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Sclerotinia rot of *Barleria cristata* in West Bengal, India

Bholanath Mondal, Subhas Hansda and Dinesh Chandra Khatua

Abstract
Sclerotinia rot was recorded first time in India on *Barleria cristata* L., a perennial ornamental flowering Plant. Many of the flowering branches were dried up due to the disease. White mycleial growth and sclerotia appeared on the diseased tissue. The pathogen did not have host specificity.

Keywords: *Barleria cristata*, new host, Sclerotinia rot, *Sclerotinia sclerotiorum*

Barleria cristata L. is a perennial ornamental flowering plant. The plant grows mostly with erect branches up to a height of 180cm. It is cultivated both in villages and town in West Bengal, India. The height is maintained according to growers' choice. The cultivated species is generally characterized by white flower. It produces flowers at the end of November and continues up to middle of February. Duration of flowering depends on the location, environment and management.

Sclerotinia rot was recorded on *Barleria cristata* in December 2013 to January 2014, in homestead gardens at Kalyani town in West Bengal, India. Light brown coloured lesion appeared 30cm above the soil surface on the main stem, branches mainly at the internodes (Fig. 3). The infected plants also produced flowers. Individual lesion gradually increased in length, girdle the internode and might reached to the nodes. Encircling the thin branches caused wilting or drying of the infected branch above the point of infection (Fig. 2). Node infection caused breaking of the branch and the branch hanged down (Fig.1 & 2). Decrease of night temperature led to heavy dew deposition and might be associated with fog. In such condition, pathogen produced prominent white mycelial growth on the lesion (Fig.2). Sclerotia were formed on some of the lesions. Initially sclerotia were white and turned blackish with age. Sclerotia had convex and pitted surface (Fig. 3). Many of the thick infected branches dried up in first week of March but the infected plant remained alive with dried branches.

On isolation, the pathogen produced white mycelium with hyaline, branched and septate hyphae. Black sclerotia near spherical to irregular in shape generally were formed within 4 days of incubation at 25 ^{0}C. The sclerotia were silvery white in the initial stages of development but turned dark with increasing age of the culture. Surface of the sclerotia was rough and pitted (Fig. 4). Based on the cultural characteristics the pathogen was identified as *Sclerotinia sclerotiorum* (Lib.) de Bary [1, 2].

For pathogenicity test, a healthy plant in semi-shade situation was selected. A small (1cm) incision was given at internode of some branches. A mycelial strip from four days old culture on PDA was placed on the incision. The mycelial strip was wrapped with thin layer of moist cotton. Water was spread over the branch and the inoculated branch was covered with polythene packet to maintain moist condition for three days. After three days polythene cover was removed. The work was done in the month of January. Seven days after inoculation light brown lesion appeared on the inoculated area. The lesion slowly progressed and white mycelial growth appeared on the lesion. Isolation of the pathogen from the inoculated plant was successful. Sclerotinia rot has been recorded on twenty four plant species in West Bengal [1, 2, 3, 4] but this is the first record of incidence of the disease on *Barleria cristata*. On artificial inoculation, this pathogen infected *Solanum melongena* L., *Pisum sativum* L., *Phaseolus vulgaris* L. and *Brassica juncea* (L.) Czern. This indicates that the pathogen does not have host specifificity [1, 2, 5].

Fig 1: Nodal infection with drying and breaking of infected branches

Fig 2: Drying of infected branches and white mycelial growth of the pathogen in humid condition

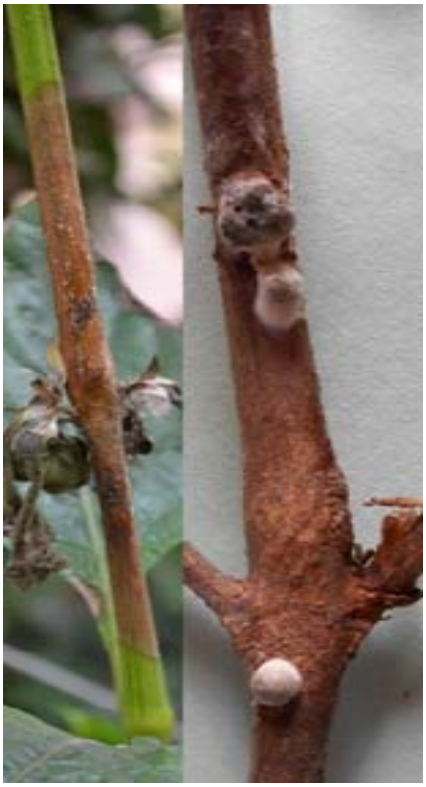

Fig 3: Internodal infection and sclerotia formation on the infected branch

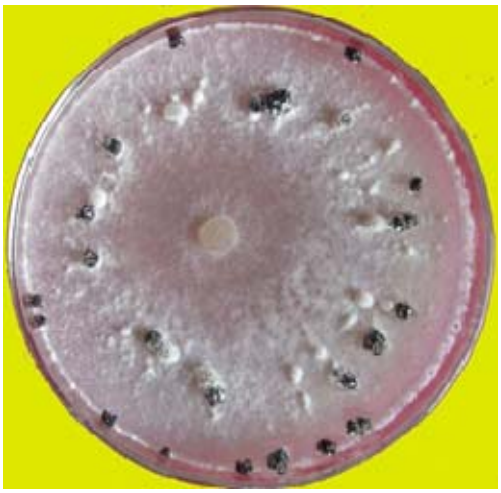

Fig 4: Growth of *S. sclerotiorum* on PDA medium with blackish sclerotia

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