

Fosphite Control of Snapdragon Root Rot Disease
Gene Arthur , Pest / Disease Manager
Coast Nurseries , Inc.
Somis, Ca. 93066

Introduction

Crown and Root rot disease (*Phytophthora spp.*, *Pythium spp.*) cause serious losses in Snapdragon production. Infection can occur at any time during Snapdragon production. The disease can infect the roots or the base of the plant (crown) at the soil line. Plants may wilt and suddenly die or the leaves may simply turn yellow. A dark sunken area may be seen on the stem at or near the soil line and roots may appear rotted. Some plants may survive but remain weak and stunted. Phytophthora causes large economic losses each year to the floriculture industry. This trial was conducted to test the efficacy of Fosphite (Phosphorus acid fungicide) under field conditions compared to commercial product for the control of Root rot and Crown rot disease.

Materials and Methods

The trial was set up at Coast Nurseries Inc. at Somis, California. 10 Snapdragon flats, each contained 48 plants were used for the trial. A completely randomized design was employed with four treatments and five replicates. The designed experiment included plant quality evaluations, which are very important for the floriculture industry. Uniformity, salability and percentage of loss were evaluated. Each replicate had 100 plants; twenty plants were examined for crown and root rot disease symptoms. Fosphite (2/3 oz / gal). Was compared to a conventional treatment (Aliette/Dithane, 48 oz / 24 oz / 100 gal.) as well as another competing fungicide product (Stature, 120z/100 gal.). All treatments were applied at the rate of 200 gallons per acre. The trial was conducted on February 22nd, 2000 and lasted for four weeks. Only one application of Fosphite was applied with two applications of both the conventional and Stature treatments. Data was collected for treatment infection levels using the University of California pathogenicity rating scale (0-5) at weekly intervals.

<u>Scale</u>	<u>% Infection</u>
6	0%
7	1-10 %
8	10-30 %
9	30-70 %
10	70-90 %
11	90-100 %

Applications were made with a hand powered backpack sprayer. All applications were applied to the point of run-off, approximately 200 gallons per acre. Applications were applied in the morning when air temperatures were below 90° F.

Results

After four weeks, crown root and root rot infection was relatively low in treatment blocks when compared to the control. The three treatments were significantly lower in infection percentage compared to the control. Ranking was as follows: Fosphite > conventional > Stature > Control. There was no phytotoxicity observed in any of the treatment blocks. Results are summarized on table 1.

Table 1 Fosphite trial to control Crown root and Root Rot disease on Snapdragon

	DISEASE	UNIFORMITY	SALEABILITY	LOSS
FOSPHITE	0.5	4.25	4.25	0
ALIETTE/DITHANE	1	3.5	3.5	1
STATURE	1.5	3.5	3.5	2
CONTROL	4	2	1	3

