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Acremoniula rutacearum - A New Foliicolous Fungal Species Infecting *Aegle marmelos* (L.) Correa from Ambikapur, Chhattisgarh, India

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ABSTRACT

A field survey was conducted from shaded areas of Ambikapur, Chhattisgarh in India. Micro foliicolous fungi was found from Sanjay Park in the month of January 2019. The flora of Ambikapur, C.G., India is dense and is suitable for the emergence of fungi. The forest survey of Ambikapur (C.G.) has resulted in the collection of undescribed novel fungus, affecting living leaves of *Aegle marmelos* (L.) Correa. Based on morphological characters, microscopic images, SEM based analysis and comparison with other parallel taxa, a novel species of *Acremoniula* namely *Acremoniula rutacearum* has been described. Literature survey reveals *Acremoniula* is fewer recorded genus and no species of *Acremoniula* is reported on the host family as well as on plant *Aegle marmelos*. Only 9 species are published from the genus *Acremoniula* all over world. *Acremoniula sarcinellae* (Pat. & Har.) Arnaud ex Deighton, 1969 and *Acremoniula monospermae* show some similarities with the proposed species alongside show differences. The critical investigation exposes that the present collection is utterly distinct in symptoms, dimension of micronematous conidiophores, truncate base and conidia.

Key words: *Acremoniula, Aegle marmelos,* Ambikapur, Foliicolous fungi, Flora and novel fungi

INTRODUCTION

Chhattisgarh is known for its prosperous plant and fungal diversity. Forest flora of Ambikapur is rich, little or few attention is drawn to fungal diversity of Ambikapur. During the survey of Sanjay Park, Ambikapur, Chhattisgarh massive fungal samples were collected on economic and medicinally important plant and one of them was *Aegle marmelos* (L.) Correa (Rutaceae) (Khalkho and Rai, 2021). Regular survey of Sanjay Park was conducted for fungal sample collection during every season. The number of fungi till date is likely 2.2 to 3.8 million fungal species, which is only 8% (Hawksworth and Lücking, 2017). The plant is known for its medicinal value i.e. constipation (Chaudhary and Khalkho, 2025). Conidia of this genus are solitary, acropleurogenous, olivaceous brown, smooth, subcylindrical to very long ellipsoidal (Ellis, 1971). The present fungal species is never been previously disclosed, hence contributes to a novel fungal species. Only 9 species are published from the genus *Acremoniula* all over world, few species are *Acremoniula uniseptata* (Hüseyin *et al*., 2015) and *Acremoniula cladoniae* (*Boers et al.*, 2024), *Acremoniula sarcinellae* (Pat. & Har.) Arnaud ex Deighton, 1969 (Ellis, 1971) and *Acremoniula monospermae* (Dubey *et al*., 2019) show some similarities with the proposed species alongside show differences. The critical investigation exposes that the present collection is utterly distinct in symptoms, dimension of micronematous conidiophores, truncate base and conidia.

MATERIALS AND METHODS

Survey was conducted in every alternate month of 2017 at Ambikapur, Chhattisgarh, India. Fungal infected leaves of *Aegle marmelos* (L.) Correa (Rutaceae) was collected in clean polythene bags. with a tag with area, date of collection, local and botanical name, symptoms and location mentioned (Bhardwaj *et al*., 2020; Dubey *et al*., 2019).

Infected leaves with lesion appearance were scraped on a clean slide mounted along with lactophenol cotton blue and covered with coverslip (Khalkho *et al.*, 2025). Olympus CX2li trinocular microscope was used for morphological features identification. Samples were dried therefore preparative treatment was

not given (Bhardwaj *et al*., 2020; Khalkho *et al*., 2021). SEM images were clicked under double beam FEI Nova nano SEM-450 at Dr. Harisingh Gour Vishwavidyalaya, Sagar, M.P.

The sample is deposited in Ajrekar Mycological herbarium- AMH, Pune, Maharashtra, India. The sample is also deposited in Departmental Herbarium of Botany, Dr. Harisingh Gour Vishwavidyalaya, Sagar, M.P.

RESULT

Taxonomy and Description

Acremoniula rutacearum on living and dried leaves of *Aegle marmelos* (L.) Correa (Rutaceae), Sanjay Park, Ambikapur, Chhattisgarh, January 2019 leg. Anshu Deep Khalkho (Holotype AMH-10344, Isotype RAH-150).

Etymology: *rutacearum* is derived from the name of host family.

Symptoms amphigenous, spread all over lower and upper surface of green as well as dry leaves. Colonies effuse, amphiphyllous, powdery, black, easily removable, present intermixed with *Sarcinella*. Mycelium superficial, septate, olivaceous brown, smooth, 2- 5 µm wide. Conidiophores micronematous, mononematous, unbranched, straight to flexuous, hyaline, smooth, upto 30.17 µm length, 2.30-5.50 µm wide. Conidia solitary, acrogenous, simple, obovoid, subspherical, mostly truncate at the base, brown to black, smooth walled, 8.80 - 12 x 8- 12.93 µm, truncate base 3.20- 5 µm wide.

DISCUSSION AND CONCLUSIONS

Literature survey reveals *Acremoniula* is fewer recorded genus and no species of *Acremoniula* is reported on the host family as well as on plant *Aegle marmelos*. Only 9 species are published from the genus *Acremoniula* all over world. *Acremoniula sarcinellae* (Pat. & Har.) Arnaud ex Deighton, 1969 (Ellis, 1971) and *Acremoniula monospermae* (Dubey *et al*., 2019) show some similarities with the proposed species alongside show differences. The critical investigation on the table exposes that the present collection is utterly distinct in symptoms, dimension of micronematous conidiophores, truncate base and conidia. Therefore, it is valid to propose *Acremoniula rutacearum* as a novel taxon of species rank.

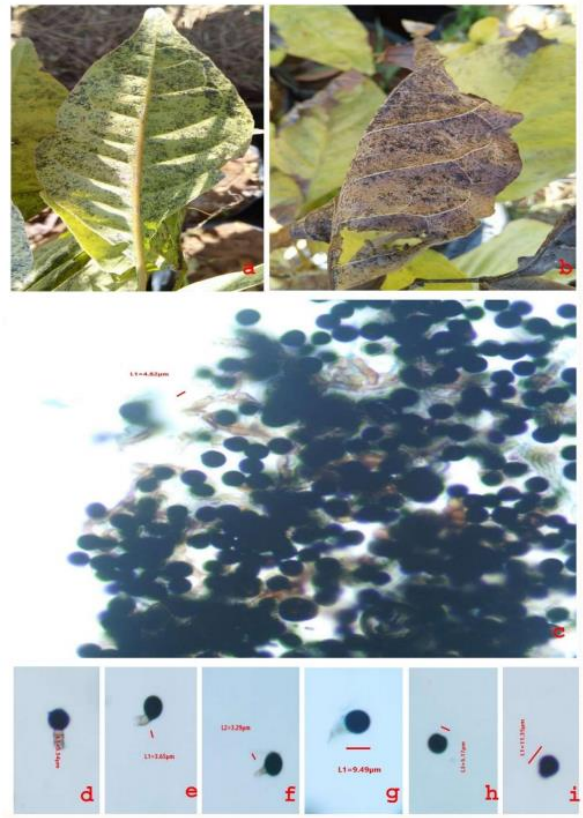


Figure 1: Symptoms and Microphotographs of *Acremoniula rutacearum* sp. nov. on *Aegle marmelos* (Holotype- AMH-10344). a-b, symptoms; c, Mycelium with conidia; d-f, conidium with conidiophore; g, conidium; h-i, truncate base of conidium.

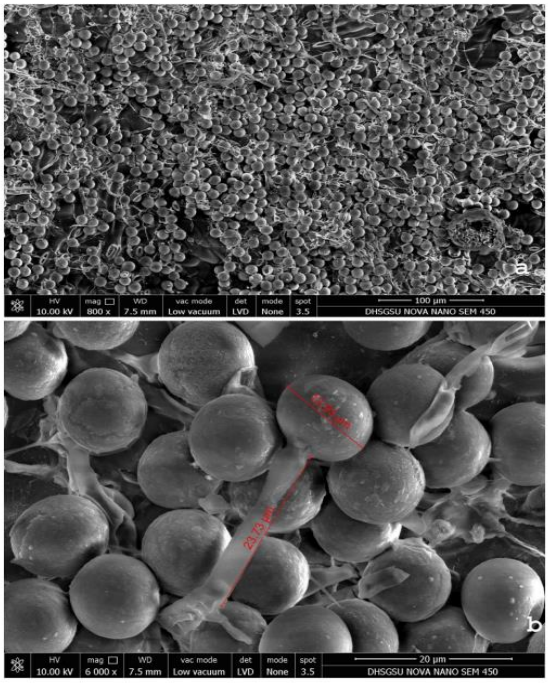


Figure 2: SEM images of *Acremoniula rutacearum* sp. nov. on *Aegle marmelos* (Holotype- AMH-10344). a, Bunch of conidia; b, Attachment of conidium with conidiophore.

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