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THE OHIO STATE UNIVERSITY Newsletter Extension

Fruit ICM News

Volume 8, No. 14
April 29, 2004

In This Issue:

Calendar

May 6: Cider HACCP Training, Fisher Auditorium, South Exhibit Area, OARDC, Wooster, 10 am to 1 pm. Sponsored by Ohio Department of Agriculture. For more information contact Duane Murray at 614-728-6348.

May 10-12: Ohio Wine Competition, Fisher Auditorium, North Exhibit Area and Conference Room, OARDC, Wooster, 2 pm to 6:30 pm. For more information contact Todd Steiner, 330-263-3881.

May 26: Twilight Tree Fruit Field Meeting, Branstool Orchards, Utica, OH. Meet at the farm market on the north side of S.R. 62, 1 ½ miles east of the Utica intersection of S.R. 62 & S.R. 13. Guest speakers will be Dr. Diane Miller and Dr. Mike Ellis.

June 30: Ohio Fruit Growers Society Summer Tour, OARDC Horticulture Unit 2, Wooster, 8 am to 3 pm. Registration fee. For more information contact Tom Sachs at 614-246-8292 or email at growohio@ofbf.org.

August 19: Ohio Grape Research Day, OARDC, Wooster, OH.

Managing Brown Rot

Source: Bill Turechek, Plant Pathology, Geneva, Scaffolds Fruit Journal, Volume 13, No. 6, April 26, 2004

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 55-77F and are spread by wind, rain, and insects. Although conidia can germinate and infect at temperatures between 32 and 90F, optimum temperature for blossom infection of peach range from 70 to 77F. 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 hours of wetness at 60F or 24 hours 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 hours 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 68F). Vangard 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. Vangard has yet to be extensively tested for blossom

blight in New York. In trials conducted in New Jersey, blossom blight programs that included Vangard 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 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 60F) 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)	Vangard	ACNP	ACNP	****	****	****	0

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.

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: 4/22 to 4/28/04 Early petalfall stage on 4/14/04	
Redbanded leafroller	7 down from 45
Spotted tentiform leafminer	22 down from 432

San Jose scale	0 same as last wk.
Codling moth	0 same as last wk.
Lesser appleworm	0 same as last wk.
Tufted apple budmoth	0 same as last wk.

Site: Medina, Wayne, and Holmes Counties
Ron Becker, IPM Program Assistant

Apple: 4/7 to 4/14/04	
Redbanded leafroller	Holmes: 67 up from 51
	Wayne: 39 up from 34
	Medina: 16 same as last wk.
Spotted tentiform leafminer	Holmes: 1800 up from 1200
	Wayne: 225 up from 5
	Medina: 137 down from 500
Oriental fruit moth	Holmes: 0 same as last wk.
	Wayne: 2 up from 0
	Medina: 0 same as last wk.
Codling Moth	Holmes: 0 first report
	Wayne: 0 first report
	Medina: 0 first report

Strawberries were still being irrigated when we stopped (about an inch of ice on them) but all the buds on the tree fruits and grapes seem to be ok.

Site: Sandusky County
Ted Gastier, OSU Agent

Apple: 4/21 to 4/28/04	
Oriental fruit moth	11.5 first report

Site: Sandusky County
Ted Gastier, OSU Agent

Peach: 4/21 to 4/28/04	
Oriental fruit moth	0.0 (trap shutdown with mating disruption)

Pest Phenology

Coming Events	**Degree Day Accum. Base 50 F**
Lesser appleworm 1st flight	49 - 377
Spotted tentiform leafminer sap-feeders present	130 - 325
1st codling moth catch	141 - 491
European red mite egg hatch complete	183 - 298
Plum curculio oviposition scars present	232 - 348

Thanks to *Scaffolds Fruit Journal* (Art Agnello)

Degree Day Accumulations for Ohio Sites April 28, 2004

Ohio Location	**Degree Day Accumulations Base 50**	
	Actual	**Normal***
Akron-Canton	132	131
Cincinnati	246	249
Cleveland	129	124
Columbus	207	182
Dayton	203	206
Kingsville	114	86
Mansfield	130	129
Norwalk	143	108
Piketon	255	221
Toledo	129	109
Wooster	157	117
Youngstown	127	118

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| Back |