

A new distribution record of the macrofungus *Galiella rufa* from Assam

Galiella rufa (Schwein.) Nannf. & Korf is a macrofungus also known as the Rubber Cup, the Rufous Rubber Cup, or the Hairy Rubber Cup, in the family Sarcosomataceae, order Pezizales, class Pezizomycetes, phylum Ascomycota, and kingdom Fungi. The fruit body of *G. rufa* is not considered edible in North America but it is edible in Malaysia. The macrofungus produces several interesting natural products. *G. rufa* produces several structurally related hexaketide compounds that have attracted attention for their biological properties: pregaliellalactone and galiellalactone (Köpcke et al. 2002a). The compounds have anti-nematodal activity to kill nematodes (Köpcke et al. 2002b). These compounds have been shown in laboratory tests to inhibit the early steps of the biosynthetic pathways induced by plant hormones known as gibberellic acids, and they also inhibit the germination of seeds of several plants (Hautzel & Anke 1990). So, the species is very important from medicinal point of view.



A–F—Different developmental stages of *Galiella rufa* | G—Vertical section of macrofungus | H—An ascus showing eight ascospores | I—Measurement of an ascospore. © Girish Gogoi.

The fruit body was found in the campus of ICFRE-Rain Forest Research Institute (RFRI), Jorhat, Assam on 21 June

2023 on a heap of dead and decaying twigs of trees. The geographical position where the macrofungus was found

is 26.7808 N & 94.2933 E, and 118 m. This is the first distribution report of *Galiella rufa* from Assam. The macrofungus was collected by the first author and micromorphological study was done in the Mycology Laboratory of ICFRE-RFRI, Jorhat. The specific epithet *rufa* means “rusty” or reddish-brown” that refers to the colour of the hymenium. In the initial stage the fruit bodies of *G. rufa* was closed and roughly spherical that looks like a puffball. Later on the puffball like fruit body opened in the shape of a shallow cup, and reached diameters of 1.5–5.5 cm wide. The height of the fruit body ranges 2–7 cm. The margin of the cup is curved inwards and irregularly toothed; the teeth are lighter colour than the hymenium. The interior surface of the cup, which bears the spore-bearing surface (the hymenium) is reddish-brown to orange-brown. The exterior surface is blackish-brown, and covered with hairs that measure 7–8 µm long that give it a felt-like or hairy texture. Stipe mostly lacking but sometime a pseudostipe extending downward to 4 mm. The flesh of the fruit body lacks any distinctive taste or odour, and is grayish, translucent, gelatinous, and rubbery. The vertical section of the macrofungus shows water inside the fruit body.

Galiella rufa was found saprobic, and can grow solitarily, more usually in groups or in clusters on decaying twigs, and dead wood. The macrofungus is found in midwest and eastern North America (Seaver 1942). The species is also found in Malaysia (Abdullah & Rusea 2009).

The asci bear eight ascospores and the spores were found thin-walled, ellipsoid-subfusoid, hyaline, with narrowed ends, and covered with fine warts. The dimensions of the spores were of 12–22.8 x 8–12.1 µm. The length of the asci was 200–250 µm. The paraphyses were found cylindrical, septate, slender, and threadlike.

References

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