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Massachusetts IPM Berry Blast

April 15, 2013

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BLUEBERRY

Mummy Berry ID & Management

ID/Disease Cycle: The first symptom of this disease is browning along the major leaf veins on newly emerging leaf clusters. The leaves wilt quickly and bend to resemble a shepherd's crook. A light gray powdery layer of spores develops at the leaf base. These spores go on to infect flowers and fruit. Infected green berries appear healthy but cutting them open reveals a white fungal growth inside. When berries start to ripen, infected berries appear pinkish tan and slightly ridged. They feel rubbery and contain a gray to black fungal mass inside. Infected berries eventually become faded, shrivel up, and fall to the ground. After the fruit skin has weathered off, the berries look like tiny black pumpkins. The fungus overwinters in the mummified fruit on the ground. In early spring, trumpet-shaped mushroom cups produced on the mummies eject windborne spore that infect young shoots. Frost may increase susceptibility of blueberry shoots to infection. Spores are produced on blighted shoots and are carried to flowers by wind, rain, and insects (bees), resulting in fruit infections. Mummies that fall to the ground provide inoculum for the disease in the following year.



photo credits: 1) MSU Blueberry Facts 2) eXtension fact sheet 3) NC State Fruit Consortium

Damage: The fungus infects and invades the developing fruit rendering it unmarketable.

Management:

Monitoring: Consult scouting records from previous years to determine if build-up of this disease is indicated. Monitor weather conditions to identify likely infection periods. Scout fields beginning at budbreak for symptomatic tissue. This timing often coincides with Forsythia bloom.

Control strategies:

Cultural/Biological:

- Plant resistant varieties whenever possible. Those that are most resistant to the shoot blighting phase of the disease include Bluejay, Darrow, Duke, Elliot, and Toro. Cultivars that are consistently resistant to the fruit infection phase include Northsky, Reka, Northblue, Bluegold, Bluejay, Weymouth, and Patriot. Resistance to fruit infection appears to be unrelated to resistance to shoot blight, and weather factors can also affect cultivar response to the disease.
- Prune bushes to open the canopy to light, air, and spray penetration.
- Cultivate beneath plants in fall and again in early spring to disrupt overwintering inoculum.
- Apply a 3-4" layer of mulch material over the soil surface in early spring before mushroom cups emerge to create a physical barrier to spore release.

Chemical:

- Apply recommended fungicides at budbreak if scouting and weather monitoring indicate risk of infection.
- Time fungicide applications closely to frost/freeze events that predispose tissue to infection.
- Repeat fungicide applications at recommended intervals if weather conditions are conducive to infection.
- Rotate fungicide materials from different FRAC groups to avoid promoting the development of resistant strains of this disease.

Summary Management Table:

Conventional	Organic (OMRI)

	Listed	Cultural
Abound F, 6.2-15.4 oz (0 day phi; Note caution regarding spray near or with equipment also used in apples) Bravo Ultrex, 2.7-3.6 lb (42 day phi) Captec 4L, 0.75-1 qt (0 day phi) Indar 75 WSP, 2 oz (30 day phi) Orbit, 6 oz (30 day phi) Pristine, 18.5-23 oz (0 day phi) Quash, 2.5 oz (7 day phi; must have copy of supplemental label - see: www.cdms.net) Switch, 11-14 oz (0 day phi)	⊗ Actinovate AG, 3-12 oz (0) ⊗ Serenade Max, 1-3 lb (0)	Use resistant varieties Prune for open canopy Cultivate beneath plants after harvest to disrupt inoculum Mulch in early spring to cover inoculum
Read labels thoroughly for application rates and restrictions (REI, PHI, etc.)		
* restricted use material		
⊗ OMRI listed		



Winter Moth Update

Reports from the Southeast show that Winter Moth egg hatch is underway in most areas affected by this pest. Weather models (NEWA) show that the degree day accumulations have reached 160 or more in interior Southeastern MA. GDD accumulations are lower in coastal areas and in most of Rhode Island. Never-the-less, this is the week to be prepared to make a spray application in Blueberries and Apples for this pest. You should consider your blueberries to be at Bud Swell or beyond at this time. Dormant oil can be eliminated from the See recommendations from last week below.

Blueberry Bud Stages and Winter Moth/Spanworm Management

Image and Description Source: [Michigan State University Blueberry Facts website.](#)

Dormant Description: No visible swelling of the fruit buds. Bud scales tightly closed. No visible signs of growth.	Bud Swell Description: First sign of growth as plant growth begins in the spring. Visible swelling of the flower buds; outer bud scales begin to separate at the tip revealing paler interior bud scales. This bud stage can usually tolerate cold temperatures of 10 - 15°F.	Budbreak-Green tip Description: Flower buds open and the individual flowers can be seen between the bud scales. Can tolerate cold temperatures of about 20°F.
Recommendation for Controlling Winter Moth or Spanworm		
Dormant oil, 2-2.5%	Dormant oil, 2-2.5% plus	NO OIL AFTER BUDSWELL

plus Esteem 35WP, 5 oz/A or Confirm 2F, 16 oz /A or Asana XL, 4.8-9.6 oz/A	Confirm 2F, 16 oz/A or Delegate 3-7 oz/A or Assail 70WP, 1.9-2.3 oz/A or Asana XL, 4.8-9.6 oz/A or Esteem 35WP, 5 oz/A	Confirm 2F, 16 oz or Delegate 3-7 oz/A or Asana XL, 4.8-9.6 oz or Esteem 35WP, 5 oz
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For detailed information concerning the biology and management of Winter Moth, visit the following:

<http://extension.umass.edu/landscape/fact-sheets/winter-moth-identification-management>

<http://extension.umass.edu/landscape/fact-sheets/winter-moth-overview>

Archived IPM Berry Blasts are available at the [UMass Extension Fruitadvisor](http://extension.umass.edu/fruitadvisor) website.

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