

## Outlineoffungi.org - Note 1405 *Entrophosporales*

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### *Entrophosporales* Błaszcz., Sánchez-García, B.T. Goto & Magurno

Błaszczowski et al. (2022) erected *Entrophosporales* under *Glomeromycetes* (*Glomeromycotina* and *Mucoromycota*) to accommodate *Entrophosporaceae* (Oehl and Sieverd.), emend. Błaszcz., Sánchez-García, B.T. Goto, and Magurno. based on phylogenomic, phylogenetic, and morphological analyses. In the new order, entrophosporoid spores are formed in the necks of sporiferous saccules, primarily in soil and occasionally in roots. These spores have two walls, with the first wall consisting of short-lived to semi-permanent layers and a permanent pigmented layer. The second wall is composed of three hyaline layers. Glomoid spores are formed at the tips of sporogenous hyphae and can be connected to the entrophosporoid morph or extraradical mycorrhizal hyphae. These spores have one wall with two to five layers, and the innermost layer is often flexible and colorless or brightly colored. The subtending hypha has a lighter wall than the spore wall and is frequently funnel-shaped at the base of the spore. The passage also mentions that both entrophosporoid and glomoid species produce mycorrhiza with arbuscules, vesicles, and intra- and extraradical hyphae that stain dark in Trypan blue. The type genus and type species are *Entrophospora* R.N. Ames and R.W. Schneid., emend. Błaszcz., Sánchez-García, Fernández, B.T. Goto, and Magurno. and *Entrophospora infrequens* (I.R. Hall) R.N. Ames and R.W. Schneid., emend. Błaszcz., Sánchez-García, Fernández, B.T. Goto, and Magurno., respectively. *Entrophospora infrequens* exhibits differences from other *Entrophospora* species that produce glomoid spores in terms of spore size and shape, physical and chemical characteristics of spore walls, and the genetic composition of the 45S nuc rDNA region and the rpb1 gene (Błaszczowski et al. 2022). In Spain, a glomoid morph was identified, and spores were obtained from a single-species culture that originated from a trap culture inoculated with a mix of rhizosphere soil and root fragments of *Limonium sinuatum* from the initial community (Błaszczowski et al. 2022). In Poland, an entrophosporoid morph was discovered, and spores were extracted from a single-species culture established from a trap culture inoculated with a blend of rhizosphere soil and root fragments of *Juniperus communis* from a pine forest in inland dunes. The phylogenomic analyses found that the *Entrophosporales* are closely related to a group of *Diversisporales* and *Glomeraceae*. The consistent entrophosporoid morphology of *E. infrequens*, which has been given a new epitype, was shown to be a group of hidden species capable of producing various glomoid morphologies (Błaszczowski et al. 2022).

### Reference

Błaszczowski J, Sánchez-García M, Niezgodą P, Zubek S et al. 2022 – A new order, *Entrophosporales*, and three new *Entrophospora* species in *Glomeromycota*. *Frontiers in Microbiology* 13, 962856.

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