

W. D. Thomas, Jr., Associate Pathologist, Colorado A & M

The importance of bench sanitation for controlling Fusarium diseases of carnations cannot be overemphasized. Soil sterilization and fungicidal cutting-tips, alone, cannot be expected to attain complete control. The origin of single infected plants often observed in otherwise clean benches is problematical. These potential infection centers must be rogued. Often, this is done carelessly. The infected plants are pulled rapidly through the wire supports, causing loose dirt about the infected roots to scatter along the path of removal.

In order to determine the importance of this scattering in the spread of the fungus, an experiment was conducted in which infected soil and other infected matter were scattered over a carnation bench. Fusaria cultures and Fusarium-infested soil from infected roots were scattered along the surface of a greenhouse bench containing young vigorous Spectrum Supreme carnation plants. The treatments were randomized in three rows of five plants each in three replicates. Uninoculated blocks were included in the plot randomization as checks. Readings were obtained from the middle row of each block. Following inoculation the bench was well-watered, and the greenhouse temperature maintained at  $60^{\circ} \pm 50$  F.

As shown in the table, inoculation of the soil in the bench of young carnations demonstrated that the use of concentrated inoculum was a very severe test, as all plants in the test became infected. Moreover, inoculation with soil scattered from an infected plant was sufficient to cause the infection of approximately one-third of the plants.

In order to compare the susceptibility of old, well-established plants with that of young, vigorous plants, the same methods were used to inoculate potted carnations of the same variety by each treatment employed in the first experiment. Each plant was in a 10-inch pot of sterilized soil, and was free from infection prior to inoculation.

The results with the old potted plants gave the same indications obtained in the first experiment. All plants inoculated with either pure cultures, or combinations of cultures became infected, and approximately one-third of the plants inoculated with Fusarium-laden soil showed infection.

These brief experiments indicated that the scattering of debris across a

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bench provided ample means for inoculating otherwise sterile soil and infecting carnations with the Fusaria causing root rot and wilt. Apparently both young and old plants were equally susceptible to such inoculation. Because of the infectuosity of such debris it is recommended that extreme care be used when roguing infected plants. Roguing when the soil is wet would prevent excessive scattering. Cupping the hand beneath the root ball also would prevent undue spread of the infectuous material.

Effect of spreading pure Fusarium cultures and infested soil on the soil surface of carnation bench

Treatment	Young, vigorous plants	Old, well-established plants
	Ave. no. plants infected	No. plants infected
Infested soil	1.7	2
<u>Fusarium culmorum</u>	5.0	6
<u>F. oxysporum v. dianthi</u>	5.0	6
Combined Fusaria	5.0	6
Check	0	0

$\frac{1}{3}$  replications of 5 plants each.