

List of short PHI materials for Botrytis, powdery mildew, and downy mildew of grape
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REI (Re-Entry Interval) in hours

PHI (Pre-Harvest Interval) in days

Fungicide	FRAC	REI	PHI	Comments
Botrytis (Good to Excellent)				
Elevate	17	12	0	
Luna Tranquility	7+9	12	7	(No longer on the market)
Meteor/Rovral	2	48	7	
Scala	9	12	7	
Switch 62.5WG	9+12	12	7	It may suppress sour rot, and is a good material for ripe rot
Vanguard	9	12	7	
Botrytis (Fair to poor: may not work as a solo application, but would be a nice mixing partner)				
Fungicide	FRAC	REI	PHI	Comments
Topsin-M	1	2	7	Probably no longer effective against Botrytis in many vineyards
Ph-D, Oso	19	4	0	Relatively older material, introduced recently to the US. Limited information is available on their efficacy. It is known to have resistance issues, so, please mix it with another Botrytis material.
Fracture	NC	4	1	Not many information is available.
Champ (and other fixed copper materials, please see Downy mildew section for some examples.)	M1	48	0	Copper is efficacious against Downy and powdery mildew. Discuss with your winemaker the use of copper late in the season.
Captan, Captec 4L/ 50 WP	M4	48	0	It also has efficacy against Downy mildew. Do not mix with oil. Discuss with your winemaker the use of captan late in the season.
Howler/Howler EVO	BM02	4	0	These products may be efficacious against Botrytis and powdery mildew.
Ripe rot and sour rot (the list happen to be similar, use with an insecticide for sour rot.)				
Fungicide	FRAC	REI	PHI	
Switch 62.5WG	9+12	12	7	It suppresses sour rot, and is a good material for ripe rot
Howler/Howler EVO	BM02	4	0	These products are somewhat efficacious against ripe rot and bitter rot.
Ph-D, Oso	19	4	0	These products are somewhat efficacious against ripe rot and bitter rot.
Oximate 5.0	M	1	0	It only works against sour rot AND must be mixed with an insecticide to control fruit flies.

Fungicide	FRAC	REI	PHI	Comments
Powdery mildew				
Armicarb, Kaligreen, Milstop, Nutrol, etc.	M	4	0	It is very good for stopping ongoing powdery mildew, but this type of material (potassium salt) tends to be expensive.
Captan, Captec 4L/ 50 WP	M4	48	0	Has some efficacy on Botrytis and downy mildew. Discuss with your winemaker about the use of captan late in the season.
Champ (and other fixed copper materials, please see the Downy mildew section for some examples.)	M1	48	0	Has some efficacy on Botrytis and downy mildew. Discuss with your winemaker about the use of copper late in the season.
Double Nickel	NC	4	0	Very limited information is available. Worked well when mixed with Oso in our trials. Oso + Double Nickel may suppress sour rot.
Ferbam	M3	24	0	Fair efficacy.
JMS Stylet Oil	M	4	0	It can stop on-going outbreak. Do not mix with captan or sulfur!
Microthiol D (sulfur)	M	24	0	Do not mix with oil!
Oxidate 5.0	M	1	0	Very limited information is available. It works better with sour rot (but it must be mixed with an insecticide to control fruit flies)
Procure	3	12	7	The only group 3 material with 7-day PHI at this point.
Sulfuriox	M2	24	0	Do not mix with oil
Torino	U6	4	3	Different mode of action group. Limited to two applications per year, known resistance issue.

Downy mildew				
Fungicide	FRAC	REI	PHI	
Phostrol, ProPhyt, Agri-Fos, etc.	P07	4	0	Good DM material with a kickback activity. In some situations, mixing a phos acid and a copper material may cause phytotoxicity.
Champ (fixed copper)	M1	48	0	Copper is somewhat efficacious against Botrytis and powdery mildew. Discuss with your winemaker the use of copper late in the season.
Cueva (fixed copper)	M1	4	0	
Cueprofix (fixed copper)	M1	48	0	

There are many other copper materials, please refer to the label for REI and PHI. If you are concerned about copper accumulation in the environment, copper soap-type materials (e.g., Cueva, etc.) tend to have a lower concentration of Cu.

Fungicide	FRAC	REI	PHI	Comments
Downy mildew (cont.)				
Captan, Captec 4L/ 50 WP	M4	48	0	Has some efficacy on Botrytis and powdery mildew. Discuss the use of captan with your winemaker late in the season. Different products may have longer REI. Check the label!
Lifegard	P6	4	0	It has a label for powdery and downy, but it seems to work better with downy mildew. You need to spray preventatively.
Oxiphos	P07+ M	4	0	One of the components is phos acid. I recommend this one if you wish to use with Oxidate.
Zonix	NC	4	0	Our trials showed that it is effective in drier seasons.