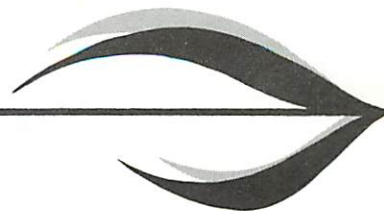




FLOWER AND NURSERY REPORT

FOR COMMERCIAL GROWERS



CONTROL OF GARDEN CENTIPEDE ON GREENHOUSE SPRAY CHRYSANTHEMUMS

Progress Report

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Garden centipede (symphylids), *Scutigerella immaculata*, can be a serious pest on greenhouse chrysanthemums. The insect feeds on the roots, injuring or destroying them, and thus stunts or kills the plant. Control is difficult because the symphylids can freely move through the soil in all directions through cracks, crevices, and small tunnels resulting from the decaying of plant roots. Most growers of greenhouse spray chrysanthemums plant in ground beds and steam-sterilize the soil for disease and weed control. Steam sterilization, however, is ineffective against symphylids, because they move downward in the soil beyond the effective range of the heat.

Two greenhouse trials were conducted. The first was to determine if an application of Dyfonate® 2 G* to several varieties of spray chrysanthemums would result in any phytotoxicity. The second was to determine the effectiveness of Dyfonate® 2 G in controlling symphylids under greenhouse conditions.

In the phytotoxicity trial, eight unrooted cuttings each of the varieties 'Pink Marble,' 'White Marble,' 'Yellow Marble,' 'Dramatic,' 'Showoff,' 'B.G. Golden Starburst,' 'Starburst,' 'Sting Ray,' 'Red Beauregard,' 'Dolly,' 'Yellow Polaris,' and 'Polaris' were planted in two rows across each of two beds and treated at the rate of 1.5 and 3.0 pounds

Dyfonate® 2 G per 1,000 square feet. The Dyfonate® 2 percent granules were carefully spread by hand to obtain as uniform an application as possible. An intermittent mist system was in operation until cuttings were rooted and established. Beds were then irrigated by means of the Gates system, which consists of a semi-rigid plastic pipe around the perimeter of the ground bench with nozzles that spray the water in a fan-shaped pattern toward the center of the benches. The soil is a Sorrento fine sandy loam amended with 10 to 15 percent ground fir and redwood bark.

Observations for phytotoxicity were made throughout the cropping period by comparing treated plants with untreated plants. No phytotoxicity was observed on any of the 12 varieties tested.

In the second trial, effectiveness of Dyfonate® 2 G in controlling garden symphylids was determined by measuring the yield and quality of spray chrysanthemums. 'Pink Marble' was planted, treated, and watered the same as previously described. The beds used in the experiment were selected, because the previous crop had sustained severe damage from heavy symphylid infestations. Dyfonate® 2 G was used at the same rates as those in the first experiment. Each treatment was replicated three times.

*Dyfonate® 2 percent granules = o-ethyl S-phenyl ethylphosphonodithioate.

® Registered trade name.

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At harvest the average number of sprays, bunches, and number of sprays per bunch were recorded (see table). The application of Dyfonate® 2 G improved the quality and increased the yield of 'Pink Marble' spray chrysanthemums at both the 1.5- and 3.0-pound rates when compared to the untreated check. In the untreated plots, it took an average of 6½ sprays to make a bunch, whereas in the treated plots, it took less than 6 sprays per bunch, resulting in a yield increase of 17.7 percent.

There were no visible symptoms of phytotoxicity due to the chemical treatment. However, there was evidence of damage caused by garden centipedes feeding on roots in the untreated check as early as 2 weeks after planting. Plants were wilted even though the soil was supplied with adequate water. Upon investigation, the root systems

were very sparse and damaged by centipede feeding. The plants remained under stress throughout the growth period, resulting in small, weak stems, smaller flower sprays, and smaller, inferior flowers at harvest.

In conclusion, it appears that under California conditions an application of Dyfonate® 2 percent granules reduces garden symphylid injury and thus improves yield and quality of spray chrysanthemums grown in greenhouse benches. Dyfonate® has not yet been registered on greenhouse ornamentals and its use at this time would be illegal.

ACKNOWLEDGMENT

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EFFECT OF DYFONATE® 2 G ON YIELD AND QUALITY OF SPRAY CHRYSANTHEMUMS
PLANTED IN SOIL INFESTED WITH SYMPHYLIDS

Treatment	Rate per 1,000 sq. ft. (pounds)	Average of three replications		
		Number sprays	Number bunches	Number sprays per bunch
Control	0	52.3	7.9	6.6
Dyfonate® 2 G	1.5	55.0	9.4	5.8
Dyfonate® 2 G	3.0	54.9	9.6	5.7