

**Evaluation of the fungicide Broadform for the control of Phytophthora root rot on calibrachoa, 2019.**

Thirty-six cell liner trays of calibrachoa 'Cabaret Purple' were purchased from a commercial greenhouse and transplanted into 4-in. pots containing a soilless media (Suremix MI Grower Products Inc, Galesburg MI) that had been autoclaved for 45 min. Inoculum was prepared by growing *Phytophthora drechsleri* on V8 agar for four weeks. Flasks filled with two parts millet and one-part water were sterilized. Six, 1.5-in. plugs of the infested agar were placed into each flask and the infested millet was allowed to grow for three weeks before inoculation. Plants were watered as needed and fertilized three times weekly with 200 ppm of Peters 20-20-20 waters-soluble fertilizer (ICL Specialty Fertilizers, Dublin, OH). Greenhouse temperatures averaged 77.1°F during the experiment with a high of 104.5°F and a low of 63.5°F. Plants were inoculated by burying 0.04 oz of infested millet one cm from the base of the plant on 2 Aug. All treatments were applied postinoculation as a drench (3 fl oz/pot) or spray until glistening on 2 Aug. Treatments were reapplied at the intervals described in the table below. A plant health rating (1 to 5; 1=healthy, 2=chlorosis/stunting, 3=minor wilting, 4=moderate/severe wilting, 5=plant death) was assessed on 5, 12, and 27 Aug and plant death (%) was noted on 12 and 27 Aug. Data were analyzed using SAS PROC GLM and statistical differences were compared using the Fisher's Protected Least Significant Differences test ( $P=0.05$ ).

Disease pressure was severe in this experiment. The plant health rating of the untreated inoculated control plants indicated that disease increased over a 3-wk period from 2.5 (chlorosis/stunting) to 4.7 (moderate/severe wilting). Plant death was 66.7% on 12 Aug and increased to 83.3% by the final rating on 27 Aug. Broadform SC was not effective against *P. drechsleri* regardless of rate, interval, or application method (drench vs. spray); plant health and death was similar to the untreated inoculated control throughout the study. Applications of Subdue MAXX and Segovis were highly efficacious against *P. drechsleri* and treated plants remained asymptomatic over the course of the study, similar to the untreated inoculated control plants. Phytotoxicity was not observed on any of the treated plants in this study.

Treatment and rate/100 gal, application method and dates	Plant health*			Plant death (%)	
	5 Aug	12 Aug	27 Aug	12 Aug	27 Aug
Untreated uninoculated control	1.0 a**	1.0 a	1.0 a	0.0 a	0.0 a
Untreated inoculated control	2.5 b	4.3 b	4.7 b	66.7 b	83.3 b
Broadform SC 2 fl oz, drench, 2 and 23 Aug	1.7 ab	4.3 b	5.0 b	66.7 b	100.0 b
Broadform SC 2 fl oz, drench, 2 Aug	2.2 b	5.0 b	5.0 b	100.0 b	100.0 b
Broadform SC 4 fl oz, drench, 2 and 23 Aug	1.8 ab	4.2 b	5.0 b	66.7 b	100.0 b
Broadform SC 4 fl oz, drench, 2 Aug	1.8 ab	4.8 b	4.8 b	83.3 b	83.3 b
Subdue MAXX 1 fl oz, drench, 2 Aug	1.0 a	1.3 a	1.0 a	0.0 a	0.0 a
Segovis SC 1 fl oz, drench, 2 Aug	1.0 a	1.2 a	1.0 a	0.0 a	0.0 a
Broadform SC 4 fl oz, spray, 2 and 23 Aug	1.8 ab	4.2 b	5.0 b	66.7 b	100.0 b

\*Disease severity rated on a scale of 1-5, 1=healthy, 2=chlorosis/stunting, 3=minor wilting, 4=moderate/severe wilting, 5=plant death.

\*\*Column means with a letter in common are not significantly different (Fisher's LSD;  $P=0.05$ ).