

GRAPE (*Vitis vinifera* 'White Riesling')
Botrytis Bunch Rot; *Botrytis cinerea*

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Efficacy of fungicides for management of grape bunch rot, 2022

Fungicide treatments were arranged in a randomized complete block design in a vineyard of 'White Riesling' planted in 1985 on a 7x11 ft spacing. Vines were trained to a bilateral cordon with spur pruning. Vines were pruned from 14 to 17 Feb. Sucker removal occurred periodically during the growing season. Canes were cut above the top wire on 15 Jul and maintained at this height throughout the growing season. Each treatment was replicated on 4 sets of 5 vines. Fungicides were applied using a hooded boom sprayer at 150 psi resulting in 80 gal water/A. Approximately 2.8 gal of a spray suspension were applied per set of 20 vines. All materials were applied focused on the fruiting zone. Leaves were removed from the fruiting zone on the east side of all vines on 20 Jul. Treatments were applied on 1 Jul (50% bloom, BBCH 65), 29 Jul (bunch close, BBCH 78), 13 Sep (late veraison, BBCH 85), and 7 Oct (preharvest). Applications of Microthiol Disperss (5 lb/A) occurred on 1, 9, 21 and 28 Jun, 6, 13, 22 and 28 Jul, 4 and 11 Aug for management of powdery mildew. Fungicide applications for powdery mildew control were applied using a hooded boom sprayer at 150 psi. Movento (12 fl oz/A) was applied on 26 May for erineum mite management. Makaze (32 fl oz/A) plus GoalTender (32 fl oz/A) were tank mixed and applied to all rows on 21 Jan for weed control, while Forfeit 280 (3 fl oz/gal) was applied on 29 Jun for spot management of weeds. Fertilizer (16-16-16 at 30 lb/A) was applied 25 Apr. Nets were placed over eastern most row on 14 Oct to prevent bird damage. Incidence of bunch rot was determined on 5, 12 and 18 Oct by examining 50 clusters from the center of each set of vines. Treatments were also evaluated by calculating the area under disease progress curve (AUDPC) which was calculated by multiplying the mean incidence from three observation dates by the number of days between observations ($\sum [Y_{i+1} + Y_i]/2][X_{i+1} - X_i]$ where Y_i is incidence of bunch rot in percent at i th observation and X_i is the day of the i th observations). Values calculated between each pair of observations are added together to obtain a total AUDPC. Severity of bunch rot was determined on 18 Oct by harvesting 50 clusters (average 18.6° Brix) from the center of each set of vines.

Spring weather conditions were very wet resulting in the second wettest spring on record. After the first fungicide application there was a total of 0.17 in rainfall during bloom and 0.04 in after the preharvest application. Bunch rot symptoms were first observed sporadically throughout the vineyard on 3 Oct. Highest incidence of bunch rot was found on non-treated vines on all rating dates but was significantly higher than the bunch rot found on fungicide treated vines only on 12 Oct. Lowest incidence of bunch rot on 12 Oct was found on vines treated with Elevate alternate Pristine but was not significantly different than the bunch rot found on vines treated with Mevalone alternate Elevate. Lowest AUDPC was found on vines treated with Elevate alternate Pristine but was not significantly different than the bunch rot found on vines treated with Mevalone alternate Elevate. There was no difference in severity of bunch rot among the various treatments including non-treated vines. No phytotoxicity was observed on vines treated with any fungicide.

Treatment & rate/A or /100 gal as indicated below	Time of application*	Bunch rot**				
		% Incidence (5 Oct)	% Incidence (12 Oct)	% Incidence (18 Oct)	AUDPC	% Severity (18 Oct)
Non-treated but leaves were pulled.....	None.....	23.5	40.5 a	93.5	626 a	21.7
Mevalone at 55 fl oz plus OVS 90 NIS at 1 pt/100 gal	All.....	19.5	33.5 b	89.0	553 b	23.6
Mevalone at 55 fl oz plus OVS 90 NIS at 1 pt/100 gal <i>alternate</i>	A, C					
Elevate 50 WDG at 1 lb	B, D.....	17.0	25.5 c	82.5	473 cd	20.9
Mevalone at 55 fl oz plus OVS 90 NIS at 1 pt/100 gal <i>alternate</i>	A, C					
Pristine at 23 oz	B, D.....	19.0	31.0 b	87.0	529 bc	19.4
Elevate 50 WDG at 1 lb <i>alternate</i>	A, C					
Pristine at 23 oz	B, D.....	14.0	24.5 c	82.0	454 d	15.9

* Treatments were applied on A = 1 Jul (50% bloom, BBCH 65), B = 29 Jul (bunch close, BBCH 78), C = 13 Sep (late veraison, BBCH 85), and D = 7 Oct (preharvest).

** Means followed by the same letter do not differ significantly based on Fisher's protected LSD ($P=0.05$). Means without letters are not significantly different.

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