

## OOMYCETES FROM SOIL OF BAJOUR AGENCY, FATA, PAKISTAN

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Although comprehensive lists of saprophytic and plant parasitic fungi from Pakistan are available, the Oomycetes are among the less studied group of fungi where 8 genera comprising of 35 species have been recorded from Pakistan (Ahmad, 1956; Mirza & Qureshi, 1978; Shahzad & Ghaffar, 1993, 1995; Majid *et al.*, 1922a,b; Saleem *et al.*, 1991, 1992; Saleem & Ansar, 1989). The present report describes the Oomycetes isolated from soil of Bajour Agency, FATA, Pakistan.

Soil samples were collected at random from a depth of 0-5 inches from the bank of a stream, cultivated soil, uncultivated soil and the root zone of *Pinus* sp., from Bajour Agency. Samples from a field were mixed to obtain a composite sample and Oomycetous fungi were isolated using sterilized hemp seed and blades of a grass (*Digetaria* sp.) as baits (Harvey, 1925). Grass blades fried in hydrogenated vegetable oil before autoclaving were also used. Cultures of Oomycetes were maintained on corn meal agar (CMA) whereas daily growth rate was determined on potato-carrot agar (PCA). The isolated organisms were identified after reference to Sparrow (1960), Plaats-Niterink (1981) and Dick (1990).

A total number of 9 species viz., *Brevilegnia* sp., *Pythium aphanidermatum* (Edson) Fitzp., *P. aquatile* Höhnk, *P. lutarium* Ali-Shtayeh, *P. middletonii* Sparrow, *P. periplocum* Drechsler, *P. spinosum* Sawada, *Pythium* group HS and an unidentified *Pythium* sp., were isolated. Of these *Brevilegnia* sp., *Pythium aquatile*, *P. lutarium*, *P. middletonii*, *P. spinosum* and *Pythium* group HS do not appear to have been recorded from Pakistan.

*Pythium aphanidermatum* is characterized by straight oogonial stalks whereas antheridial stalks curve towards the oogonium (Plaats-Niterink, 1981). It is interesting to note that the colonies of *P. aphanidermatum* isolated during the present study also showed presence of oogonial stalks which curve towards antheridia.

Yamamoto & Maeda (1961) considered *P. artotrogus* var. *macracanthum* Sideris as a synonym of *P. spinosum*. However, according to the description, the oogonia, oospores and spines are larger than those in *P. spinosum*. The identity of this isolate was considered to be doubtful by Plaats-Niterink (1981). During the present study several oogonia showing characters of *P. spinosum* but being greater in diameter (upto 48  $\mu$ m) with upto 18  $\mu$ m long spines were also observed in the culture of *P. spinosum*. It is not clear whether these oogonia belong to *P. spinosum* or any other contaminant.

During the studies, use of grass blades fried in hydrogenated vegetable oil was found more suitable in inducing rapid mycelial growth as well as sporangia, oogonia and oospore production than the non-fried grass blades.

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