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COLONIZATION OF DEAD NEEDLES OF QUETTA PINE (*PINUS HALEPENSIS* L.) BY AQUATIC HYPHOMYCETES

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Ingold (1966) reported that aquatic hyphomycetes were unable to colonize conifer needles. Since then, no report has been published on colonization of pine needles by aquatic hyphomycetes. An experiment was, therefore, carried out to see the colonization of dead needles of Quetta pine (*Pinus halepensis* L.) by aquatic hyphomycetes in water stream near the fish house of Urak, Quetta. The stream in this area has a width of 1-2 meters, maximum depth 25-30 cm, average water temperature around 19°C, average pH 7.5 and approximate conductivity 0.9 mm/cm.

Dead needles of a light yellow brown colour collected from a single Quetta pine tree were rinsed for 24 h in running tap water at 12°C and then air dried for five days at room temperature. The two ends of the needles were cut so that the remaining mid part was 4-7 cm long. A set of needles was boiled separately either in distilled water (2 h), 95% ethanol (2 h) or 0.01% NaOH (1 h). Untreated needles served as control.

Table 1. Fungi isolated from Quetta pine needles after 35 days exposure in running tap water.

Fungal species	Control	Distilled water	Ethanol (95%)	NaOH (0.1%)
Alatospora acuminata	+	+	+	+
Anguillospora longissima	-	+	+	+
Articulospora tetracladia	-	+	+	-
Clavariopsis aquatica	-	+	+	-
Flagellospora curvula	-	+	+	+
Heliscus lugdensis	+	+	+	-
Lomonniera aquatica	+	+	-	-
Tricladium angulatum	+	+	+	+
Tetracladium marchialum	-	+	-	-
Total number of species	4	9	7	4

- = Absent, + = Present.

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The treated and untreated needles were then rinsed four times in distilled water and air dried for 5 days. A total of 40 bundles of needles (200 mg of needles per bundle) were prepared for each treatment where each bundle was tied with nylon thread and identified with an attached Rotex label. These bundles were equally distributed in 4 nylon bags which were placed in the cavities of four large containers opened at both ends. The two ends of each container were then covered with wire mesh. These containers were placed in the water-course at 4 different places with approximately similar water level and velocities. After 35 days, the containers were recovered and brought back to the lab., and fungi colonizing the needles were identified.

Of a total of 9 species of aquatic hyphomycetes isolated (Table 1), the highest number of species (9) were isolated in treatment where needles were boiled in distilled water followed by ethanol (7), NaOH (4) and control (4). It would appear that boiling in distilled water or ethanol would have removed some antifungal compounds from the needles which resulted in greater colonization of needles by aquatic hyphomycetes.

Reference

Ingold, C.T. 1966. The tetracladiate aquatic fungal spores. *Mycologia*, 58: 43-56.

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