



Newsletter

Extension

Fruit ICM News

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Calendar

June 30: Ohio Fruit Growers Society Summer Tour, OARDC Horticulture Unit 2, Wooster. Registration begins at 7:00 a.m.; program runs 8 a.m. to 3 p.m. Registration fee. For more information, contact Tom Sachs at 614-246-8292, tsachs@ofbf.org, or Diane Miller at 330-263-3824, miller.87@osu.edu. See last week's issue for the complete schedule.

New Fungicides for Grapes in 2004

Source: Dr. Wayne Wilcox, Cornell University via Annemiek Schilder, MSU Plant Pathology, Fruit Crop CAT, Vol. 19, No. 3, June 22, 2004

Quintec (quinoxifen) is a new fungicide in a unique chemical class (quinolines). Quintec is very effective against powdery mildew, but generally provides little or no control of other diseases, so it will need to be tank-mixed for control of black rot, downy mildew, etc. A trial in Michigan showed suppression of black rot, but control would not have been economically acceptable. Quintec is strictly a protectant fungicide, but has the ability to redistribute across expanding leaf and berry tissues after application, so it provides excellent protection of bunches. The federal label specifies a rate of 3-4 fl oz per acre at 7- to 14-day intervals, or 5-6.6 fl oz per acre at 14- to 21-day intervals. In New York, very good to excellent results were obtained with 3-4 fl oz/A on a 14-day program. Going to 21-day intervals is not advisable because this allows too much time for new leaves to unfold and be unprotected between applications. Because it is not related to any existing fungicide, Quintec controls powdery mildew that is resistant to strobilurin or sterol inhibitor (SI) fungicides.

In Michigan, we have no known cases of strobilurin resistance, but some suspected cases of SI resistance (where the SI fungicides are starting to become ineffective). The Quintec label allows up to five applications per year, but for resistance management purposes, fewer sprays are advised. Since this material is not cheap (surprise!), it is more likely to be of economic benefit in wine and table grapes than

juice grapes. The most cost-effective use will be from the prebloom through early postbloom period, when the fruit are highly susceptible to infection. Quintec has a 14-day pre-harvest interval.

Endura (boscalid) is a new fungicide in another unique chemical class (anilides/carboxamides). Endura is also highly effective against powdery mildew at 4.5 oz/A. It also provides moderate Botrytis control at this rate and very good Botrytis control at 8 oz/A, but does not control any of the other common grape diseases. It appears to have both protective and systemic (post-infection) activity, and becomes rainfast quickly. Endura is not related to any other grape fungicide, so it can be used in alternation with strobilurin and sterol inhibitor fungicides for fungicide resistance management. Because it also provides (rate-dependent) botrytis control, applications at late bloom and bunch closing will provide this additional benefit on susceptible varieties. Since Endura is prone to resistance development, a maximum of three applications per season is recommended, even though the label allows five. Endura has a 14-day preharvest interval.

Pristine (pyraclostrobin and boscalid) is a new fungicide with a broad spectrum of activity. The active ingredient pyraclostrobin belongs to the strobilurin group, whereas boscalid is the active ingredient in Endura. Pristine has (surface) systemic properties, which allows it to move locally within the leaf and from the top to the bottom of the leaf (translaminar activity). It also becomes rainfast quickly. When used at recommended rates, Pristine is highly effective against powdery mildew, provided that strobilurin-resistant strains are not present. It also provides excellent control of downy mildew (equal to or slightly better than Abound in trials in New York) and black rot (equal to the other strobilurins).

Pristine also provides control of Phomopsis and suppression of Botrytis bunch rot. However, it is phytotoxic to 'Concord' vines, so it cannot be used on this variety. The label also recommends not using this fungicide on 'Niagara', 'Worden', 'Fredonia', and related cultivars because of crop injury concerns. Its most appropriate use will therefore be on wine and table grape cultivars. Pristine has a 14-day pre-harvest interval.

Phosphorous acid (phosphite or phosphonate) products, such as ProPhyt and Phostrol, are starting to be used more widely by growers in the northeast and midwest for downy mildew control. They work similarly to Aliette. Phosphites are readily absorbed by the leaves (and fruit?), and are highly mobile within the plant, accumulating in roots, shoot tips, and possibly fruit. This means that they have some post-infection activity (since they work from inside the plant), but their residual activity is limited (they don't stick around for too long).

In tests conducted by Dr. Wayne Wilcox in New York in 2003, these materials showed substantial protective and post-infection activity on foliage. Seven days after the application, protection was still good in the youngest leaves, but declined measurably in older leaves. Fortunately, the youngest leaves are also the ones in greatest need of protection, since they are the most susceptible to disease. Even when leaf infection occurred, spore production was reduced by 95-100% on most leaves in most treatments. Such antispore activity should significantly reduce the disease pressure, which is always a concern with downy mildew in a wet season.

Note that Ridomil and effective strobilurin fungicides also reduce spore production from developing lesions, whereas mancozeb and captan don't. ProPhyt did not eradicate active lesions, but it did reduce further spore production by about 80% relative to unsprayed leaves. However, under high disease pressure in Chancellor vines, its performance was equivalent to Dithane, but far less than Abound or Pristine, which prevented the disease almost entirely. Apparently, 14 days was too long a spray interval under such high pressure. Phosphite products are relatively inexpensive and have a favorable toxicological profile and therefore have a 0-day pre-harvest interval. Some varieties may be vulnerable to burning symptoms, so test out these products on a small scale first.

Salts and oils: Kaligreen (potassium bicarbonate), Armicarb (potassium bicarbonate), Nutrol (monopotassium phosphate), and JMS Stylet Oil (paraffinic oil) are environmentally safe products registered for controlling powdery mildew on grapes. They work primarily, if not exclusively, as eradicants of young developing colonies, which they kill on contact. They appear to have little or no residual (protectant) activity against subsequent infections. For this reason, these materials need to be applied very frequently (e.g., 7-day intervals) for best results, although JMS Stylet Oil has done pretty well on 14-day intervals. Armicarb on a 14-day interval during the bloom and postbloom period has provided moderate to good control of black rot in 'Concord' grapes in Michigan. Kaligreen and Armicarb are OMRI listed for organic production.

Nutrol is a less expensive alternative to Kaligreen and Armicarb, but may need to be applied at a higher rate to obtain the same activity. There is a possibility of reduced photosynthesis (and potentially lowered Brix) as a result of frequent Stylet Oil applications, as well as compatibility problems with sulfur and certain other materials. Armicarb, Nutrol, and Stylet Oil have a 0-day pre-harvest interval, and Kaligreen has a 1-day PHI.

Degree Day Accumulations for Ohio Sites June 23, 2004

Ohio Location	Degree Day Accumulations Base 50	
	Actual	Normal*
Akron-Canton	945	860
Cincinnati	1308	1213
Cleveland	955	839
Columbus	1244	1041
Dayton	1194	1173
Kingsville	869	719
Mansfield	954	849
Norwalk	1015	819
Piketon	1310	1075
Toledo	967	848
Wooster	1030	811
Youngstown	895	781

Pest Phenology

Coming Events	Degree Day Accum. Base 50F
Apple maggot 1 st catch	749 - 1033
Oriental fruit moth 2 nd flight begins	784 - 1022

Thanks to Art Agnello, Cornell Entomologist

Fruit Observations & Trap Reports

Insect Key	
AM:	apple maggot
CM:	codling moth
ESBM:	eye-spotted budmoth
LAW:	lesser apple worm
LPTB:	lesser peachtree borer
OBLR:	obliquebanded leafroller
OFM:	oriental fruit moth
PTB:	peachtree borer
RBLR:	redbanded leafroller
SJS:	San Jose scale
STLM:	spotted tentiform leafminer
TABM:	tufted apple budmoth
VLR:	variegated leafroller

Site: Waterman Lab, Columbus
 Dr. Celeste Welty, OSU Extension Entomologist

Apple 6/9 to 6/16/04	
Redbanded leafroller	60 up from 19
Spotted tentiform leafminer	358 up from 349
San Jose scale	16 up from 0
Codling moth	10.3 down from 17.3
Lesser appleworm	4 down from 10
Tufted apple budmoth	1 down from 3
Variegated leafroller	2 down from 3
Obliquebanded leafroller	0 same as last wk

Apple 6/16 to 6/23/04	
Redbanded leafroller	19 down from 60
Spotted tentiform leafminer	116 down from 358
San Jose scale	0 down from 16
Codling moth	8.7 down from 10.3
Lesser	6 up from 4

appleworm	
Tufted apple budmoth	0 down from 1
Variiegated leafroller	0 down from 2
Obliquebanded leafroller	0 same as last wk
Apple maggot (3 trap sum)	13 first report

Site: Medina, Wayne, and Holmes Counties

Ron Becker, IPM Program Assistant

Peach 6/9 to 6/16/04 and 6/16 to 6/23/04			
	County	6/9 to 6/16 1st report	6/16 to 6/23/04
Greater peachtree borer	Holmes	0	0
	Wayne	3	1
	Medina	0	0
Lesser peachtree borer	Holmes	5	2
	Wayne	28	26
	Medina	0	0

Apple 6/9 to 6/16/04	
Redbanded leafroller	Holmes: 22 up from 0
	Wayne: 2.3 up from 0.7
	Medina: 5.8 up from 0
Spotted tentiform leafminer	Holmes: 520 up from 420
	Wayne: 340 up from 316
	Medina: 327 up from 163
Oriental fruit moth	Holmes: 0 same as last week
	Wayne: 0 same as last week
	Medina: 0 same as last week
Codling moth	Holmes: 4 up from 3
	Wayne: 6.1 down from 9
	Medina: 2.1 up from 0.8
Lesser appleworm	Wayne: 20 up from 7

Apple 6/15 to 6/22/04	
Redbanded	Holmes: 15 down from 22

leafroller	Wayne: 8 up from 2.3
	Medina: 12.7 up from 5.8
Spotted tentiform leafminer	Holmes: 540 up from 520
	Wayne: 300 down from 340
	Medina: 720 up from 327
Oriental fruit moth	Holmes: 0 same as last wk.
	Wayne: 0 same as last wk.
	Medina: 0 same as last wk.
Codling moth	Holmes: 1.2 down from 4
	Wayne: 1.8 down from 6.1
	Medina 1.3 down from 2.1
Lesser appleworm	Wayne: 5 down from 20

Scab continues to be the main concern in apples. European red mite, potato leafhoppers, and wooly apple aphids are also being found. Fruit damage by stink bugs was found in peaches.

Site: West District; Huron, Ottawa, Richland, and Sandusky Counties
Lowell Kreager, IPM Scout/Technician

Apple 6/15 to 6/22/04	
Codling moth	1.3 down from 3.0
Lesser appleworm	2.1 down from 10.3
Oriental fruit moth	0.1 up from 0.0
Redbanded leafroller	51.5 up from 14.0
San Jose scale	0.0 same as last wk
Spotted tentiform leafminer	783 up from 518
Peach 6/15 to 6/22/04	
Lesser peachtree borer	4.0 down from 10.0
Oriental fruit moth	0.3 down from 1.5
Peachtree borer	0.0 same as last wk
Redbanded leafroller	33.8 up from 18.8

Beneficials include native lady beetles and lacewings. Other observations include lilac borers.

Site: East District; Erie and Lorain Counties
Jim Mutchler, IPM Scout/Technician

Apple 6/15 to 6/22/04	
Codling moth	2.5 down from 4.4
Lesser appleworm	12.3 down from 19.6

Oriental fruit moth	1.7 up from 1.6
Redbanded leafroller	12.8 up from 5.9
San Jose scale	0.0 same as last week
Spotted tentiform leafminer	567 up from 263
Peach 6/15 to 6/22/04	
Lesser peachtree borer	5.8 down from 21.7
Oriental fruit moth	2.3 down from 3.7
Peachtree borer	1.2 down from 1.3
Redbanded leafroller	12.3 up from 3.7

Beneficials include native lady beetles and lacewings.

Other observations include apple scab, fire blight, and white apple leafhopper.

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Information presented above and where trade names are used, they are supplied with the understanding that no discrimination is intended and no endorsement by Ohio State University Extension is implied. Although every attempt is made to produce information that is complete, timely, and accurate, the pesticide user bears responsibility of consulting the pesticide label and adhering to those directions.

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Keith L. Smith, Associate Vice President for Ag. Adm. and Director, OSU Extension.

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