Occurrence of eye spot of wheat in Himachal Pradesh

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Key words: wheat, eyespot, Rhizoctonia cerealis, Himachal Pradesh

During Rabi, 2006 a serious outbreak of eye spot disease on wheat was recorded in Govt. Seed Multiplication Farm, Bhadiarkhar Palampur area of Himachal Pradesh. The disease appeared in the month of December when the temperatures were low and the soils were wet due to high rainfall. About 30-40 per cent of the plants were infected by the disease. The representative samples were collected and deposited in the departmental herbarium as indicated by DPDH herbarium (DPDH 1293). The oval to lens shaped lesions appeared near the base of the stem generally restricted to tissue below the second node to upwards to approximately 20 cm height and were sharply defined with dark margins and pale to straw-colored centers. The lesions enlarged and coalesced, eventually girdling the stem. The pathogen grows into the culm and form sclerotia or between the lower leaf sheath and culm. The fungal growth within the lesion was superficial and could be easily rubbed off. Infected tillers died prematurely, produced white heads with shrunken kernels. Diseased tillers were also prone to lodging. The disease resulted in premature ripening of affected plants. The disease has been reported from many countries (3).

The microscopic examination of the pathogen revealed that the hyphae measured 8-10 µm broad and produced branches at right and acute angles to the main hypha and is slightly constricted at the branch origin, and often with a septum near the branch origin.

The pathogen was isolated on PDA and pure cultures were obtained by hyphal tip method. The pathogenicity was proved under laboratory conditions. The fungus grew optimally at 23°C and produced white to brown mycelium and did not produce any spores. The colonies on PDA were white to buff colored. Later in the culture, monilioid cells were produced measuring 20-40 x 12-16 µm which formed sclerotia. Sclerotia were produced later after about 15 days of incubation and were initially white to yellow, eventually turning brown in color generally smaller in size, 0.3-1.2 mm in diameter and irregular in shape.

Based on the morphological characteristics and colony morphology, the pathogen was identified as fungus Rhizoctonia cerealis Van der Hoeven (teleomorph: Ceratobasidium cereale D. Murray & L.L. Burpee) (1). This constitutes the first record of this pathogen and disease in Himachal Pradesh (2).

REFERENCES


Received for publication April 28, 2007