

8 September, 2004

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Title: Effect of fungicides on *Pythium* root rot on pansy

Host: On 20 July, 2004 *Viola x wittrockiana* (pansy) 'Crown Yellow with blotch' plugs were planted in A815 pots containing Sunshine Mix No. 1. The plants were fertilized with 1/4 tsp. Osmocote Plus 15-9-12 the same day. The test was conducted in a heated greenhouse with poly and shade cloth covering the top and sides.

Inoculation: Plants were inoculated with a mycelial slurry of a culture of *Pythium* sp. grown on V8 juice medium plates and mixed with sterilized water. The slurry was drenched into the potting medium at the rate of 10 ml per pot on 6 August, 2004 and watered in lightly.

Treatments:	Rate/100 gal
A. Water - noninoculated	-----
B. Water - inoculated	-----
C. Aliette 80WDG	12.8 oz
D. Fosphite	64 oz
E. NOA 446510SC-B	17 oz
F. Heritage	0.45 oz
G. Heritage	0.9 oz
H. Subdue MAXX	0.5 oz
I. Subdue MAXX	1.0 oz
J. Heritage/Subdue MAXX	0.45/0.5 oz
K. Heritage/Subdue MAXX	0.45/1.0 oz
L. Heritage/Subdue MAXX	0.9/0.5 oz
M. Heritage/Subdue MAXX	0.9/1.0 oz

Chemical application dates: All treatments were applied as a drench at the rate of 35 ml/A815 pot on 29 July, 12 and 26 August, 2004.

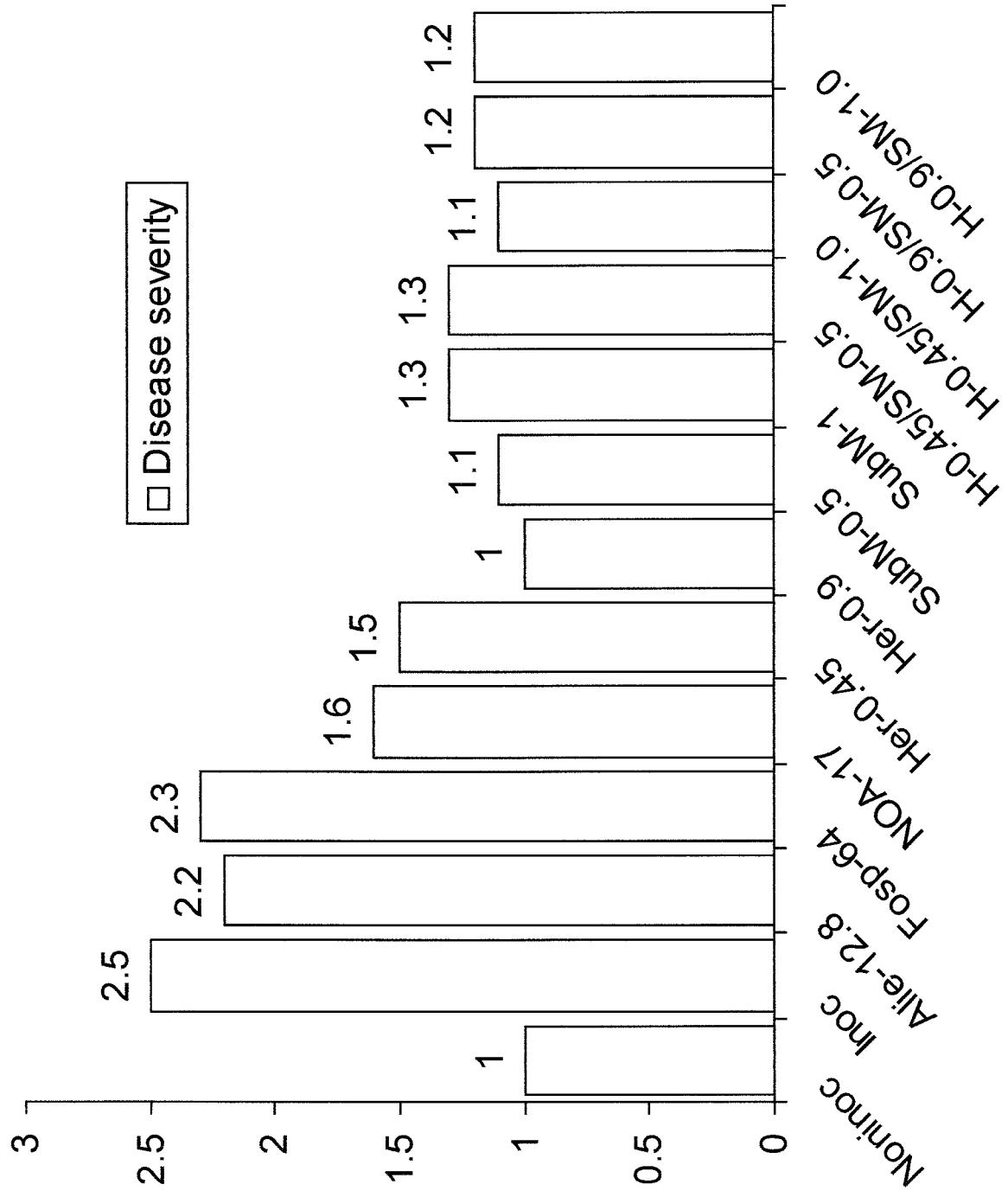
Date	Time applied	Air temperature	Water temperature	Weather
29 July	7:30 AM	23.3 C	23.0 C	clear
12 August	7:30 AM	25.5 C	26.0 C	clear
26 August	8:40 AM	26.7 C	24.0 C	clear

On 7 September, 2004 disease symptoms were rated using the following scale: 1-no disease, 2 - slight, 3 - moderate, 4 - severe to 5 - plant dead.

Trt	1	2	3	4	5	6	7	8	9	10	Mean
A.	1	1	1	1	1	1	1	1	1	1	1.0 a
B.	3	3	2	2	2	3	3.5	3	3	1	2.5 b
C.	1	3	2.5	2	2	2	3	3	2	2	2.2 b
D.	2	2.5	1	4	1	2	1	2.5	2	5	2.3 b
E.	1	1	4	1	1	1	1	1	2.5	2.5	1.6 a
F.	1	2.5	2	2	1	1	2	1	2	1	1.5 a
G.	1	1	1	1	1	1	1	1	1	1	1.0 a
H.	1	1	2	1	1	1	1	1	1	1	1.1 a
I.	2.5	1	1	1	2	1	1	1	1	2	1.3 a
J.	2	1	2	2	1	1	1	1	1	1	1.3 a
K.	1	1	1	1	1	1	1	1	2	1	1.1 a
L.	1	2	1	2	1	1	1	1	1	1	1.2 a
M.	2	1	1	1	1	1	1	1	2	1	1.2 a

Source	DF	Sum of squares	Mean square	F value	P value
Treatment	12	33.8	2.817	6.91	<0.0001
Error	117	47.7	0.408	highly significant	
Total	129	81.5			

Conclusions: The 12.8 oz Aliette 80WDG and 64 oz Fosphite treatments showed worst disease symptoms. The noninoculated control and high rate of Heritage alone were the only treatments that were disease-free at this rating. All other treatments had slight disease symptoms at this time but were not significantly different than the noninoculated control.

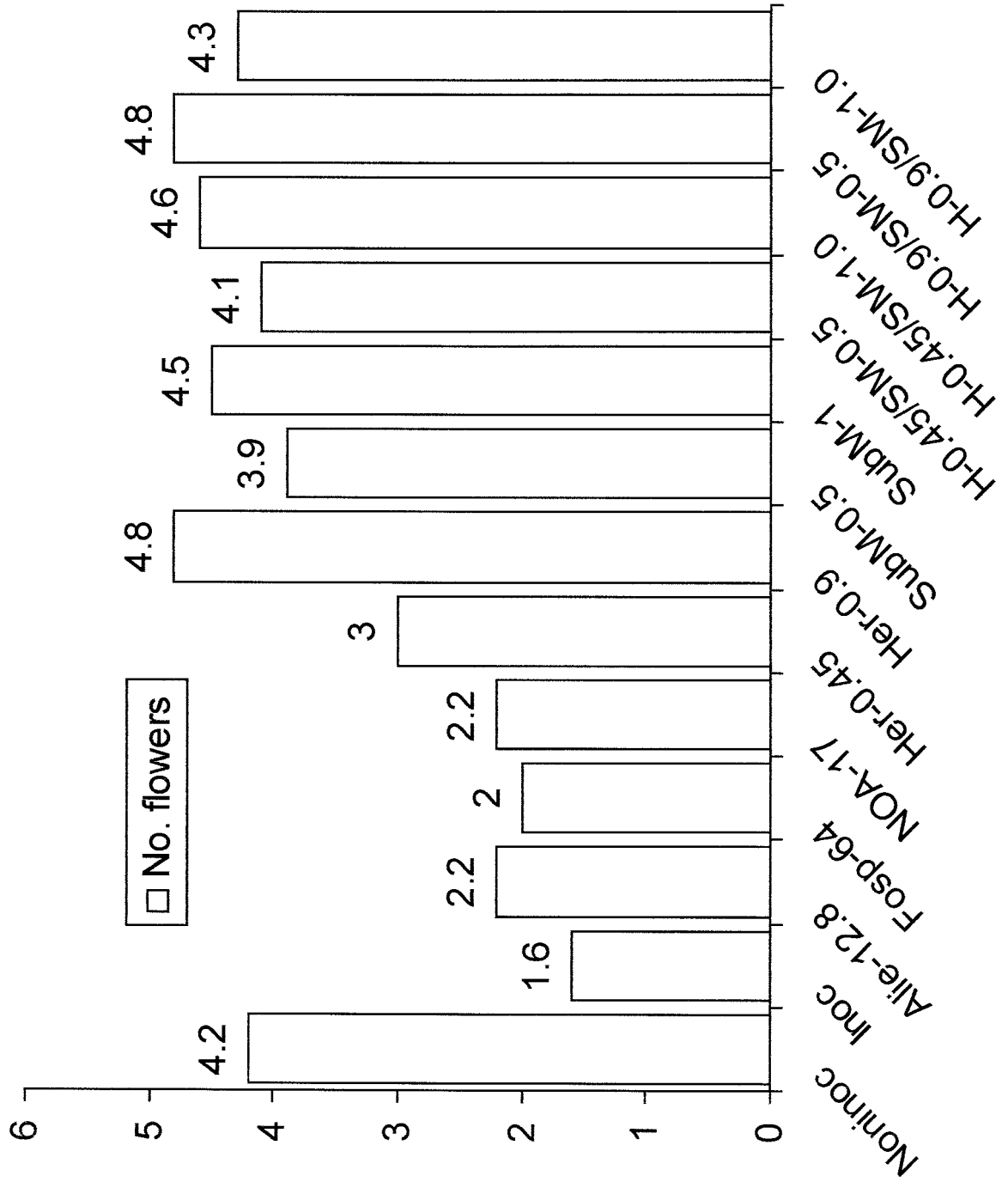


On 7 September, 2004 the number of flowers per pot was recorded.

Trt	1	2	3	4	5	6	7	8	9	10	Mean
A.	5	3	4	5	3	4	4	5	5	4	4.2 bc
B.	3	0	3	1	2	2	1	0	1	3	1.6 a
C.	3	3	4	0	0	2	2	0	3	5	2.2 ab
D.	4	4	3	0	2	1	1	0	5	0	2.0 a
E.	3	3	0	3	1	4	3	3	1	1	2.2 ab
F.	7	2	1	2	2	6	2	2	3	3	3.0 abc
G.	5	4	6	4	5	6	3	5	5	5	4.8 c
H.	7	1	5	5	2	4	3	3	5	4	3.9 bc
I.	3	6	3	6	5	6	3	3	4	6	4.5 c
J.	7	6	3	7	3	4	4	2	2	3	4.1 bc
K.	3	4	5	2	2	6	5	6	6	7	4.6 c
L.	4	5	4	5	7	3	6	7	2	5	4.8 c
M.	3	5	4	5	8	4	2	3	5	4	4.3 bc

Source	DF	Sum of squares	Mean square	F value	P value
Treatment	12	166.9	13.91	5.63	<0.0001
Error	117	289.2	2.47		highly significant
Total	129	456.1			

Conclusions: The highest flower counts were found on plants in the 0.9 oz Heritage, 1.0 oz Subdue MAXX, Heritage/Subdue Maxx 0.45/1.0 oz and Heritage/Subdue MAXX 0.9/0.5 oz treatments. The Water control, 0.5 oz Subdue MAXX and remaining Heritage/Subdue MAXX combination treatments had slightly fewer flowers. The least flowers were found on the inoculated control, Fosphite, Aliette and NOA446510SC-B treatment plants. The flower counts did reflect plant vigor and therefore the ability of the fungicides to prevent Pythium blight.



Summary of the effect of fungicides on Pythium root rot on pansy

Treatment	Rate/100 gal	Disease 7 September	No. Flowers 7 September
Water - noninoculated	-----	1.0 a	4.2 bc
Water - inoculated	-----	2.5 b	1.6 a
Aliette 80WDG	12.8 oz	2.2 b	2.2 ab
Fosphite	64 oz	2.3 b	2.0 a
NOA446510SC-B	17 oz	1.6 a	2.2 ab
Heritage	0.45 oz	1.5 a	3.0 abc
Heritage	0.9 oz	1.0 a	4.8 c
Subdue MAXX	0.5 oz	1.1 a	3.9 bc
Subdue MAXX	1.0 oz	1.3 a	4.5 c
Heritage/Subdue MAXX	0.45 oz 0.5 oz	1.3 a	4.1 bc
Heritage/Subdue MAXX	0.45 oz 1.0 oz	1.1 a	4.6 c
Heritage/Subdue MAXX	0.9 oz 0.5 oz	1.2 a	4.8 c
Heritage/Subdue MAXX	0.9 oz 1.0 oz	1.2 a	4.3 bc