PYTHIUM ROOT ROT OF IVY

Wesley A. Humphrey and Arthur H. McCain*

One of the more prevalent, chronic diseases of container-grown plants is Pythium root rot. One reason for this is that *Pythium* species occur in practically all soils that support higher plants. Contamination of soils treated with methyl bromide or steam is common, if not the rule. Another reason is that the root systems of container-grown plants are confined to a small volume of soil, which makes frequent irrigations necessary. Water does not move out of the containers until a saturated zone occurs, thus creating conditions that favor these fungi.

Ivy is subject to Pythium root rot, and *Pythium ultimum* is commonly found in the roots of stunted or poorly growing ivy plants. Soil-applied fungicides have been used on other foliage plants, resulting in the production of vigorous, healthy plants (1).

EXPERIMENTS TO CONTROL IVY ROOT ROT

Rooted cuttings of *Hedera helix* 'California' were planted in a potting mix composed of one-third

TABLE 1. Treatments and Results of Pythium Root Rot Control in Ivy.

Soil Incorporation Treatments	Oz./cu. yd.	ppm in Soil Mix	Rating Results–Tops[1]	Rating Results–Roots[1]
30% ethazol[2]	2.5	25	31	29
30% ethazol	1.25	12.5	22	14
35% diazoben[3]	2.1	25	18	3
35% diazoben	4.2	50	23	4
25% MC-5077[4]	6.0	50	17	6
25% MC-6536[4]	6.0	50	1	3
Soil Drench Treatments[5]	**Oz./100 Gal.**	**ppm in Solution**	**Rating Results–Tops**	**Rating Results–Roots**
30% ethazol	4.4	100	31	12
35% diazoben	3.8	100	18	2
25% MC-5077	5.3	100	16	1
25% MC-6536	5.3	100	7	5
Other Treatments		**ppm in Solution**	**Rating Results–Tops**	**Rating Results–Roots**
Ethazol solution – 1 minute dip – fumigated soil		100	37	34
Check – fumigated soil mix			38	35
Check – infested soil mix			18	3

[1] Totals of ratings of 8 plants. Rating scale per plant: 0 = poor, 5 = excellent.

[2] Sold as Truban® and Terrazole®.

[3] Sold as Dexon®.

[4] MC-5077 and MC-6536 are experimental compounds of the Mobil Chemical Company.

[5] Volume of drench solution used was 2 pints per square foot of surface area.

each by volume of peat moss, redwood shavings, and fine sand in 4-inch, round plastic pots. Two parts of soil mix infested with Pythium were combined with nine parts of soil mix that had been fumigated with methyl bromide. This infested soil mix was used for all but two treatments. Plants in the ethazol root-dip treatment and a check treatment (no fungicide added to the mix) were planted in fumigated, uninfested soil mix.

Fungicides were combined with the soil mix at the rates listed in the table. The soil drench treatments were made by pouring suspensions of the fungicides over the planted, rooted cuttings as listed under drench treatments. Each treatment was replicated eight times. The treated plants were placed on a raised bench in a greenhouse and normal cultural practices were followed. The treatment date was June 15, 1972, and the plants evaluated on August 11, 1972. Leaf growth and root growth were rated independently.

The best growth occurred in the fumigated soil mix. Ethazol was the most effective fungicide when mixed with the soil and was somewhat less effective when applied as a drench. Rooted cuttings were not damaged by being dipped in a 100 ppm ethazol suspension.

The results of this study indicate that ethazol, when introduced into the soil mix at planting time, can effectively suppress *P. ultimum*. Growers experiencing poor growth of ivy as a result of Pythium root rot should consider using ethazol in combination with heat-treated or fumigated soil in a disease control program.

LITERATURE CITED

1. McCain, Arthur H., and Richard H. Sciaroni. 1967. "Fungicides for foliage plants." *Florists' Review*, March 30, p. 15.

* Respectively, Farm Advisor, Orange County, and Extension Plant Pathologist, Berkeley.