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A Chemical-free Companion® for Beautiful Poinsettias

Dan Schantz Greenhouse grew 776,000 bright & healthy poinsettias this year, without a touch of chemical fungicides. What is the Schantz secret? Companion® Biological Fungicide.

According to Paul Hardiman, lead grower at Dan Schantz Greenhouse, Schantz drenched its poinsettias with Companion® at a rate of 16 oz. per 100 gallons once every 3 weeks, starting immediately after callous formation. Completely chemical-free, the poinsettias displayed exceptionally healthy roots and lush top growth.

Companion® is an EPA-registered biological fungicide used for the prevention of soil borne diseases such as Pythium, Rhizoctonia, Phytophthora and Fusarium. The biological fungicide, developed and marketed by Growth Products, Ltd., contains *Bacillus subtilis* GB03, a patented form of a naturally-occurring beneficial bacterium.

The beneficial *Bacillus subtilis* GB03 microorganisms in Companion® combat pathogens in the growing environment in multiple ways. Three recognized modes of action include direct competition, predation, and the production of antibodies.

- *Direct competition:* When introduced into the soil, the *Bacillus subtilis* microorganisms compete by literally crowding out their disease-producing competitors. The beneficial *Bacillus* microbes take up spaces in the soil that pathogens might otherwise inhabit, and compete with pathogens for food sources.
- *Predation:* *Bacillus subtilis* disrupts the cell-wall formation of pathogenic microbes, causing the pathogens to desiccate and die.
- *Production of antibiotics:* The beneficial bacteria produce antibiotics and other toxins that disable or kill the noxious microbes.

Companion® also causes plants to produce their own natural biostimulants and auxin-like substances that increase root mass. At Dan Schantz Greenhouse, Paul consistently notes exceptionally healthy root growth on poinsettias grown with the biofungicide (see photos). And -- as everyone knows -- healthier roots lead to healthier plants.

Of great importance to Paul and others who use Companion® is the biological fungicide's environmental-friendly profile. Companion has a 4-hour re-entry interval, is safe and non-toxic for workers, is not harmful to beneficial insects, does not have any measurable phytotoxicity, and prevents the development of disease resistance in plants.

According to Growth Products, the use of Companion® is cost competitive with chemical fungicides (see "Cost Comparison Chart" below). However, Paul Hardiman has never calculated the cost. "I didn't want to be influenced by cost differences either way," he

declares. "My goal was to grow the best possible plant, regardless of cost. And poinsettias grown with Companion® have better health, better roots, better everything."

For more information on Growth Products' recommended Poinsettia Program, see http://www.growthproducts.com/markets/horticulture/hort_poinsettia_program.cfm or call Growth Products at (800) 648-7626.

Cost Comparison Chart

Product	Active Ingredient	Rate* per 100 gal	Cost ** per oz.	Cost per 100 gal	Retreat Interval
Companion ® Biological Fungicide	Bacillus subtilis GB03	16 oz	\$0.80	\$12.80	3 wks
Clearys 3336 FLO	Thiophanate Methyl	16 oz	\$1.90	\$30.40	3- 4 wks
Truban 25% EC	Etridiazole	4	\$2.28	\$9.12	3- 4 wks
Truban 30% WP	Etridiazole	6	\$2.43	\$14.58	3- 4 wks
Banrot WP	TRM + Etridiazole	8	\$2.59	\$20.72	3- 4 wks
Subdue Max 21.3%	Mefenoxam	.5 -1	\$6.61	\$6.61	3- 4 wks

* Based on medium of low and high rates

** Based on 2006 Distributor list prices