard	ACNP	ACNP	****	****	****	0

continued...

- 1 - PB = pre-bloom (red bud for apricot, popcorn for cherry, pink for peach and nectarine, and white bud for plum and prune; PF = petal fall; SS = shuck split; Covers = cover sprays; PHI = pre-harvest interval.
 2 - A = Apricot; C = Cherry; N = Peach and Nectarine; P = Plum and Prune.
 3 - Do not apply Bravo after shuck split. On apricot, petal fall applications of captan should be made at 75% petal fall. Application of sulfur to mature nectarines may cause discoloration.
 4 - Elite is also labeled on cherry for control of leaf spot and powdery mildew beginning at petal fall until terminal growth stops. On peaches, Indar can be applied for control of peach scab and on cherries for control of leaf spot beginning at shuck split at 10–14 day intervals up to harvest.
 5 - Do not make more than 2 applications per season.
 6 - Abound is extremely **phytotoxic** to certain apple varieties. DO NOT spray Abound where spray drift may reach apple trees; do not spray when conditions favor drift beyond intended area of application; do not use spray equipment that has been previously used to spray Abound to spray apple trees.
 7 - If resistance is not an issue, these may be used in fungicide resistance program. Fruit rot applications can begin 3 weeks prior to harvest. Topsin-M should not be used alone.
 8 - Do not apply to sweet cherries.



EARLY
BORED

EARLY-SEASON
APPLE BORER
CONTROL
(Dave Kain, Entomology,
Geneva)

❖❖ There is increasing concern throughout the Northeast about damage done to apple trees by borers. A little over half of the trees on size-controlling rootstocks in New York have burrknots and about a third of those burrknots are infested by borers. The species of primary concern is dogwood borer, but American plum borer can be prevalent in western New York apple orchards that are close to tart cherry and peach orchards. While we do not yet fully understand the effects these borers have on dwarf trees, we do know that they reduce vigor and can, in time, completely girdle and kill trees.

Over the last four growing seasons, we have tested a number of insecticides against these borers. Lorsban is very effective for this use and we would strongly urge growers to take advan-

tage of it where needed. From 2001 to 2003 we tested some other materials, including white latex paint, endosulfan, Avaunt, Surround, Intrepid, Danitol, Imidan, Esteem and Spinosad compared with Lorsban, with varying results. To get right to the point, only Avaunt, Danitol, and Esteem, applied two or three times in midsummer, provided control comparable to one application of Lorsban.

Borers can be controlled season-long by applying Lorsban at various times. While postbloom trunk application of Lorsban is still allowed, applying this material early in the season, beginning as early as half-inch green, may be more convenient and will result in less damage than waiting until the traditional midsummer period. Lorsban infiltrates burrknot tissue and kills larvae concealed within. Early application will prevent feeding damage caused by overwintering dogwood borer larvae before the flight begins in late-June. And, if American plum borer is a concern, the early application, in addition to killing overwintering larvae, will prevent infestation by the first brood of this pest, which begins at

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about petal fall. Lorsban is very persistent in wood so it continues to work for a considerably long time after it is applied (apparently 9–12 months in our trials). Other insecticides must be applied prior to borer oviposition and will protect burrknots only as long as they persist, so multiple applications will be necessary. In the case of dogwood borer this is most efficiently accomplished beginning at the time of the flight peak in mid-July, with another application in early August. This midsummer timing obviously will do nothing to control the first brood of American plum borer and will allow feeding by overwintered dogwood borer larvae to go unchecked up until that time. If you can, it would pay to take advantage of the window between now and pink to apply Lorsban for borer control in problem blocks. ❖❖

PEST FOCUS

Geneva:
Spotted tentiform leafminer catch increasing.

Highland: **Tarnished plant bug** feeding observed. **Obliquebanded leafroller** larvae active/feeding. **Rosy apple aphid** observed on Red Delicious.

INSECT TRAP CATCHES						
(Number/Trap/Day)						
	Geneva, NY			Highland, NY		
	<u>4/19</u>	<u>4/22</u>	<u>4/26</u>		<u>4/19</u>	<u>4/26</u>
Green fruitworm	0.0	0.3	0.3	Green fruitworm	0.3	0.2
Redbanded leafroller	1.0*	1.7	1.4	Redbanded leafroller	3.3	7.6
Spotted tentiform leafminer	0.4*	0.0	6.4	Spotted tentiform leafminer	19.9	34.4
Oriental fruit moth	—	0.0	0.0	Oriental fruit moth	0.1*	0.4
Lesser appleworm	—	0.0	0.0			
* first catch						

UPCOMING PEST EVENTS

	<u>43°F</u>	<u>50°F</u>
Current DD accumulations (Geneva 1/1–4/26):	199.2	86.6
(Geneva 1/1–4/26/2003):	193	93.9
(Geneva "Normal"):	223	98
(Geneva 5/3 Predicted):	271	123
Highland 1/1–4/26):	301	137

<u>Coming Events:</u>	<u>Ranges:</u>	
Spotted tentiform 1st oviposition	141–319	48–154
Green apple aphid present	127–297	54–156
Pear psylla 1st egg hatch	111–402	55–235
European red mite egg hatch	157–358	74–208
Rosy apple aphid nymphs present	91–291	45–148
Obliquebanded leafroller larvae active	149–388	54–201
Oriental fruit moth 1st catch	129–587	44–338
Plum curculio active	135–394	49–225
McIntosh at tight cluster	203–279	87–138



PHENOLOGIES

Geneva:		
	<u>4/26</u>	<u>5/3 (Predicted)</u>
Apple(McIntosh):	half-inch green	tight cluster
Apple(Red Delicious):	half-inch green	tight cluster
Pear:	early green cluster	green cluster–white bud
Sweet cherry:	early white bud	bloom
Tart cherry	late bud burst	white bud
Plum:	late bud burst	white bud–bloom
Peach:	half-inch green	pink–bloom
Highland:		
Apple (McIntosh/Ginger Gold):	pink	
Apple (Golden Delicious):	early pink	
Pear (Bartlett/Bosc):	late white bud	
Sweet cherry:	bloom	
Peach:	80% bloom	

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NOTE: Every effort has been made to provide correct, complete and up-to-date pesticide recommendations. Nevertheless, changes in pesticide regulations occur constantly, and human errors are possible. These recommendations are not a substitute for pesticide labelling. Please read the label before applying any pesticide.
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