Journal on New Biological Reports
JNBR 4(3) 211 – 214 (2015)

ISSN 2319 – 1104 (Online)

Published by
www.researchtrend.net

Puccinia melanocephala: first report from Punjab, India

I. B. Prasher[1*], Vineeta Sharma[2], Rajnish Kumar Verma[1], Sushma[1], Gurdev Singh[1]

[1] Plant pathology and mycology laboratory, Department of Botany, Panjab University, Chandigarh– 160014, India
[2] Department of Botany, Post Graduate Girls College Sector 42, Chandigarh– 160036, India

***Corresponding author:** chromista@yahoo.co.in

| **Received**: 31 July 2015 | **Accepted**: 15 September 2015 |

ABSTRACT
Puccinia melanocephala H. & Syd. Causing Brown rust of sugarcane on *Saccharum* species first time reported from Punjab and adjoining areas.

Key Words: Sugarcane rust, taxonomy, urediniospores, teliospores.

INTRODUCTION

Brown rust of sugarcane appears as a mass of red to brown urediniospores erupting from pustules arranged in long, narrow stripes on leaf sheaths of susceptible plant. *Puccinia melanocephala* H. & Syd. is one of the important fungal pathogens of sugarcane in India. It has been recorded from Andhra Pradesh, Maharashtra, Uttar Pradesh, Kerala and other sugarcane growing regions of the country (Bilgrami *et al.* 1991 and Jamaluddin *et al.* 2004). However, it has not been reported till to date from Chandigarh and adjoining areas (Punjab). This paper gives an account of this fungus from different localities around Chandigarh for the first time.

MATERIALS AND METHODS

Freehand sections of infected tissue and spores were mounted in lactophenol and 4 % KOH and gently heated to boiling. The preparations were observed microscopically under a Matrix stereo trinocular microscope (VL–Z60) and transmission microscope (VRS–2*f*) for macroscopic and microscopic characters. All measurements were made with the help of Pro MED software. The specimen were deposited in the herbarium of Panjab University Chandigarh India (PAN).

TAXONOMY

Puccinia melanocephala Syd. & P. Syd., in Sydow, Sydow & Butler, Annls mycol. 5(6): 500 (1907) **Fig. 1–4**

= *Dicaeoma melanocephalum* (Syd. & P. Syd.) Arthur & Fromme, N. Amer. Fl. (New York) 7(4–5): 340 (1920)

Uredinia primarily hypophyllous (on lower surface of leaves), cinnamon–brown, linear up to 4 mm, urediniospores obovoid or ellipsoidal, 32–42 × 23–27 µm, cinnamon to dark–brown, echinulate, paraphyses hyaline to golden, capitate or

spathulate, 72–98 × 13–23 µm. Telia hypophyllous, exposed, black to dark–brown, teliospores 42–60 × 16–24 µm, mostly clavate, upper cell dark brown, lower cell paler, pedicels brown, thin–walled, usually not collapsing, 15–20 × 7–9.5 µm.

Collection examined: India, Punjab, Bindrakh Tapriyan Village, About 22 Kilometers from Chandigarh, 18 April 2014 Gurdev Singh, PAN (32761) 22 May 2014, I. B. Prasher & R. K. Verma PAN (32762).

The morphological features and anatomical details of the above specimen closely resemble the type description.

Fig. 1. ***Puccinia melanocephala*** A–D Uredinia on *Saccharum* species in nature (PAN 32762).

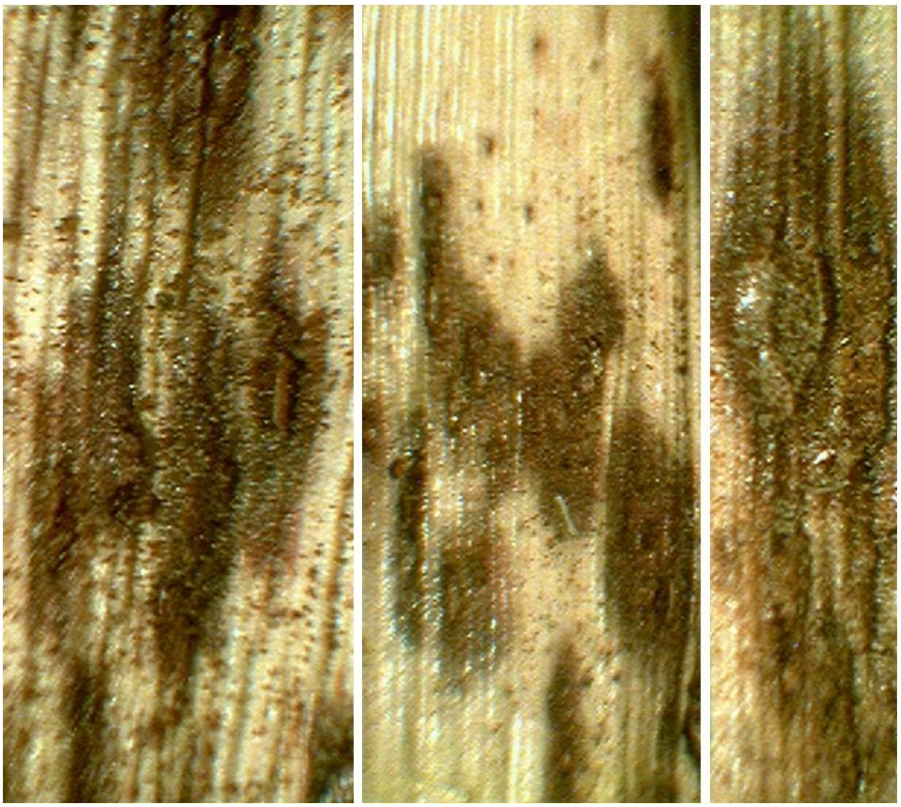

Fig. 2 ***Puccinia melanocephala*** A–D Uredinia on *Saccharum* species from herbarium specimen (PAN 32761).

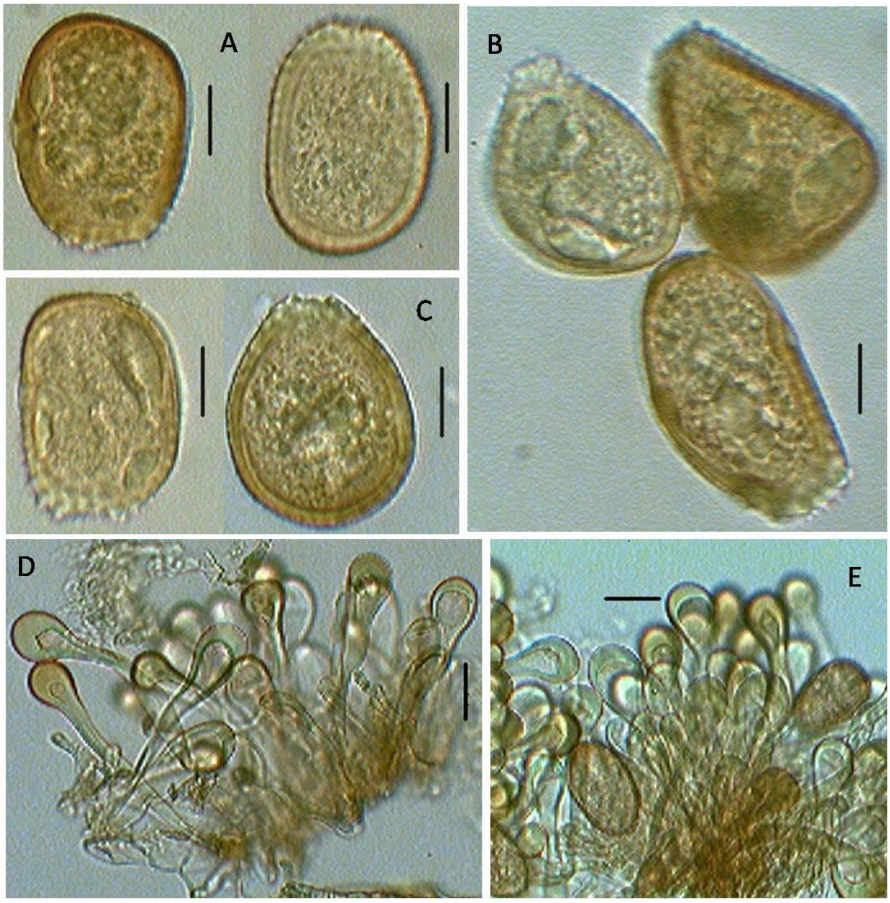

Fig. 3 ***Puccinia melanocephala*** A–C Uredenospores D, E Abundant Paraphysis with Uredenospores. Scale Bars A–C= 10µm. D, E = 20µm.

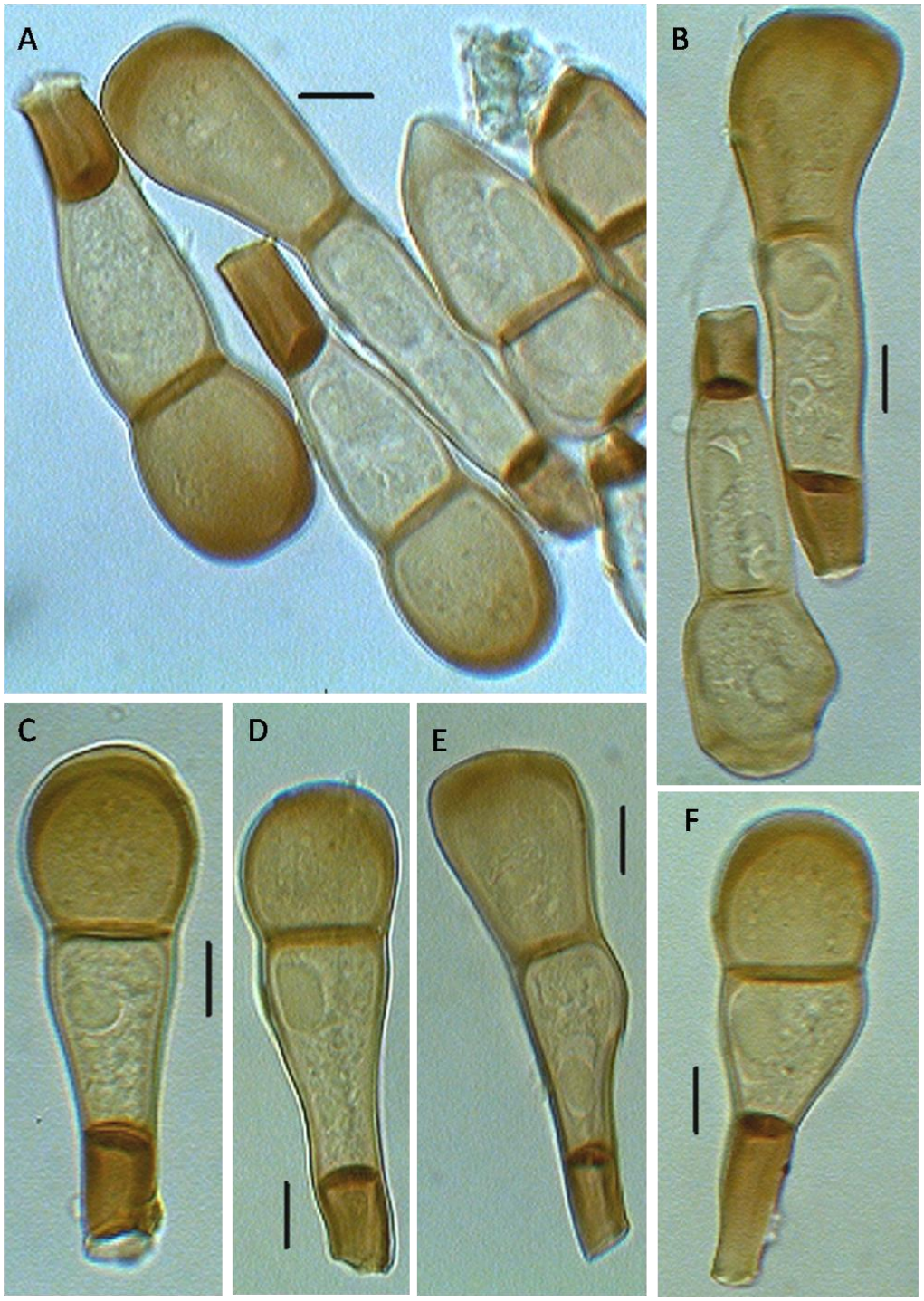

Fig. 4 ***Puccinia melanocephala.*** A–F Teliospores Scale bars: A–F= 10 µm

ACKNOWLEDGEMENTS

The authors are thankful to Ministry of Environment and Forests, Government of India for the financial assistance (vide letter No. 14/26/2008–ERS/RE dt. 06. 07. 2010) and to UGC (SAP, DRS III) and Chairperson Botany Department Panjab University for providing infrastructural and laboratory facilities.

REFERENCES

Jamaluddin, Goswami MG, Ojha BM. 2004. Fungi of India 1989–2001. Scientific Publishers, Jodhpur, India.

Bilgrami KS, Jamaluddin, Rizwi MA. 1991. Fungi of India List and References. Today and tomorrow's Printers & Publishers, New Delhi, India.