GERANIUM (*Pelargonium* x *hortorum* 'Pinto White')
Pythium root rot; *Pythium irregulare*

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Evaluation of drench fungicide applications for the control of Pythium root rot of geranium, 2021.

Inoculum was prepared by growing an isolate of *Pythium irregulare* for two weeks on V8 agar. Flasks filled with two parts millet and one-part water were autoclaved for 45 minutes. Six, 2-cm diameter plugs of the colonized agar were then placed into the flasks containing millet to grow for two weeks. The infested millet was mixed into an autoclaved soilless medium (Suremix MI Grower Products Inc., Galesburg MI) at a rate of 2.0 g/4 in. pot. Six-week-old geranium seedlings from a 128-plug tray were transplanted into the pots containing the inoculum on 9 Aug. Immediately after transplanting, the fungicide treatments were applied as a soil drench in sufficient volume (3 fl oz/pot) to displace approximately 10% of the liquid in the pots. Six, single-plant replicates per treatment were arranged in a completely randomized design. Greenhouse temperatures averaged 81.0°F during the experiment with a high of 102.3°F and a low of 70.7°F. Plants were watered as needed and fertilized twice weekly with 200 ppm Peters 20-20-20 water soluble fertilizer (ICL Fertilizers, Columbia, MO). Plant height (cm) was recorded on 23 Aug as an indirect measurement of root health. Plant health (0 to 5; 0=healthy, 1=minor stunting, 2=moderate stunting and chlorosis, 3=severe stunting, 4=wilting/necrosis, 5=plant death) was also measured to include information regarding chlorosis and wilting. Homogeneity assumptions were checked using Levene's test (P<0.05). Height data were transformed using square root and back-transformed data are presented. Data were analyzed through ANOVA using SAS PROC GLM procedure (P=0.05).

Disease pressure was low to moderate in this trial with stunting being the only significant difference between the untreated inoculated and the untreated uninoculated plants. None of the treatments included in this study resulted in plants that were similar in size to the untreated uninoculated plants. The applications of FenStop and Segway resulted in the lowest plant health ratings in the experiment. Severe stunting was the most common symptom observed on the FenStop treated plants and it appeared to be due to phytotoxicity rather than infection by *P. irregulare*. None of the treatments in this experiment resulted in a significantly lower plant health rating. Plants treated with Subdue MAXX were taller on average than untreated inoculated plants, but the difference was not statistically significant. Plants treated with Subdue MAXX were significantly taller than all other fungicide treatments.

Treatment and rate/100 gal	Plant health[*]	Plant height (cm)
	23 Aug	23 Aug
Untreated uninoculated	0.0 a[**]	7.5 a
Untreated inoculated	0.5 a	5.2 bc
FenStop SC 7 fl oz	2.7 cd	2.4 d
FenStop SC 14 fl oz	2.8 d	2.5 d
Segway SC 3 fl oz	2.2 c	4.3 c
Subdue MAXX 1 fl oz	0.0 a	6.2 b
Oxidate 128 fl oz	1.2 b	4.8 c

[*]Plant health rating was from 0 to 5; 0=healthy, 1=minor stunting, 2=moderate stunting and chlorosis, 3=severe stunting, 4=wilting/necrosis, 5=plant death.
[**]Column means with a letter in common are not statistically different (LSD test; P=0.05).