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***ERIOCAULON SEDGWICKII* FYSON – A NEW HOST OF *CURVULARIA ERAGROSTIDIS* (P. HENN.) J. A. MEYER : THE FIRST REPORT.**

BASAVARAJ KORE

This report provides the first documentation of occurrence of *Curvularia eragrostids* (P.Henn.) J.A.Meyer on inflorescence of *Eriocaulon sedgwickii* Fyson from the World Heritage Site Kas Plateau .The disease appeared during monsoon and damaged about 80% plants especially heads from the study area. Seed setting and seed development of infected heads is seriously affected due to infection.

KEYWORDS: *Curvularia eragrostids*, *Eriocaulon sedgwickii*, Kas Plateau.

Cite this article as:

Kore B. (2012). *Eriocaulon sedgwickii* Fyson – A New Host of *Curvularia eragrostidis* (P. Henn.) J. A. Meyer: The First Report. *Plant Sciences Feed* 2 (12): 180-182.

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1. INTRODUCTION

Since the publication of monograph on fungi of India, numerous additional collections have become available for the study [1]. The specimen described and recorded in this paper is first time collected and reported from India.

Eriocaulon sedgwickii (Family: Eriocaulaceae) is commonly known as 'Spherical Pipewort' in English and 'Gend' (Spherical ball-like) in Marathi after its spherical inflorescence and hollow inflorescence axis (Fig.1a&c). It is an annual erect common aquatic herb, 15-20cm tall. Stem is almost absent. Long membranous leaves, 7-15 cm arise from the roots, with sheaths at the base. Minute white flowers are arranged in spherical heads, carried on long, slender, grooved vertical stalks (Fig.1e). Flowers are white, 7-9 mm diameter. Bracts below the flowers are black. It is occasionally found gregariously growing in shallow flowing water on moist lateritic rocky plateaus commonly known as 'Sadas' in Western Ghats. It has been recently discovered from Maharashtra and it is endemic to Maharashtra only. Its habitat is subject to land conversion due to tourism, windmills, mining, housing and probably leading rapid decline of this species. However, the species does not cover a large area and it does not meet critical thresholds. In view of this the species is listed as Least Concerned in Red Data Book of India [2]. Cook [3] has provided a wider distribution but recent studies have confirmed that it is only present in Maharashtra [4].

2. MATERIALS AND METHODS

During regular excursions to the World Heritage site 'Kas Plateau' (Satara, Maharashtra, India, 17°40'N latitude and 73°56'E longitude, 1310 m amsl) the infected specimens of *E. sedgwickii* growing in natural habitats were collected in every monsoon from 2009-2012 for further investigations. The infested inflorescence was microscopically studied using cotton blue and lactophenol mixture. Identification of this pathogen was done with the help of available literature. The infected specimen was deposited to Mycological Herbarium of Agharkar Research Institute (ARI) Pune and its Accession No. is AMH- 9445.

Proof of the pathogenicity was studied by using Koch's postulates. The pathogen cultured and purified on PDA at $28 \pm 2^\circ\text{C}$ in the dark for a week and used to test pathogenicity. The cultured isolates were used for inoculation. The inoculated and uninoculated plants were kept separate under supervision till the development of symptoms. All the inoculated hosts showed the development of symptoms similar to that of naturally infected hosts. Uninoculated hosts did not show development of any symptoms. The pathogen was reisolated from test plants and found to be the same as that of original.

3. RESULTS AND DISCUSSION

Identification:

The pathogen isolated from naturally infected specimens (Fig.1b&d), culture isolates and reisolated from pathogenicity test was identified as *Curvularia eragrostidis* and further confirmed with National Fungal Culture Collection of India, ARI, Pune.



Fig. 1. *Eriocaulon sedgwickii* Fyson. a, c, e : Healthy specimens, b, d, f: Infected specimens, g: Infected and Healthy heads. *Curvularia eragrostidis* (P. Henn.) J. A. Meyer, h:(x45) conidia, i:(x100) Conidium with conidiophore and j: (x100) conidia

Symptoms:

The infected specimens turn grey black from original snow white. Under favorable conditions of monsoon the whole head turns black (Fig.1f). The infected heads remain small, underdeveloped weak and fall down (Fig.1g). The pathogenic growth extends downwards to discolor the apical region of inflorescence axis to brown. The infected inflorescence showed olivaceous brown mycelial growth and sporulation. There is no seed setting and seed development in such infected heads. The pathogen was restricted to head only (Fig.1g). The foliage, rhizome and roots did not show any symptoms. Colony on PDA medium was brown to black and velvety. Conidiophores simple or unbranched, straight or flexuous, macronematous, often geniculate, nodose and smooth (Fig.1i). Conidia solitary, terminal, often curved,

clavate, ellipsoidal, with 3 transverse septa, brown often with end cells paler with a dark band at the central septum (Fig.1h,i,j). A perusal of literature [5, 6, 7, 8, 9, 10, 11, 12 and 13] showed no previous record of association of this fungus with inflorescence of *E. sedgwickii*. Therefore, these investigations constitute the first report of *E. sedgwickii* as a new host of *C. eragrostidis*.

4. ACKNOWLEDGEMENT

Author is grateful to Dr. P. B. Chavan and Dr. S. H. Mahamulkar for their constant inspiration in this investigation. Thanks are also due to Prin. Dr. A. S. Burunagale and Dr. A. B. Pawar, Head, Department of Botany, Y.C.I.S. Satara for providing laboratory facilities.

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