

SHORT COMMUNICATION

A new record of rust caused by *Puccinia thaliae* on *Canna indica* in Sikkim

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A new rust disease of *Canna indica* caused by *Puccinia thaliae* in Sikkim was reported for the first time.

Key words: *Canna indica*, *Puccinia thaliae*, rust, Sikkim

Canna indica is an ornamental plant belonging to the family Cannaceae. It is mainly used in landscaping of parks and gardens (Neo and Tham 2009). During July, 2012 it was observed that the *Canna indica* plants growing in ICAR farm at Tadong, Gangtok showed numerous yellow pustules on the lower surface of the leaves. The corresponding upper portion showed minute yellow lesions. The infected leaf samples were brought to the laboratory and microscopically examined for the detailed study of the disease. Microscopic observations revealed the presence of urediniospores of rust. Uredinia appeared as yellow-orange hypophyllous lesions, 0.5-2.0 mm in diam (Fig. 1), and were subepidermal and erumpent. Urediniospores were ovate, measuring 29.62-40.20 μm x 16.67-21.81 μm and were yellow-orange with many oily refractile globules. Walls of urediniospores were thick and echinulate. Spermogonia, aecia and teliospores were not found in any of the infected leaves examined. The fungus was identified as *Puccinia thaliae* based on morphology and symptoms on the host. A reference sample has been deposited in the herbarium of the Indian Agricultural Research Institute, New Delhi (HCIO No.51483).

This is the first record of *P. thaliae* infecting *C. indica* in Sikkim. The rust, caused by *P. thaliae*, has

been reported previously from Hawaii, Singapore and South Africa (Gardner and Martinez 1985; Neo and Tham 2009; van Jaarsveld *et al.* 2006). Maji (2003) for the first time reported *P. thaliae* infecting *C. indica* in west Bengal, India. Jeeva *et al.* (2004) also reported the same rust fungus infecting *Canna edulis*, which is cultivated mainly for its starchy and tuberous rhizome. Bagyanarayana & Ramesh (1999) reported *Puccinia cannacearum*, another rust fungus on *Canna indica*, from India and found that the fungus produced both uredospores and teliospores.

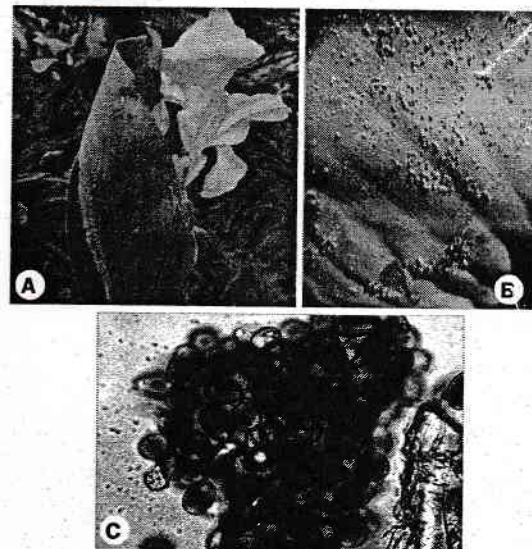


Fig. 1 : Rust of *P. thaliae* on *Canna indica*: a=Rust infected plant, b= rust pustules on leaf; C = Urediniospores

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REFERENCES

- Bagyanarayana, G. and Ramesh, A. 1999. *Puccinia cannaearum*, a new rust taxon on *Canna indica*. *Indian Phytopath* **52**: 98-99.
- Gardner D.E. and Martinez, A.P. 1985. Occurrence of Canna Rust (*Puccinia thaliae*) in Hawaii. *Plant Dis* **69**: 1101.
- Jeeva, M.L., Hegde, V, Makesh Kumar, T. Sriram, S. Nair, R.R., Edison, S. and Mathur, N. 2004. Rust of Queensland arrowroot (*Canna edulis*) caused by *Puccinia thaliae*: a new record for India. *Plant Pathol* **53**: 261.
- Neo, N.W. and Tham, F.Y. 2009. Occurrence of leaf rust of Cannain Singapore caused by *Puccinia thaliae*. *New Dis Rept* **19**: 67.
- van Jaarsveld, C. Kriel, W.M. and Minnaar, A. 2006. First report of *Puccinia thaliae* on Canna lily in South Africa. *Plant Dis* **90**: 113.
- Maji, M.D. 2003. A new rust disease of *Canna indica* in India. *Indian Phytopath* **56**:302