Occurrence of *Pithomyces ellisi* Rao & Chary on *Carissa congesta* Wt. from India - A New Record

Rashmi Dubey and Neelima A. Moonnambeth

Botanical Survey of India, Western Regional Centre, Pune – 411001 (Maharashtra).

(Received on: 22 February, 2013; accepted on: 28 February, 2013)

ABSTRACT

Description and illustrations are provided for the new host record of *Pithomyces ellisii* on *Carissa congesta* from India.

Key Words: *Carissa congesta*, *Pithomyces ellisii*, sooty mould disease, new host record.

INTRODUCTION

Carissa congesta Wt. belongs to the family Apocyanaceae commonly known as 'Karmardak' in Sanskrit is widely distributed along the Western Ghats (Naik 2004). Different parts of the plants are having various important medicinal properties (Yoganarasimhan 1996). During October, 2012, a field survey was carried out in Thane district of Maharashtra to study various folicolous fungi. Symptoms of a new sooty mould disease on *Carrissa congesta* Wt. were observed in many locations. Initial symptoms were black flecks that enlarged and produced gray-black and velvety, often crust-like coating on the leaves of the plants (Fig.1A). Many sooty mould fungi were found causing severe infection on leaves of the plants. Thus the samples were brought to laboratory for detail identification of the species.

MATERIAL AND METHODS

Samples were collected from symptom- growing on small leaves of the host plant. The sooty mould fungi associated with host were mounted on a glass slide by colloidion technique (Hughes 1976).When a drop of colloidion solution was applied to a colony of such organisms on a leaf, the fungus got entirely embedded and the dried film could be peeled off readily from the host surface. Removal of the colloidion by acetone on a glass slide resulted in undisturbed preparations. The morphological characteristics of the isolates were studied in detail to identify the fungi associated with the disease. On critical examination of groups of sooty mould fungi, one of the fungi was identified as *Pithomyces ellisii* Rao & Chary 1972.

Corresponding author:
dr.rashmidubey@gmail.com

The host specimens have been deposited in Botanical Survey of India, Western Regional Centre, Pune with collection no. B.S.I (W.C.) – 201013, Accession No. BSI-132467 collected by R.Dubey, dated 16.10.2012 from Forest areas of Jhap, District Thane (M.H.).

RESULTS AND DISCUSSION

The detailed morphological description of *Pithomyces ellisii* is as follows: The isolate Colonies extensive, pulvinate, grayish to bluish black, coalescent and measuring 5-10 mms across. Mycelium superficial composed of the network of branches, septate, pale brown to dark brown, and 3.99 - 5.81u thick. Conidiophores short, peg like, single or sometimes forming a group of 5-10, borne by the hyphae laterally, straight, flexuous or curved, 1- celled, cylindrical, pale brown to brown smooth, thin walled, fragile, 3.05 - 7.94um long, 3.6 - 4.64um broad. Conidia (holoblastic) formed singly as blown out ends at the apex of each conidiophores, phaeo – phragmospores, with 5-15 transverse and 1-10 oblique or longitudinal septa, straight or slightly curved, oval, obclavate to obpyriform rarely limoniform carrying a fractured portion of the conidiophores wall, dark brown to black on maturity, often opaque but translucent near the apex and base, smooth, 20.96-40.2um long, 10.66 – 17.80 um broad at the broadest, tapering abruptly to form beaked apex, obtuse, acute, acuminate or round, 1.8-10.8u long and 2.8-3.5u broad, 2-4 transversely septate (Fig. 1 B & C) Review of pertinent fungal literature reveals that this species is of rare occurrence. This fungus has

Figure 1. ***Pithomyces ellisii*** **Rao & Chary. A. Disease plant of** ***Carrisa congesta*** **Wt. B. colonies (X 1000) C. conidiophores and conidia (X 1000)**

reported in India only from the State of Andhra Pradesh on various hosts like *Lantana camara*, *Tectona grandis*, Bark of *Eucalyptus sp.* and as a mycoparasite on setae of *Excipularia naraspurensis* (Bilgrami *et al.* 1991). Hence this is the first report of occurrence of *P. ellisi* on *C. congesta* from India and worldwide (Bilgrami *et al.* 1991 and Jamaluddin *et al.* 2004).

Medicinal plants should be free from microbial infections. Among the disease causing organism foliicolous fungi play a very important role. Fungi attacking leaves of a medicinal plant directly affect photosynthesis by reducing the productivity. In addition, the quality of photosynthate and in turn the medicinal property of the plant is also degraded. It becomes necessary for herbal practioner to be aware of this information. This will certainly be vital in preparation of problem safe medicines to cure the diseases and maintain the human health.

ACKNOWLEDGEMENTS

Authors are highly thankful to the Director, Botanical survey of India, Kolkata for encouragement. They are also grateful to Head of the office, Botanical Survey of India, Western Regional Centre, Pune for her kind support. Ministry of Environment and Forest, New Delhi is also thankfully acknowledged.

REFERENCES

Bilgrami KS, Jamaluddin and Rizwi MA**.**1991**.** The Fungi of India. Part III (List and References).Today and Tomorrow's Printer and Publishers, New Delhi.798p.

Hughes SJ. 1976. Sooty mould. Mycologia 68:693-820.

Jamaluddin, Goswami, MG and Ojha BM. 2004. Fungi of India 1989-2001, Jodhpur, Scientific publishers. 326 p.

Naik VN 2004. Identification of common Indian Medicinal Plants, Scientific Publishers (INDIA) Jodhpur (RAJ). 122p.

Rao V and Chary SJ. 1972. A New Pithomyces from India. Current science 41(22): 822-823.

Yoganarasimhan SN. 1996 Medicinal Plants of India Vol.I, Karnataka, Interline Publishing Private Limited, Bangalore. 96p.