



First report of the *Drechslera* state of *Cochliobolus spicifer* infecting seeds of *Parthenium hysterophorus* in India

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Parthenium hysterophorus has emerged as one of the world's worst weeds causing enormous losses to biodiversity and environment. Its pollen is capable of causing various health hazards to humans as well as livestock (Shukla & Pandey, 2008). During surveys, various infected/infested seed samples collected from different localities of Jabalpur, India, were analysed for the presence of seed borne fungi using standard ISTA techniques (ISTA, 1996).

For standard blotter and deep-freezing methods of isolation, seeds surface sterilised with 0.1% sodium hypochlorite for 15 minutes, and non-surface sterilised seeds, were tested. For the blotter method, seeds were placed on three layers of moistened blotters, 10 seeds per petri dish and were incubated at 24°C in 12 hour alternating cycles of light and darkness for seven days. In the deep-freezing method, the seeds were incubated for one day each at 20°C and -20°C followed by five days incubation at 24°C. Both methods of isolation revealed that more fungi were isolated from the non-surface sterilised seeds than from surface sterilised seeds. Among them, a potential pathogen isolated from the surface sterilised seeds of the targeted weed produced olive green to dark brown coloured colonies. Conidiophores appear solitary or in small groups, flexuous, mid to dark brown, up to 300 µm long, 4-9 µm thick. Conidia are straight, oblong or cylindrical, rounded at ends, golden brown when mature except for a small area just above the scar which remains hyaline, smooth, constantly three-pseudoseptate, 20-40 x 9-14 µm (mostly 30-36 x 11-13 µm); hilum 2-3 µm wide. Based on morphological and microscopic characteristics (Barnett & Hunter, 1972; Ellis, 1971, 1976), the fungus was identified as the *Drechslera* state of *Cochliobolus spicifer* and has been deposited to the Fungal Germplasm Culture Collection (FGCC), R.D. University, Jabalpur.

Pathogenicity was tested in accordance with Mortensen & Hsaio (1987). Twenty-five healthy seeds of the targeted weed were surface sterilised with 0.1% sodium hypochlorite for 15 minutes and inoculated with spore suspension obtained from 15-day-old cultures of the isolated fungal strain on potato dextrose agar medium; then placed in a moist chamber containing a pair of sterilised petri dishes lined with filter paper moistened with sterilised distilled water and kept in 25 ± 2°C in a BOD incubator for

the assessment of germination inhibition. An equal number of surface sterilised and non-inoculated seeds served as controls. The experiment was repeated three times. All inoculated seeds showed inhibition in germination, whereas control seeds germinated and remained healthy (Fig. 1). The pathogen was re-isolated from the infected seeds, thus fulfilling Koch's postulate. To our knowledge, this is the first report of the *Drechslera* state of *Cochliobolus spicifer* in the seeds of *Parthenium hysterophorus* in India.

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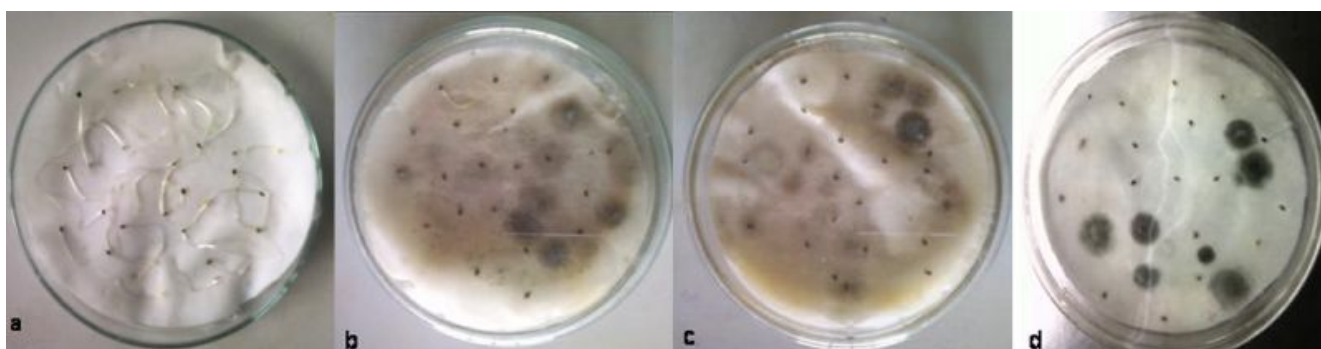


Figure 1

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