

SUMMARY

Cercospora nicotianae Ell. & Ev. has been causing extensive damage to tobacco at New Farm. The source of each season's infection, which would indicate a possible means of control, has been sought, as control of the disease with protective fungicides is uneconomic.

The fungus was isolated from the previous year's cured leaf, indicating a possible means of carry-over from one season to the next. Testing of planting material used at New Farm in an isolation plot, and by a leaf assay method, indicated that seedling infection did not instigate the epiphytotic which developed.

The possibility of the persistence of C. nicotianae in the soil has been followed up. Ledingham and Chinn's spore extraction method was tried and another developed using specific gravity adjustment, both failed to extract Cercospora spores from soil. No infection was obtained from soil which was presumed to contain a heavy inoculum of the pathogen. Germination experiments and studies of spores on soil plates show that rapid germination and lysis of spores takes place in moist soil. Spores on the surface of dry soil can probably remain viable for long periods.

The existence of an aerial inoculum of C. nicotianae, either from other diseased tobacco or possible alternate hosts of the fungus is suggested as an initial source of infection.

The difference in susceptibility to infection between attacked and detached leaves, noticed in C. nicotianae, has been observed in C. personata and C. cruenta. Successful infection of C. abelmoschi on detached leaves was obtained.

A simple gravity-slide technique and a leaf sampling method have been investigated to study the dispersal of Cercospora spores.

Delayed sporulation in culture of C. personata was observed with evidence of the existence of distinct races.