IMPATIENS (*Impatiens walleriana* 'Accent Premium White')
Downy mildew; *Plasmopara obducens*

J.R. Spafford, B.R. Harlan, and M.K Hausbeck
Michigan State University
Department of Plant, Soil, and Microbial Sciences
East Lansing, MI 48824

Evaluation of fungicides for the control of downy mildew of impatiens in the greenhouse, 2023.

This experiment was conducted in a research greenhouse on the campus of Michigan State University. Bedding impatiens 'Accent Premium White' were seeded into 288-cell flats and transplanted into 4-in. plastic pots containing a soilless media (Suremix MI Grower Products Inc, Galesburg MI). All plants were fertilized weekly with 200ppm of Peters water-soluble fertilizer (ICL Specialty Fertilizers, Dublin, OH). Treatments were arranged in a completely randomized design with six replicates, a single plant represented an experimental unit. Plants were approximately 6-in. tall at the initiation of the experiment. All treatments, except for Segovis SC which was applied as a drench, were applied with a hand-pressurized sprayer until glisten on 12 May. On 15 May, the plants were moved from the greenhouse to a growth chamber set at 17°C with 16 hrs/day of low light intensity. A sporangial suspension was prepared by placing diseased impatiens leaves exhibiting prolific pathogen sporulation into distilled water and agitating to release sporangia. The resulting suspension was sprayed onto the plants on 15 May using a janitorial spray bottle, after which the plants were placed into translucent bags which were immediately closed to provide a high relative humidity environment. The plants were removed from the bags on 19 May. On 22 May the plants were placed back into clear plastic bags to provide high relative humidity. The percentage of leaves with *P. obducens* sporulation were estimated on 30 May. On 5 Jun, the number of healthy leaves and the number leaves with *P. obducens* sporulation were counted and the percentage of diseased leaves calculated. Data were analyzed using RStudio and statistical differences were compared using the Fisher's Protected Least Significant Differences test (P=0.05).

Disease pressure was severe in this experiment with the untreated control plants averaging 79.3% leaves with sporulating *Plasmopara obducens* on 2 Jun. On 30 May all treatments were more effective than the untreated control. Segovis SC 3.2 fl oz, Stature SC 12.25 fl oz, and Pageant 38 WG 18 oz were more effective than the untreated control and Avelyo SC. On 2 Jun Avelyo SC 8 fl oz was similar to the untreated control (<0.0001), whereas all other treatments effectively reduced disease. Phytotoxicity was not observed on any of the treated plants in this study.

	Leaves with sporulating *P. obducens* (%)	
Treatment and rate/100 gal; *application method*	30 May	2 Jun
Untreated inoculated	88.3 a[z]	79.3 a
Segovis SC 3.2 fl oz; *drench*	0.0 c	0.0 b
Stature SC 12.25 fl oz; *spray*	0.0 c	0.0 b
Pageant 38 WG 18 oz; *spray*	0.2 c	0.8 b
Avelyo SC 8 fl oz; *spray*	69.2 b	73.2 a
P-value	*<0.0001*	*<0.0001*

[z]Column means with a letter in common are not significantly different (Fishers protected LSD; P=0.05)