

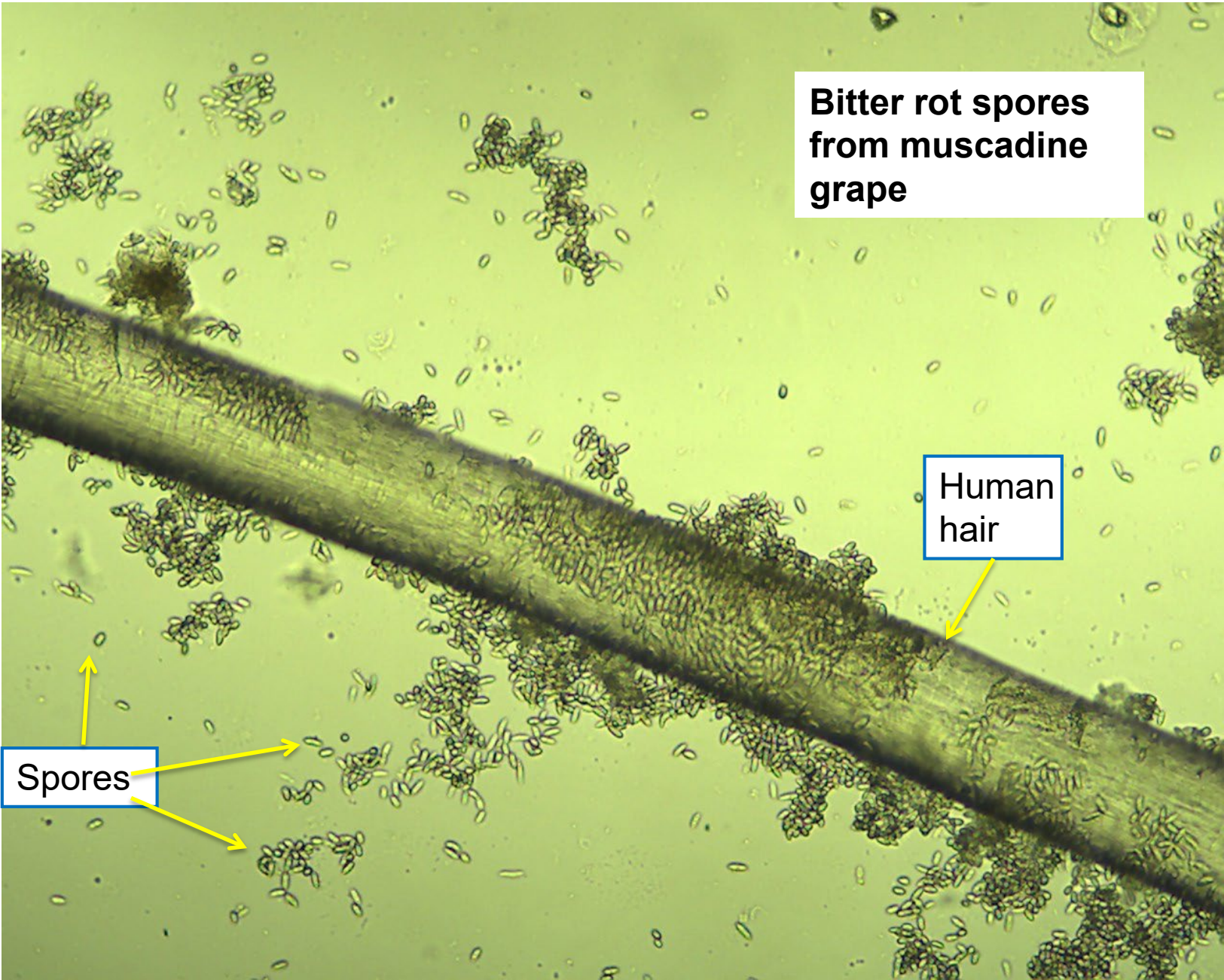


Controlling Fruit Rots on Muscadine Grapes

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A microscopic image showing a dense population of bitter rot spores. A thick, dark, cylindrical human hair is positioned diagonally across the frame. The hair is heavily coated with a thick layer of spores. Numerous individual spores are also visible in the surrounding light green fluid medium. The spores are small, oval-shaped, and have a distinct dark outer shell with a lighter, granular interior. Three yellow arrows point from the 'Spores' label to different locations: one points to a single spore in the fluid, and two point to clusters of spores on the hair.

**Bitter rot spores
from muscadine
grape**

Human
hair

Spores

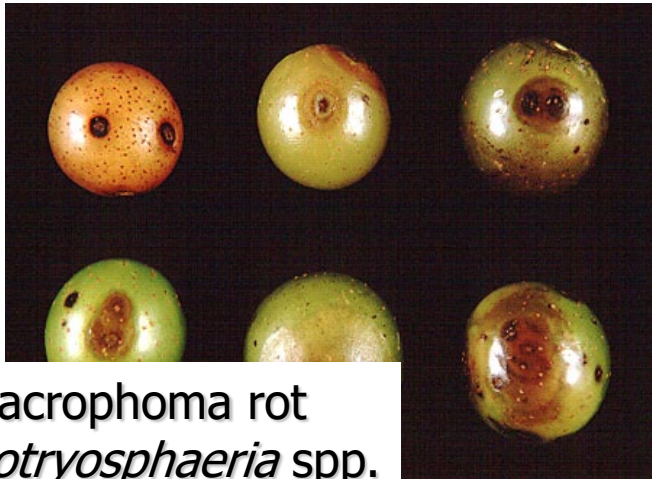




MUSCADINE FRUIT ROTS

SIGNS & SYMPTOMS

Fruit Rots



Macrophoma rot
Botryosphaeria spp.



Ripe rot
Colletotrichum spp.



Bitter Rot
Greeneria uvicola



Sooty mold
Peltaster fructicola



Ripe rot at harvest

Powdery Mildew

- Fungus (*Uncinula necator*)
- Appears as faint white “powder” on young fruit
- Causes brown russeting on surface
- Affected fruit cannot ripen normally; may crack









MUSCADINE FRUIT ROTS

MANAGEMENT AND CONTROL



Good Cultural Practices

- Fertility – avoid over-fertilization
- Canopy management – weed control, summer pruning to promote air movement
- Timely, complete harvest – esp. critical with hand-harvest for fresh
- Winter pruning to remove overwintering diseases

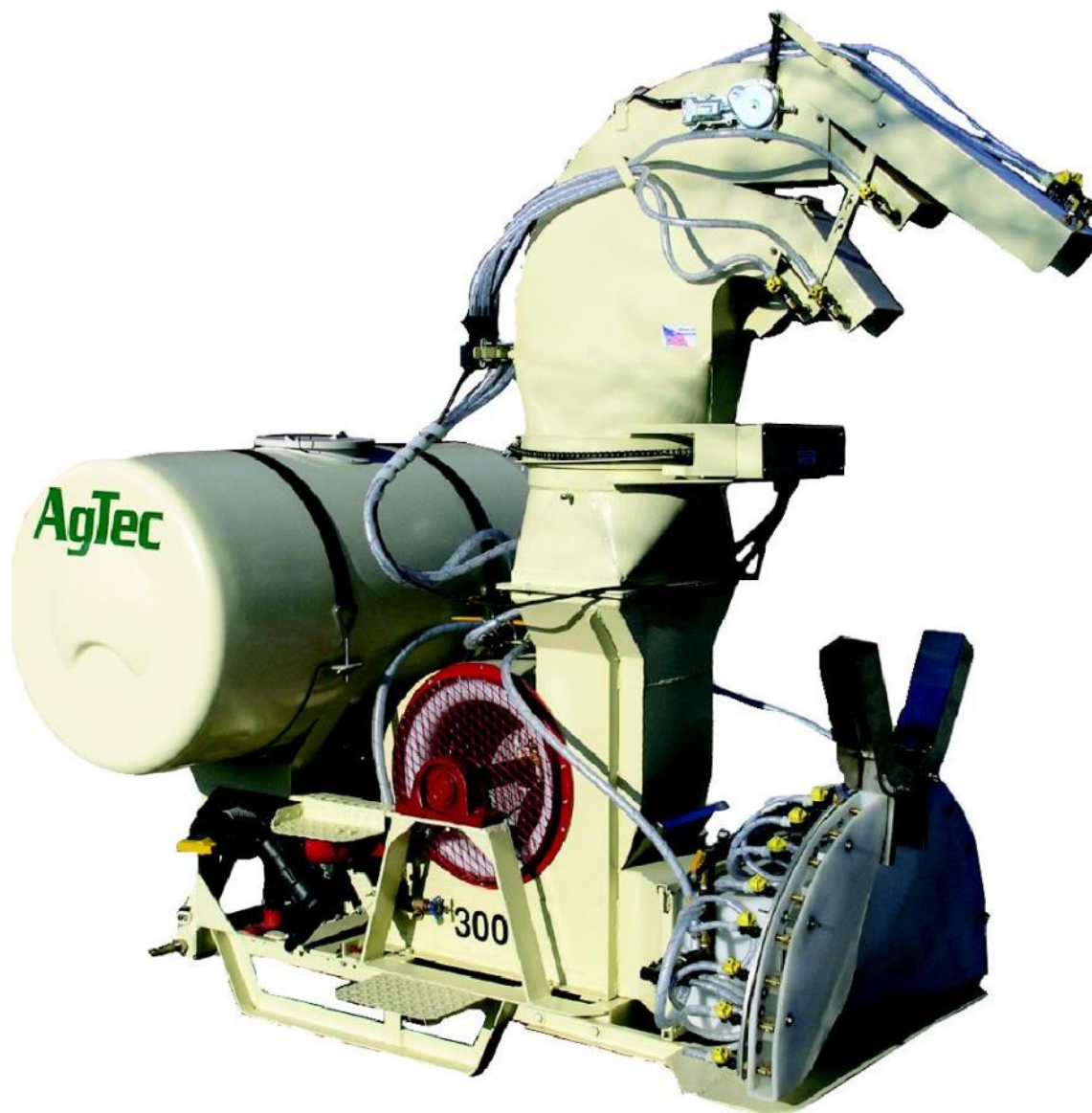
Fungicides, Sprayers and Spray Timing



Sprayers

- Airblast with 20-40 gallons per acre, OR
- High-pressure sprayer with 50-100 gallons per acre
- Sprayer must be designed to reach grapes underneath the canopy





NO

For muscadine disease
Control, spray up, not
down!

YES



<http://www.superbhorticulture.com>



<http://vtpv.ext.vt.edu>

Spray Timing – much simpler for muscadine (compared to Vinifera)

- Mid-May (Before disease is visible!!)
- Shoots 6-10 inches in length
- Flowers not yet open
- Continue every 2 wk until early August
- Early summer sprays provide more disease control than later sprays, because fungicides are mainly protectants
- Write it down



“Standard” Fungicide Recommendations for NC

- Mancozeb early (66 d PHI)
- Alternate or tank mix myclobutanil (Rally) with Captan, apply every 2 wks from Mid-May through August
- Where ripe rot is a problem (shown), replace or supplement Captan with a strobilurin fungicide (such as Abound, Pristine or Flint)
- ALWAYS READ AND FOLLOW THE LABEL!



Ripe rot

Fungicide “Standards” Known to Work	FRAC Code
Captan	M4
Rally	3
Abound	11
Pristine	7+11
Flint	11
Mancozeb	M3

**Labeled for grape but
Never tested on
muscadines until 2020**



“New” Products Evaluated in 2020	FRAC Code
Aprovia	7
Aprovia Top	3+7
Gavel	22+M3
Switch	9+12
Miravis Prime	7+12
Luna Experience	3+7
Topguard EQ	3+11
Kenja	7
Procure	3
Merivon	7+11
Badge (copper)	M1

Treatment and rate per acre	Ripe rot % ^z	Bitter rot %	Macrophoma rot %	Marketable %	Angular leaf spot ^y	
					incidence	severity
Untreated control	2.9 abcd ^x	5.6 a	8.1 a	86.8 a	80.0 a	15.0 a
Aprovia 10.5 fl oz	1.4 abcd	2.6 bc	1.4 cd	94.8 cd	12.5 bc	2.2 bc
Aprovia Top 13.3 fl oz	1.4 abcd	0.1 c	0.9 cd	97.4 cd	1.2 c	1.2 c
Gavel 2.5 lb	2.0 abcd	2.0 bc	3.8 bc	92.2 abc	0.2 c	0.2 c
Switch 14.0 oz	0 d	1.0 c	0.2 d	98.9 d	23.8 b	5.0 b
Miravis Prime 13.4 fl oz	0.3 d	1.2 c	1.1 cd	97.7 cd	7.5 c	1.5 bc
Luna Experience 8.6 fl oz	4.1 a	2.0 bc	3.6 bc	92.2 abc	0 c	0 c
Topguard EQ 8.0 fl oz	0.6 bcd	1.0 c	1.8 cd	97.0 cd	0 c	0 c
Kenja 22.0 fl oz	0.5 cd	1.7 c	0.8 cd	97.4 cd	13.8 bc	2.0 bc
Badge SC 3.5 pt	3.5 abc	4.6 ab	6.0 ab	87.7 ab	8.8 bc	2.8 bc
Procure 8.0 fl oz	3.8 ab	0.6 c	2.6 cd	92.7 bc	10.0 bc	3.5 bc
Merivon 5.5 fl oz	0.8 bcd	0.2 c	1.5 cd	97.4 cd	0.2 c	1.2 c
LSD	3.18	2.78	3.26	5.91	15.76	3.73

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Topguard EQ 8.0 fl oz	0.6 bcd	1.0 c	1.8 cd	97.0 cd	0 c	0 c
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(Cline, Brannen and Breeden, 'Carlos' trial, 2020)

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**No phytotoxicity
observed with any newly
tested products in 2020**

*****Increased marketable
yield (vs no spray)**

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