

MECHANISM OF BROCCOLI-MEDIATED VERTICILLIUM WILT REDUCTION.

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Broccoli is immune to all isolates of *Verticillium dahliae* except those from cauliflower and cabbage to which it is resistant. Broccoli can be used as a soil amendment to reduce soil populations of *V. dahliae*. In a greenhouse experiment, plant growth response and root colonization in broccoli and cauliflower were studied in soils with different levels of *V. dahliae* inoculum, and with or without fresh broccoli residue amendments. Broccoli amendments had a positive effect on plant height, number of leaves and on shoot and root dry weight despite the presence of the pathogen. Broccoli amendments reduced vascular discoloration and disease development. Colonization of the root cortex was studied on root samples taken at different intervals using an immunoenzymatic staining assay. Colonization of roots by *V. dahliae* was reduced in plants grown in soil amended with broccoli. In unamended soils, the outer cortex of feeder roots of both broccoli and cauliflower was colonized by *V. dahliae*. Broccoli, however, in addition to its attrition effect on *V. dahliae* propagules in the soil, may also possess a potential trap crop effect.

