

VERTICILLIUM DAHLIAE PATHOGENICITY TESTS ON MINT 1998-99

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The pathogenicity of *Verticillium dahliae* isolates recovered from symptomatic mint grown in California (CA) and Oregon (OR) was tested in winter 1998-99. Inoculum was grown in the laboratory at COARC and rooted cuttings of peppermint var Black Mitcham were inoculated by dipping roots in a conidial suspension (approximately  $5 \times 10^7$  colony forming units/ml) for 30 minutes. Non-inoculated control plants were treated with sterile distilled water. Known pathogenic mint and potato strains of *V dahliae* also were included as pathogenic standards. Cuttings were planted in 6 inch pots and arranged on a light bank bench according to a randomized complete block design. Visual wilt ratings were taken weekly at the first sign of symptoms. At 9 weeks post-planting, all plants were destructively harvested and 20 cm of basal stem tissue was plated on a *V dahliae* selective agar to quantify pathogen populations in the stem. Only the standard mint *V dahliae* isolate elicited a wilt response that was significantly greater than the uninoculated control (Table 1). The wilt ratings for each CA and OR isolate were not significantly different from the control ( $P > 0.05$ ). None of the CA isolates were re-isolated from stem tissue (Table 1). The OR isolate was re-isolated at a population almost identical to that of the standard pathogenic mint isolate. The OR isolate, two CA isolates, and the pathogenic standards were submitted to Oregon State University for vegetative compatibility group (VCG) determination. The OR isolate VCG corresponded with the pathogenic mint isolate while both CA isolates corresponded with the potato isolate VCG. Important for areas of CA and OR which have had potatoes for many years but which are new to mint culture, these data suggest that under field conditions wilt symptoms in mint can result from potato strains of *V. dahliae*.

Table 1. Wilt severity, *Verticillium dahliae* stem populations, and vegetative compatibility groups of isolates from pathogenicity tests conducted at OSU-COARC Madras, 1998-99.

Isolate	Wilts	CFU/cm stem <sup>b</sup>	VCG <sup>c</sup>
Control	0.00 B <sup>d</sup>	0.00 B	
Mint standard	2.62 A	0.89 A	2
Potato standard	0.25 B	0.00 B	4
OR 1	0.25 B	0.92 A	2
CA 1	0.37 B	0.00 B	4
CA 2	0.00 B	0.02 B	e
CA 3	0.12 B	0.00 B	
CA 4	0.12 B	0.00 B	
CA 5	0.25 B	0.00 B	
CA 6	0.25 B	0.00 B	4
CA 7	0.25 B	0.00 B	

<sup>a</sup>Wilt rating was 0=no symptoms, 1-3=mild to moderate chlorosis and leaf curling, 4=severe symptoms, 5=dead.

<sup>b</sup>Colony forming units per cm basal stem tissue.

<sup>c</sup>Vegetative compatibility group.

<sup>d</sup>Means followed by the same letter are not significantly different at  $P < 0.05$  according to Fisher's protected least significant difference (LSD) test.

Not tested for VCG.