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Short Communication

In-vitro Germination of Oospores of *Sclerospora graminicola*, the Green-ear Pathogen of Pearl Millet

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The green-ear disease of pearl millet caused by *Sclerospora graminicola* (Sacc.) Schroet. is seed transmitted as oospores on/with seed and/or mycelium in the embryo (Arya and Sharma, 1962; Shetty *et al.*, 1977). It is generally agreed that the soil-borne oospores of the pathogen provide major source of perpetuation of disease and primary infection of plants in the field (Suryanarayana, 1962). It has been shown that leaf debris containing oospores, when added to the soil, resulted in higher disease incidence as compared to when no infected debris was added to soil (Siddiqui and Gaur, 1978). However, role of oospores in causing primary infection has been questioned by several research workers because it has not been possible to germinate the oospores convincingly under laboratory conditions. Pande (1972) reported oospore germination in the laboratory, however, her findings have not been confirmed. It was communicated that oospores of *S. graminicola* were germinated in the laboratory at ICRISAT, Hyderabad (Dr. S. D. Singh Personal communication, 1989). Attempts were, therefore, made for *in-vitro* germination of *S. graminicola* oospores at the quarantine laboratory of the National Bureau of Plant Genetic Resources, New Delhi.

Bits from infected dry material of pearl millet containing numerous oospores were taken on a microscopic slide in about 5 drops of Chlorax (Sodium hypochlorite con tain-ing 1.0 per cent available chlorine). Immediately, the leaf bits were teased under a stereoscopic binocular microscope with the help of forceps and dissecting needle to release oospores in the chlorax solution. The oospores were allowed to remain in the solution for 10 minutes after which these were picked up with the help of a capillary tube and placed in sterilised water on another slide. These oospores were subsequently transferred to the third slide having sterilised water so as to remove unwanted plant debris. Thus, more than 10 oospores were placed on each slide. These slides were then placed in plastic Petridishes containing 3 layers of well moistened blotter papers and incubated at 22°C ($\pm$ 2°C).

These slides were examined under a compound microscope after every 24 hours. Initiation of germination was observed in a number of oospores after 5 days of incubation in the form of a small hyline protrusion from the wall of oospore. By the 8th day, most of the oospores had germinated producing hyaline long aseptate germ tubes (Fig. 1). In some cases, the germ tube showed branching at the tip. The experiment was repeated thrice with 5-6 replications each time to confirm the observations. Further investigations on various aspects of oospore germination and infection of seedlings by germinating oospores are in progress.

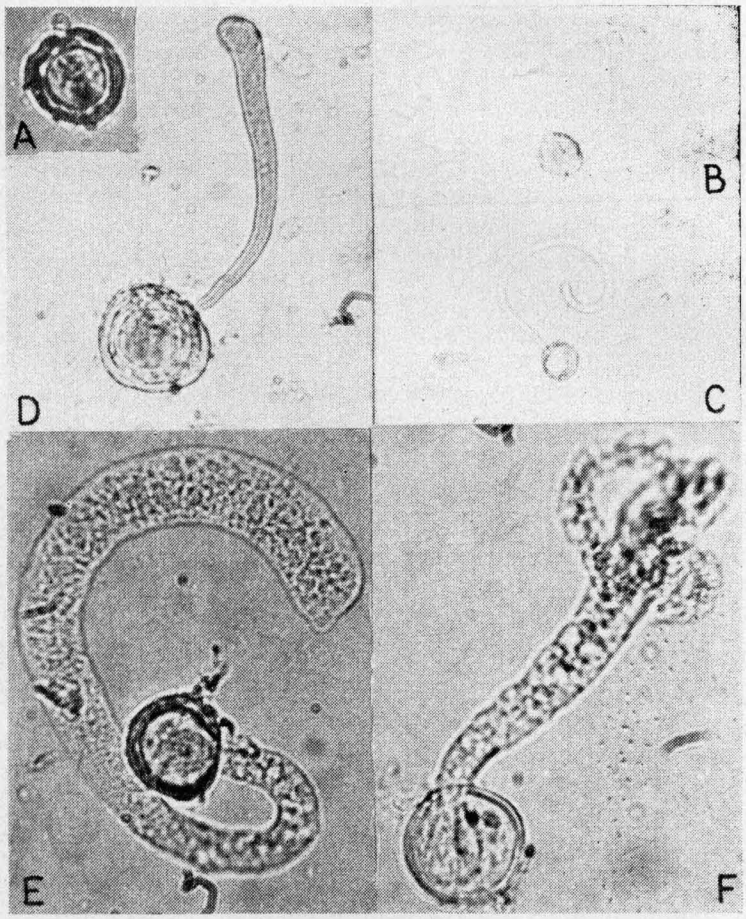

Fig. 1. Germination of oospores of *Sclerospora graminicola*
A. Initiation of germ tube emergence (X 875)
B & C. Germ tube elongation (X 400)
D. Germ tube elongation under high power (X 940)
E. An advanced stage showing aseptate germ tube (X 875)
F. Germ tube showing branching at the tip (X 1000)

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