PENCONAZOLE FOR THE CONTROL OF SEPTORIA CUCURBITACEARUM IN CUCURBITS

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Septoria leaf spot, Septoria cucurbitacearum (Saccardo 1876) is a widespread defoliating disease of cucurbits especially in Canterbury. Disease symptoms appear earlier than those of powdery mildew (Sphaerotheca fuliginea). A suitably randomised and replicated (4) trial was located on a crop of pumpkins (Crown Prince) in 1996 and 1997. Treatments were applied using a precision backpack sprayer with 2.5m boom using cone nozzles operating at 300 kPa to deliver 320 litres water volume/ha. Foliar applications of the fungicide penconazole (Topas 100 EC) 25 g/ha, began at flower initiation and were used on a 10-14 day schedule for four applications. Infection levels were assessed as percentage leaf area diseased after the last application on leaves of similar age. Within both trials, complete defoliation of the untreated plants occurred by day 21. Penconazole treatment means for leaf area infection levels in the 1996 trial, at day 14 and 29, were 22.3 and 39.3% respectively. In 1997 at 14, 21 and 30 days, mean leaf infection levels were 4.1, 7.4 and 16.3%. Penconazole applications were successful in controlling Septoria leaf spot.

PATHOGENICITY OF ERWINIA CAROTOVORA SUBSP. CAROTOVORA, FUSARIA SOLANI AND RHIZOCTONIA SPP. TO CALLA

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Several species of fungi and bacteria have been isolated from rotted calla (Zantedeschia spp.) plants and tubers in New Zealand. These include the fungal species Fusarium solani, Rhizoctonia spp., Pythium spp., and the bacterium Erwinia carotovora subsp. carotovora. An experiment was conducted to confirm F. solani, Rhizoctonia sp. and E. carotovora subsp. carotovora as the pathogens causing soft rot in calla. Surface-sterilised calla tubers were planted into sterile potting mix in polystyrene trays in which: (1) no pathogens were added to the potting mix; (2) F. solani was added; (3) Rhizoctonia sp. was added; (4) E. carotovora subsp. carotovora was added; and (5) E. carotovora subsp. carotovora, F. solani, and Rhizoctonia sp. were all added to the same potting media. Eight weeks after planting, the callas were assessed for the incidence and severity of soft rot. Organisms were isolated from diseased plants and identified. E. carotovora subsp. carotovora caused significantly more rots than the cultures of Rhizoctonia sp. and F. solani. E. carotovora subsp. carotovora was re-isolated from rotted tissue taken from diseased plants grown in media which had been inoculated with this bacterium. The experiment demonstrated that, given the right conditions for development of the disease, E. carotovora subsp. carotovora can cause severe rots to callas.