ABSTRACT

Cercospora leaf spot disease of zinnias in Jamaica

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Detailed studies of Cercospora zinniae Jacq. on zinnias (Zinnia elegans L.) showed that conidia of C. zinniae germinated within 6 hr after inoculating zinnia leaf surfaces. Penetration of the host by a germ tube occurred through the stomatal pores and the host first developed leaf spot symptoms five to seven days after inoculation, depending on the cultivar. Spots matured and conidia first developed at nine days after inoculation.

Significant increases in percentage leaf necrosis with an increase in initial inoculum density occurred in the cultivars Lilliput, Polynesian, Thumbelina and the standard, unnamed cultivar. Plant dry weight of the standard cultivar was significantly reduced by an inoculum density of 5,000 spores/ml when compared to the control. The standard cultivar, Lilliput and Polynesian displayed increased resistance to C. zinniae with increase in plant age.

In the field C. zinniae was dispersed by wind, insect, rain-splash and human beings. In an area of 231.4 m^2

with 243 plants, in subplots inoculated or not inoculated with C. zinniae, 55% and 42%, respectively, developed lesions by seven days after inoculation of the subplots. Twenty eight days after inoculation, 3, 18 and 76% of the plants were severely, moderately and mildly infected, respectively.

Aliette L, Tilt, Baycor and Captan at maximum test concentrations of 4000, 2000 4000 and 4000 ppm, respectively, caused limited mycelial growth suppression in vitro. However, Aliette WP, Benlate and Mancozeb completely inhibited growth at varying concentrations. Benlate, Mancozeb and Aliette WP controlled the leaf spot disease to varying degrees in vivo . Tilt, Baycor and Aliette L were phytotoxic to zinnias.