GRAPE (*Vitis vinifera* 'Chardonnay')
Botrytis bunch rot; *Botrytis cinerea*

B. Hed Lake Erie Regional Grape Research and Extension Center, North East, PA 16428
J.W. Travis, Penn State Fruit Research and Extension Center, 290 University Drive, Biglerville, PA 17307

Evaluation of leaf removal, gibberellic acid and fungicides for control of Botrytis bunch rot of grapes, 2009.

This trial was conducted on 9-yr-old vines trained to a four cane kniffen trellis system at the Lake Erie Regional Grape Research and Extension Center in North East, PA. Treatments were applied to 12-vine plots in a randomized complete block design with 4 replications. *Botrytis*-specific fungicides (Vangard and Elevate) were applied with a Friend covered-boom plot sprayer at 100 psi and 100 gal/A. ProGibb (gibberellic acid) was applied with a backpack sprayer at 60 psi and about 106 gal/A. Leaf removal was performed by hand or by Gallagher leaf blower (mechanical). All ProGibb and leaf removal treatments received two applications of *Botrytis* specific fungicide at pre-close and veraison. Other diseases (i.e., powdery mildew, downy mildew, Phomopsis cane and leaf spot, and black rot) were controlled with standard fungicides applied with a Bertaud air blast sprayer. The incidence (percent clusters infected) and severity (percent area infected) of Botrytis bunch rot were determined on 14-16 Oct from 50 clusters per plot. Data were analyzed using analysis of variance.

Wet conditions throughout most of the period from bloom to veraison were conducive to the establishment of latent *Botrytis* cluster infections. However, the first 3-4 weeks of the ripening period were warm, sunny, and dry; bunch rot pressure was low until fruit had developed sugar levels of about 14-15^{o} brix. The remainder of the ripening period was cool and wet, modestly increasing bunch rot pressure. Rainfall for May, Jun, Jul, Aug, and Sep was 5.55, 5.51, 11.65, 7.10, and 6.92 in., respectively. All treatments provided significant control of Botrytis bunch rot (BBR) incidence and severity. Leaf removal by hand at trace bloom (22 Jun) and a four application fungicide program significantly decreased the incidence of BBR over two fungicide applications alone. Both treatments involved early intervention and may have reduced BBR by reducing latent *Botrytis* infections. The timing of leaf removal had significant consequences relative to the two-fungicide program, i.e., leaf removal at trace bloom was superior to leaf removal at veraison whether done mechanically or by hand. However, a similar level of control was achieved by supplementing the two-fungicide program with two additional fungicide applications (at bloom and pre-harvest). ProGibb applications appeared to have little effect on BBR development.

Treatment and rate/A	Application timing[z]	% Infected	% Area Infected[y]	% Control[x]
ProGibb 4% 1.9 fl oz (5 ppm)	2			
Elevate 50 WDG 1 lb	5			
Vangard 75WG 10 oz…….....	6	45.0 cd	3.75 cd[w]	58
ProGibb 4 % 3.8 fl oz (10 ppm)	2			
Elevate 50 WDG 1 lb	5			
Vangard 75WG 10 oz…….....	6	44.0 cd	2.61 abc	70
Leaf removal (hand)	1			
Elevate 50 WDG 1 lb	5			
Vangard 75WG 10 oz…….....	6	23.0 ab	1.03 a	88
Leaf removal (hand)	4			
Elevate 50 WDG 1 lb	5			
Vangard 75WG 10 oz…….....	6	35.5 bc	2.10 abc	76
Leaf removal (hand)	7			
Elevate 50 WDG 1 lb	5			
Vangard 75WG 10 oz…….....	6	51.5 d	4.34 cd	51
Leaf removal (mechanical)	4			
Elevate 50 WDG 1 lb	5			
Vangard 75WG 10 oz…….....	6	40.3 cd	3.16 abc	64
Leaf removal (mechanical)	7			
Elevate 50 WDG 1 lb	5			
Vangard 75WG 10 oz…….....	6	52.0 d	5.82 d	34
Vangard 75WG 10 oz	3, 6			
Elevate 50 WDG 1 lb…….....	5, 8	18.0 a	1.16 ab	87
Elevate 50 WDG 1 lb	5			
Vangard 75WG 10 oz…….. ……...	6	42.0 cd	3.54 bcd	60
Untreated check.....		71.5 e	8.84 e	

[z]Timing: 1 = 22 Jun (trace bloom); 2 = 27 Jun (50-80% capfall); 3 = 29 Jun (late bloom); 4 = 16 Jul (17 days post bloom); 5 = 20 Jul (pre-close); 6 = 19 Aug; 7 = 2 Sep (veraison); 8 = 17 Sep (pre-harvest).
[y]Severity was rated using the Barratt-Horsfall scale and was converted to % area infected using Elanco conversion tables.
[x]Percent control = control of disease severity on berries relative to the untreated check.
[w]Means followed by the same letter within a column are not significantly different according to Fisher's Protected LSD ($P \leq 0.05$).