

Phoma Blight—A New Disease of Chickpea

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ABSTRACT

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A blight was observed in the off-season chickpea nursery in Kashmir. Pathogenicity tests and reisolations from inoculated plants confirmed that *Phoma medicaginis* was the incitant.

Chickpea (*Cicer arietinum* L.) is an important grain legume in India, west Asia, northern and eastern Africa, and Mexico. For rapid generation turnover of breeding material, chickpea is grown in an off-season nursery in the summer at Taparwaripura (latitude 34°N, altitude 1,560 m) in the state of Jammu and Kashmir in India.

A leaf blight on most lines of chickpea was observed in the 1978 nursery. The symptoms appeared similar to the well-known disease, *Ascochyta* blight (*Ascochyta rabiei* (Pass.) Labrousse). Irregular, light brown lesions on the leaves, stems, and pods were surrounded by dark margins (Fig. 1). Dark, minute, submerged pycnidia were irregularly scattered on infected tissues. Seeds from infected pods

were discolored and shrivelled.

From infected leaves, stems, and seeds, a fungus was isolated in pure culture and was subsequently maintained on potato-dextrose agar at 25 C. Mycelium was septate and initially hyaline but later dark brown. Pycnidia were subglobose and 200–300 μm in diameter. Conidiogenous cells were hyaline, short, obpyriform,

enteroblastic, and phialidic, arising from the hyaline cells lining the pycnidial cavity. Conidia were hyaline, unicellular, and $4.8 \times 2\text{--}3.5 \mu\text{m}$ in culture. Terminal or intercalary chlamydospores were formed in culture. These were spherical or irregular and smooth or rough. The fungus was identified as *Phoma medicaginis* Malbr. and Roum (1), and the pure culture has been deposited with the Commonwealth Mycological Institute (CMI No. 229081).

Pathogenicity. The fungus was grown for 15 days on potato-dextrose broth (250-ml flask, containing 100 ml of medium) at 25 C. The growth from a flask (mycelium and conidia) was suspended in 250 ml of sterile water and sprayed on 10-day-old plants of chickpea cv. JG-62, which were then kept under high humidity for 72 hr at 25–30 C. Typical symptoms developed within a week, and the fungus was reisolated successfully.

This is the first report of *Phoma medicaginis* as a pathogen of chickpea. It may occur in other countries where chickpea is exposed to moderately warm summers with frequent rainfall. The disease does not occur on chickpeas grown normally during the moderately cool and dry winters of Andhra Pradesh. Seeds brought from Kashmir germinate normally and do not show any infection by *P. medicaginis*.

LITERATURE CITED

1. Punithalingam, E., and Gibson, I. A. S. 1976. No. 518. Description of Pathogenic Fungi and Bacteria. Commonw. Mycol. Inst., Kew, Surrey, England.

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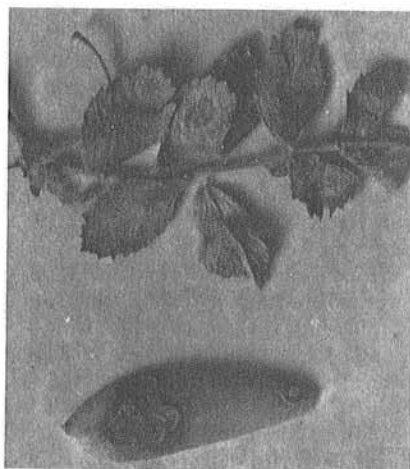


Fig. 1. Symptoms of Phoma blight on chickpea leaflets and pod shell.