Eupenicillium osmophilum sp. nov.

AMELIA C. STOLK AND JOHANNA W. VEENBAAS-RIJKS

Centraalbureau voor Schimmelcultures, Baarn, and
Instituut voor Plantenziektenkundig Onderzoek, Wageningen, the Netherlands


A new species of the genus Eupenicillium: E. osmophilum is described and illustrated. It is characterized by single asci, lenticular ascospores with 2 closely appressed equatorial ridges and divaricate penicilli.

INTRODUCTION

In the course of an investigation of arable soils near Wageningen a species of Eupenicillium was isolated. It proved to be sufficiently different from all described species of this genus (Scott, 1968; Udagawa 1968, 1969, 1972; Paden, 1971; Malloch and Cain, 1972) to warrant its description as a new species.

DESCRIPTION

Eupenicillium osmophilum Stolk et Veenbaas-Rijks, spec. nov.
Status conidialis: Penicillium osmophilum Stolk et Veenbaas, stat. nov.

Coloniae in agaro Czapekii tenuissimae, fere hyalinae; in agaro mali lente crescunt, stratum ascomatum avellaneorum formant; conidia paucia et inconspicua formatur; coloniae in agaro mali 40% saccharosi addito celerius crescunt, e strato brunneo ascomatum structuris conidialibus copiosis viridibus intermixtis constant.

Ascomata discreta, globosa, 100–200 μm diam, sclerotialia, post 8–10 hebdomades maturantia; asci octospori, singuli e ramis hypharum ascogenarum oriuntur, piriformes vel subglobosi vel ellipsoides, 7.5–10 × 6–7.5 μm. Ascosporae flaveae, lenticulares, duabus cristis aequatorialibus dense appropinquatis praeeditae, 3.7–4.5 × 2.5–3.2 μm (cristae 0.2–0.5 μm), partibus convexus verruculosus.

Conidiophora vel ascendentia sinuosa e hyphis submersis oriuntur, 70–400 (–600) × 2–4 μm, vel breviora e hyphis repentibus, levia vel fere levia, saepe nonnullos ramos sub penicillo ferentia. Penicilli biverticillati-divaricati, variabiles, nonnumquam monoverticillati. Rami 10–23 × 2–3 μm. Metulae 10–15 × 2–3 μm, sursum 3–4.5 μm crassae. Phialides 8.5–12 × 2–3 μm, parte basilari cylindrica abrupte in colunn conidiiferum, 1.5–2.5 × 1.7 μm angustata.
Conidia piriformia vel ellipsoidea, nonnumquam subglobosa, 3-4.2 × 2.2-3.5 μm, levia, columnas breves laxas formant.
Typus CBS 462.72, isolatus e terra agresti prope Wageningen.

Colonies on Czapek agar developing poorly, attaining a diameter of 3 cm within 2 weeks at 25 C, very thin, mainly consisting of submerged mycelium producing a few scattered conidial structures and abortive ascomata, nearly colourless.

Colonies on Czapek agar with 70% sucrose growing restrictedly, reaching a diameter of 1-1.5 cm within 2 weeks at 25 C, structure and colour as on Czapek agar, but producing penicilli more abundantly.

Colonies on malt agar growing slowly, attaining a diameter of 3.5 cm within 2 weeks at 25 C, consisting mainly of a plane, comparatively dense layer of ascomata, produced near the agar surface, embedded in and overgrown by a loose, colourless aerial network, when young narrowly zonate, at first white, but soon changing to brownish shades near Pinkish Buff and Cinnamon Buff, becoming Avellaneous in age (Ridgway, 1912, Pls 29, 40; Rayner 1970, 17"d, 17"b, 17'"b), usually somewhat raised and fluffy in the centre; margin regular. Conidial structures scanty, usually not affecting the colony appearance, occasionally absent. Exudate lacking. Odour musty. Reverse brownish near Light Pinkish Cinnamon and Cinnamon Buff (Ridgway, Pl. 29; Rayner 15"d, 17"b).

Colonies on malt with 40% sucrose growing more rapidly, attaining a diameter of 5 cm within 2 weeks at 25 C, consisting of a thin layer of ascomata, at first white, later becoming brownish, intermixed with conidial structures which may give the colonies a green appearance, ranging from Gnaphalium Green to Pea Green (Ridgway, Pl. 47; Rayner 29"d, 29"b).

Colonies on oatmeal agar similar to those on malt agar in rate of growth and cultural structure, but different in being consistently azonate, showing paler brown shades and producing a colourless exudate, which may collect in conspicuous, clear drops. Reverse pinkish, usually near Vinaceous Cinnamon and Buff-Pink (Ridgway, Pls 29, 28; Rayner 13"b, 11"d).

Colonies on hay infusion agar grow as on malt agar, but ascomata are often white, because of enveloping white mycelium; occasionally showing greenish shades from conidial production.

All strains examined have a strong tendency to produce sterile sectors consisting of a white, occasionally pinkish, floccose mycelium; rarely conidial sectors occur.

Vegetative hyphae hyaline, septate, 2-4.5 μm in diameter. Ascomata on malt agar discrete, avellaneous, globose or nearly so, 100-200 μm in diameter, usually surrounded by a thin envelope of hyaline hyphae, sclerotoid, at first hard and gritty, consisting of thick-walled, polygonal cells, ripening very slowly from