



## *Erysiphe dhamoniensis* first reported from Central India

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### Abstract

The fungus *Erysiphe dhamoniensis* sp. nov., on living leaves of *Coccinia grandis* L. (Cucurbitaceae), Dry deciduous forest of Dhamoni forest (Madhya Pradesh), India, is described, illustrated and discussed. Its identity is confirmed by the key of order *Erysiphales*.

**Keywords:** ascomycota, *Erysiphe*, taxonomy, anamorph

### Introduction

The order *Erysiphales* is a fungal group causing important plant disease (powdery mildew) on about ten thousand angiosperm plants including many economically important cultivated plants (Braun 2011) [2]. The biodiversity of the order *Erysiphales* is less explored in tropical and subtropical region as compared to temperate regions of the Northern Hemisphere (Hirata 1976) [5]. The anamorph or primary symptom is like a white powder, spread on entire plant part leaves, young stem, fruits and inflorescence. The anamorphic or white powder is due to conidiophores and conidia they produce. Characteristic feature of *Erysiphe* described at morphological level, mycelium superficial, hyaline, simple or branched. Conidiophores erect, septate hyaline. Conidia single cell, hyaline, solitary or in chain. Symptoms were observed like a white powder spread on both the surface of leaves which are conidia and conidiophores.

### Material and method

Living leaf with distinct symptoms were collected during field survey in winter, 2021. Slides were prepared in lactophenol and cotton blue mixture from the scrapping taken from the infected area of leaf, mounted slides were observed under Metzger light microscope (100x and 400x). Measurements were made of conidiophores and conidia.

The holotype is deposited in the Ajerker Mycological Herbarium (AMH), Ajerker Pune India (ARI) as type material and isotype also deposited in the Mycological Herbarium of the Department of Botany, Dr. H.S. Gour Central University Sagar (MP) India.

### Taxonomy

*Erysiphe dhamoniensis* D. Ahirwar, R. Mehta and sp. nov.  
sp. nov.- Fig-2: a-h

### Type

India, M.P., Sagar Forest, November 2021, on living leaves of *Coccinia grandis* L. Deepak Ahirwar, (holotype –AMH-, isotype Department of Botany, Dr. H.S. Gour Central University Sagar MA)

### Etymology

Latin, *dhamoniensis* refers to the origin place of collection. Mycelium amphigenous, mat like and persistent, hyaline, forming regular or irregular white patches on the host surface, later powder spread on entire leave. Hyphae hyaline, superficial, Conidiophores erect, hyaline, simple, smooth, thin walled, septate, 52.5-255.5x9-15.5µm dim., bearing conidia in chain. Conidia hyaline single cell thin wall catenate aseptate, cylindrical, 26.5-43.5x8.5-12µm dim.

**Table 1:** Comparative study of *Erysiphe dhamoniensis* to allied sp.

Character	<i>Erysiphe cichoracearum</i> var. <i>cichoracearum</i> (Braun 1987)	<i>Erysiphe cichoracearum</i> var. <i>saussurea</i>	<i>Erysiphe dhamoniensis</i> sp. nov.
Mycelium	Amphigenous	Amphigenous	Amphigenous
Conidiophore	Simple, 31-52x9-13 µm	Simple, 100-155x12-14 µm	52.5-255.5x9-15.5µm dim.
Conidia	24-42x 14-21 µm	29-54x 17-23 µm	26.5-43.5x8.5-12µm dim.
Perithecia	84-129 µm diam.	108-179 µm dim.	Not observe
Appendages	103-144x4-8 µm	44-129x2-8 µm	Not observe
Asci number	Numerous	Numerous	Not observe
Size of ascus	58-79x29-41µm	68-94x30-40µm	Not observe
Ascospores no.	2-3	2	Not observe
Ascospores size	17-27x12-48µm	26-40x17-21µm	Not observe

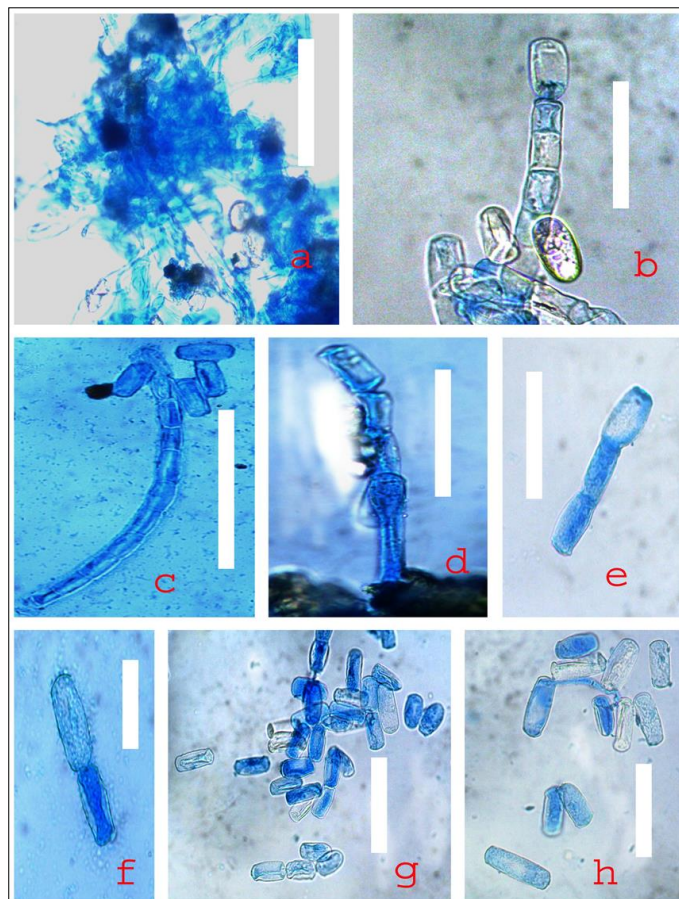
### Discussion

Tabulation data show the difference between *Erysiphe cichoracearum* var. *cichoracearum* and *Erysiphe cichoracearum* var. *saussurea* reported on same host. The

diagnostic morphological features of two species of *Erysiphe* is conidiophores and conidia small than *Erysiphe dhamoniensis*.



**Fig 1:** Symptoms of *Erysiphe* sp. on *Coccinia grandis* L.(Cucurbitaceae). (AMH-10452) a. Infected host plant showing anamorph stage; b. Anamorph stage on upper surface of leaf; c- Heavily anamorph stage on upper surface of leaf. Scale bars- a-c -10mm.



**Fig 2:** Microphotograph of *Erysiphe dhamoniensis* (holotype AMH-10452) a. Mycelium; b-d Conidiophores; e-f. Conidia in chain; g-h different size of conidia; scale bars: a-d= 50µm, e-h = 20 µm.

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