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Antirrhinum majus L. Seedling Growth Decreased from Fungicide Drenches

T.C. Weiler and T.I. Kirk

Susceptibility of Antirrhinum majus, snapdragon, to Phytophthora cactorum stem rot (2) has encouraged the application of preventive fungicide solutions to the soil immediately after seedlings are transplanted. Some producers have suspected that growth is reduced by treatment and have ascribed blame to particular fungicides or combinations of fungicides.

Eight-week-old 'White Butterfly' and 'Christina' snapdragon seedlings were transplanted from seed flats February 13, 1979, to 10 cm clay pots with a growing medium of silt loam, peatmoss, and perlite (1:2:2 by volume) amended to optimum nutrient levels and pH (3). The same day the growing medium was drenched with various fungicides at commercially used rates (1,4). Treatments were as follows:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Diazoben (Dexon WP)</th>
<th>Ethazol (Truban EC)</th>
<th>PCNB (Terraclor WP)</th>
<th>Benomyl (Benlate WP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>D</td>
<td>25</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
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<td>0</td>
<td>26</td>
<td>0</td>
</tr>
<tr>
<td>DP</td>
<td>25</td>
<td>0</td>
<td>26</td>
<td>0</td>
</tr>
<tr>
<td>B</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>107</td>
</tr>
<tr>
<td>E</td>
<td>0</td>
<td>9</td>
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<td>BE</td>
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<tr>
<td>DB</td>
<td>25</td>
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<td>107</td>
</tr>
</tbody>
</table>

Rates of application were: diazoben 0.6 gm/1 (8 oz/100 gal), ethazol 0.31 ml/1 (4 fl oz/100 gal), PCNB, 0.3 gm/1 (4 oz/100 gal), benomyl 1.8 gm/1 (24 oz/100 gal).

The plants were grown in a 12°C (55°F) greenhouse under natural photoperiod. Growth was measured 4 weeks after transplanting. Data were averaged over the 2 cultivars since no differences were observed between them.

Plant height, fresh weight, and dry weight were less than the control after all fungicide applications (Figure 1). Drenches containing benomyl or diazoben severely reduced growth, and when used in combination, growth was most restricted. Thus greatest productivity probably can be expected from a growing medium during early growth free of pathogens as well as free of preventive fungicides.

1'Associate Professor and Research Technician, Department of Horticulture.
Figure 1. Growth of snapdragon seedlings with and without (C) various soil-applied fungicide applications.
LITERATURE CITED


In The Fall...

HOLLAND BULB PLANTING CHART

TULIPS
early mid-season late

DAFFODILS

MINOR HYACINTH BULBS

DEPTH
Soil Line
HEIGHT
Inches
NEW PUBLICATIONS

Cornell Recommendations for Commercial Floriculture Crops. The new editions, Part I - Cultural Practices and Production Programs ($1.50) and Part II - Pest Control - Diseases, Insects, and Weeds ($2.50), are highly recommended. They are well written, useful references for the greenhouse grower. Available from: Cornell University Distribution Center, Seven Research Park, Ithaca, NY 14850.

Introduction to Floriculture. This book only took 3 years to complete from when it was conceived to when it came off the press. Published by Academic Press, edited by Roy Larson, and written by 20 different floriculturists, it covers the culture of commercial flower crops. The book was written for college students and commercial flower growers. The chapters and authors are as follows:

Cut Flowers
- Chrysanthemums
  - A.M. Kofranek
- Carnations
  - Seward Besemer
- Roses
  - Ray Hasek
- Snapdragons
  - Marlin Rogers
- Orchids
  - Thomas Sheehan
- Gladiolus
  - Gary Wilfret
- Minor Cut Crops
  - Christina Auman
- Poinsettias
  - James Shanks
- Easter Lillies
  - Harold Wilkins
- Hydrangeas
  - Tom Weiler
- Cyclamen
  - Richard Widmer
- Begonias
  - Roy Larson
- Kalanchoes
  - Joe Love
- Other Flowering Pot Plants
  - P. Allen Hammer
- Bedding Plants
  - Will Carlson and Ed Rowley
- Hanging Baskets
  - Jim Rathmell
- Foliage Plants
  - Charles Conover