PHOMOPSIS STEM BLIGHT OF ASPARAGUS: FIELD SURVEY AND FUNGICIDE SCREENING

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Field surveys were carried out on 10 asparagus crops in Queensland to assess the spread and epidemiology of Phomopsis stem blight (caused by *Phomopsis asparagi*). Phomopsis stem blight causes fern defoliation and kills plants. The disease is not recorded in New Zealand. The disease has spread from Warwick to Beerburrum and Mundubbera, a distance of 350 km. Although the disease was widely spread in the surveyed fields, it did not appear to cause significant damage to the affected crops. *In vitro* tests on water agar plates showed that all fungicides tested (benomyl, carbendazim, chlorothalonil, copper hydroxide, difenoconazole, iprodione, propiconazole and sulphur) significantly retarded the germination and germ tube elongation of *P. asparagi* conidia. The three most effective fungicides were benomyl, chlorothalonil and sulphur, which gave complete inhibition of spore germination. In glasshouse tests with plants, benomyl was the only fungicide that significantly reduced the number of lesions/stem and disease severity compared to the inoculated control treatment. Chlorothalonil also reduced the number of lesions/stem and disease rating compared to the control but was not different from other treatments. Field trials are being carried out in Queensland to evaluate the effectiveness of these fungicides for control of Phomopsis stem blight on asparagus crops.

GERMINATION OF *SPILOCAEA OLEAGINA* CONIDIA *IN VITRO* AND ON OLIVE LEAVES

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Olive leaf spot disease, caused by *Spilocaea oleagina*, is severe during cool, moist conditions, indicating a potential environmental effect on germination and infection by conidia. In this study, the germination characteristics of the pathogen and effects of moisture were studied *in vitro*. The conidia obtained from naturally infected olive leaves, which were found to be one-celled or two-celled, were plated onto water agar, potato dextrose agar (PDA) and olive leaf extract agar (OLE) at 20ºC. Germination commenced after 9 h, with emergence of germ tube(s) at one or both ends of conidia. After 48 h, only the two-celled conidia had germinated, with rates being higher on OLE (76%) compared to PDA (60%) and water agar (20%). However, the germinated conidia failed to establish fungal colonies. On detached olive leaves at 20ºC, the conidia did not germinate without free water even at 98% relative humidity. Conidium germination also commenced after 9 h under continuous wetness, with formation of appressoria and penetration of leaf tissues after 18 h. Light and scanning electron micrographs showed germination and infection processes on olive leaves. Germination and penetration occurred on whole plants in a growth chamber, but no visible lesion had developed by 7 weeks.