

# A new species of *Corynespora* causing foliar disease on *Ficus religiosa* from forest of Sonebhadra, Uttar Pradesh, India

Singh A<sup>1</sup>, Kumar S<sup>2\*</sup>, Singh R<sup>3</sup> and Dubey NK<sup>1</sup>

<sup>1</sup>Center of Advanced Study in Botany, Banaras Hindu University, Varanasi 221005 (U.P.), India

<sup>2</sup>Herbarium Division, Birbal Sahni Institute of Palaeobotany, 53, University Road, Lucknow-226007(U.P.), India.

<sup>3</sup>Department of Botany, D.D.U. Gorakhpur University, Gorakhpur-273009 (U.P.), India.

Singh A, Kumar S, Singh R, Dubey NK 2012 – A new species of *Corynespora* causing foliar disease on *Ficus religiosa* from forest of Sonebhadra, Uttar Pradesh, India. Mycosphere 3(5), 890–892, Doi 10.5943 /mycosphere/3/6/2

A new species of *Corynespora* is described, illustrated and compared to similar species. *C. ficigena* sp. nov. was collected on *Ficus religiosa* (Moraceae) from forest flora of Sonebhadra, Uttar Pradesh, India.

**Key words** – *Corynespora* – Foliicolous hyphomycete – Fungi – Morphotaxonomy – New species

## Article Information

Received 17 October 2012

Accepted 23 October 2012

Published online 5 November 2012

\*Corresponding author: Shambhu Kumar – e-mail – skumartaxon@gmail.com

## Introduction

During our recent survey (2007–2009) of the forest region of Sonebhadra of District Mirzapur, Uttar Pradesh, a large number of collections showing foliar disease have been encountered. Within these, a new species, *Corynespora ficigena* on *Ficus religiosa* (Moraceae) was found. A description and illustration of the taxon is presented in this paper.

## Methods

Surface scrapping and free hand cut sections of infected leaf samples, collected from Sonebhadra forests of Uttar Pradesh, were taken through infection spots and mounted in lactophenol cotton-blue mixture for microscopic examination, camera lucida drawing and micrometry. Type specimens have been deposited in Herbarium Cryptogamiae Indiae Orientalis (HCIO), Indian Agriculture Research Institute (IARI), New Delhi and their isotopes have been retained in the departmental

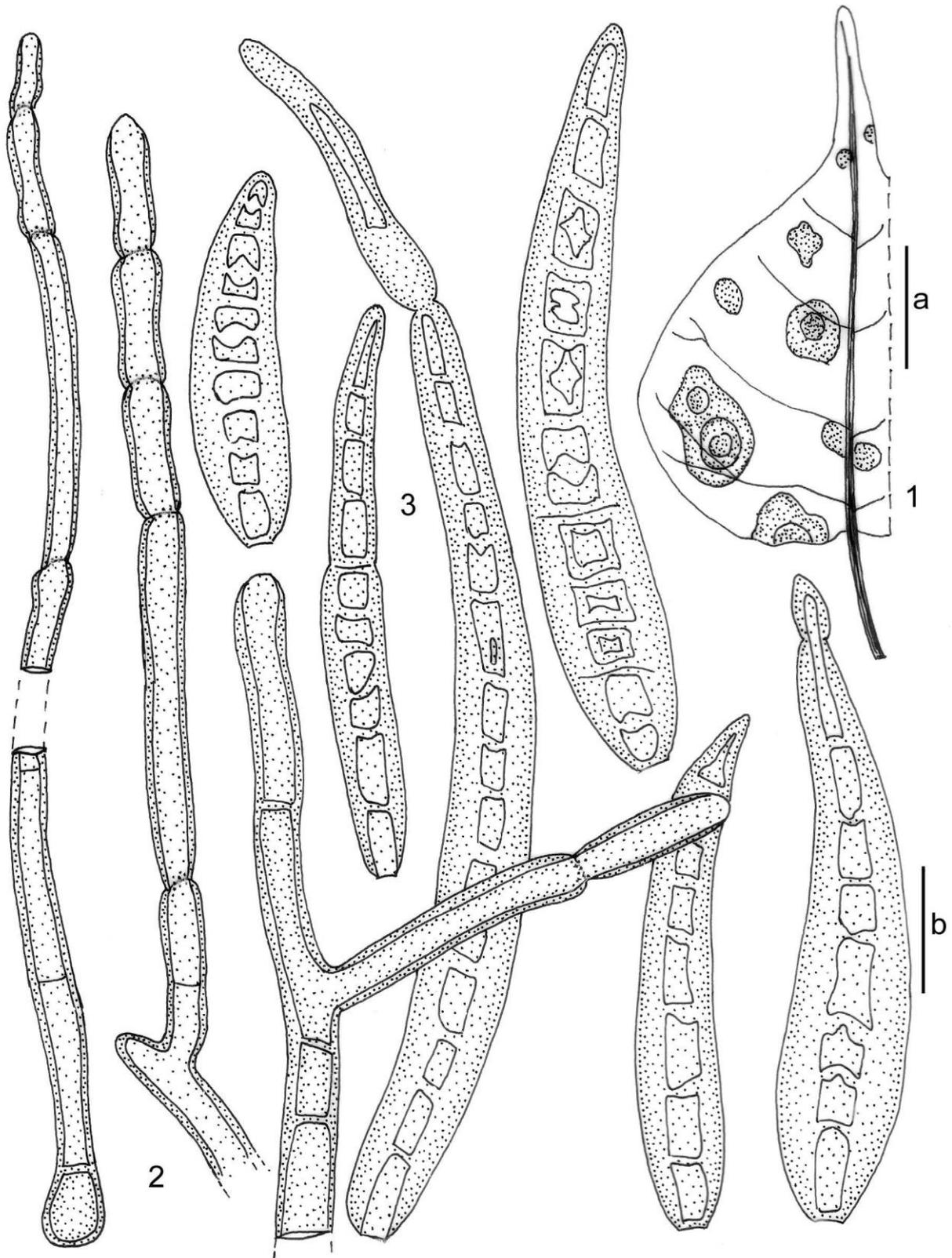
herbarium for further reference. Morphotaxonomic comparisons were made with allied taxa and by consulting the current literature pertaining to taxonomy of *Corynespora*. Descriptions and nomenclatural details were deposited in MycoBank (www.Mycobank.org).

## Results

### Taxonomy

*Corynespora ficigena* Archana Singh, Sham. Kumar, R. Singh & Dubey **sp. nov.** Fig. 1 MycoBank MB 801329

Leaf spot amphigenous, subcircular to irregular, spreading on entire leaf surface, necrotic, brown to dark brown, up to 10 mm in diam. Colonies hypophyllous, effuse. Mycelium internal, composed of branched, septate, thin-walled, smooth, subhyaline to olivaceous hyphae. Stromata absent. Conidiophores macronematous, mononema-



**Fig. 1** – *Corynespora ficigena*. **1** Infection spots **2** Conidiophores. **3** Conidia. Bars a= 20 mm, b= 20  $\mu$ m.

tous, arising singly from hyphae, erect, straight to flexuous, smooth, thick-walled, cylindrical, branched, pale brown to brown, up to 10-septate, 2–4 successive, cylindrical, terminal proliferations, dark brown  $135\text{--}400 \times 6\text{--}8 \mu\text{m}$ . Conidiogenous cells integrated, terminal or intercalary, monotretic, smooth, cylindrical, scars unthickened, swollen towards apex. Conidia acrogenous, solitary, simple, dry, thin-walled, smooth, straight to slightly curved, obclavato-cylindrical, 7–13-distoseptate, apex obtuse, base obclavate, light olivaceous brown, hilum unthickened, germinating conidia with germ tube are observed,  $90\text{--}165 \times 9\text{--}20 \mu\text{m}$ .

Type – On living leaves of *Ficus religiosa* L. (Moraceae), Sonebhadra, (U.P.), India, Nov. 2009, coll. Archana Singh BHU Herb No. 9098 (**isotype**), HClO 50142 (**holotype**).

Etymology – *ficigena* in reference to the host genus.

Perusal of literature revealed that two species of *Corynespora* viz. *C. fici-altissimae* X.G. Zhang & J.J. Xu (Zhang & Xu 2005) and *C. fici-benjaminiae* H.B. Fu & X.G. Zhang & Zhang (Zhang et al. 2009) have been described on the host genus. Hence, the morphology of the new species was compared with these two taxa.

From comparison, it is clear that the conidiophores are unbranched in *C. fici-altissimae* and *C. fici-benjaminiae* while branched in *C. ficigena*. The conidiophores of *C. ficigena* are smaller ( $135\text{--}400 \times 6\text{--}8 \mu\text{m}$ ) with fewer proliferations (2–3) than in *C. fici-altissimae* ( $30\text{--}65 \times 5\text{--}6 \mu\text{m}$ ) and *C. fici-benjaminiae* ( $152\text{--}467 \times 5.5\text{--}11 \mu\text{m}$ ). The

conidia are longer ( $90\text{--}165 \times 9\text{--}20 \mu\text{m}$ ) in *C. ficigena* than *C. fici-altissimae* ( $55\text{--}85 \times 9\text{--}12 \mu\text{m}$ ) and *C. fici-benjaminiae* ( $51.5\text{--}71 \times 8\text{--}11 \mu\text{m}$ ). The conidia of *C. ficigena* have 7–13 distosepta while *C. fici-altissimae* has 11–18 and *C. fici-benjaminiae* has 5–10.

Therefore, the present species merits recognition as a new taxon.

### Acknowledgements

Authors are grateful to the Head, Department of Botany, Banaras Hindu University (BHU), Varanasi, Uttar Pradesh, India for providing library and laboratory facilities. Author's thanks are also due to the Curator, Herbarium Cryptogamiae Indae Orientalis (HCIO), Indian Agriculture Research Institute (IARI), New Delhi for depositing the holotype specimens and providing accession numbers thereof. Dr. Archana Singh is thankful to Department of Science and Technology, Government of India, New Delhi for providing financial support under Women Scientist Scheme (WOS-A). Authors are also thankful to Anonymous for critical review of the manuscript.

### References

- Zhang Xiu-Guo, Xu Jun-Jie. 2005 – Taxonomic studies of *Corynespora* from Guangxi, China. Mycotaxon 92, 431–436.
- Zhang K, Fu Hong-Bo, Zhang Xiu-Guo. 2009 – Taxonomic studies of *Corynespora* from Hainan, China. Mycotaxon 109, 85–93.