

Short Communication

Powdery Mildew: A Threat to Natural Plantations of *Capparis spinosa* L. in Arid Temperate and Cold Desert Zone of Himachal Pradesh

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Capparis spinosa L. is an ecologically important shrub of arid temperate and cold desert zone of Himachal Pradesh especially in Lahaul and Spiti and Kinnaur districts. In some of the areas in Lahaul and Spiti district this is the only natural plant growing. The plant has a medicinal value and all the plant parts are used in preparation of various drugs. In addition to its medicinal value the shrub also serves as a feed to the wild animals like blue sheep. The local people of the region use this shrub to feed their cattle. During routine survey of the region during last three to four years the plants of *C. spinosa* growing at various localities viz., Sumra, Hurling, Lari, Tabo and Mane and nearby areas were found infected with a powdery mildew fungus. The severity of the disease at various localities increased from 0 to 20% during 2005-06 to 20 to 60% during 2009-10 indicating 200% increase in the disease intensity in last three to four years.

The leaves, branches, stems, and flower buds of infected plants were found covered with a dirty white powdery crust of the pathogen. The samples were brought to the laboratory for further observations of the pathogen. Microscopic observations revealed the presence of anamorphs as well as teleomorphs of the powdery mildew fungus. Under anamorphs, the mycelium was ectoparasitic as well as endoparasitic. Conidia were elliptical, hyaline and measured 50-75 x 18-25 µm. The

teleomorphs included perithecia containing asci and ascospores. Perithecia were dark, globose and measured 180-250 µm in diameter. Each perithecium contained many asci. Asci were light colored to hyaline, elliptical and measured 80-90 x 32-40 µm. Each ascus contained two ascospores. Ascospores were elliptical to ovate, hyaline and measured 25-40 x 18-25 µm. On the basis of the morphological characters of the fungus it was identified as *Leveillula taurica* (Lev.) Arnaud. The samples were also deposited to Herbarium Cryptogame Indiae Orientalis (HCIO), Indian Agricultural Research Institute, New Delhi, under accession number 47878 and the identity of the fungus was confirmed. This disease was reported in 1963 in India from Kashmir by Wehmeyer (1963). In Himachal Pradesh the disease was reported for the first time in 1998 (Gupta and Bhardwaj, 1998) from Tabo locality of Lahaul and Spiti district. But now the disease has spread to almost all the localities surveyed in the region. The pathogen covered all the foliar parts of the plants which directly affected the process of photosynthesis and thereby the growth of the infected plant. The disease is therefore a threat to the natural plantation of this valuable plant species of arid temperate zone of Himachal Pradesh.

References

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