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# A Note on Comparative Growth of Five Species of Pleurotus Under Different Temperature, Light and Humidity Conditions

**P. P. Rawal* and R. D. Singh**

Department of Plant Pathology, Rajasthan College of Agriculture, University of Udaipur, Udaipur

In view of species of *Pleurotus* holding good promise for their cultiavtion under Indian conditions, the efforts were made to study comparative growth of five species of *Pleaurotus* viz. *P. eryngi*, *P. florida*, *P. ostreatus P. sajor-caju* and *P. sapidus* under different temperature, light and humidity conditions.

To know the effect of temperature on the growth, an experiment was conducted using Dimmick's solution as basel medium. The flasks after sterilization and inoculation in an usual manner were incubated for 15 days at 10, 15, 20, 25, 30, 35 and 40° C constant temperatures. The average dry mycelial mat harvest was used for comparing the growth.

To see the effect of light on the radial growth of *Pleurotus* spp. the inoculated Petriplates containing 20 ml yeastal PDA were exposed to (1) 100 ft.C./sq.ft. light provided by a 60 watt gas filled bulb having tungston filament at a distance of 24 cm and (2) no light by wrapping with a black paper sheet to provide continuous complete darkness to the cultures. These were incubated at 25° C for 12 days. The radial growth of *Pleurotus* spp. was measured at the end.

To know the effect of different levels of humidity on the growth, inoculated Petriplates containing 20 ml yeastal PDA were kept at 20, 40, 60, 80 and 100 Per cent levels of humidity. The humdity levels were maintained by using concentrated sulphuric acid and distilled water in different proportions (ASTM, 1958).

The joints of the plates were sealed by a cellophane tape so as to avoid possible evaporation of the solution. The radial growth after 15 days of incubation was measured and compared.

It was revealed that all the species of *Pleaurotus* under study grow within a range of 15 to 35° C temperature. However, 35° C was more inhibitory than the former. At 25° C temperature *P. eryngii*, *P. ostreatus* and *P. sajor-caju* recorded the highest dry mycelial harvest, whereas, for *P. florida* and *P.sapidus* 30° C temperature was the optimum. None of the species could grow at 10 and 40° C. The finidings are in agreement with what was reported by Block *et al.* (1959), Zadrazil (1974) and Rangad and Jandaik (1977). The more inhibitory effect of 35° C can be accounted for the adverse effect of high temperature on the enzymatic activities of the fungus (Lilly and Barnett, 1951).

Under total darkness, the growth was significantly more in case of *P. eryngii*, *P. florida*, *P. ostreatus* and *P. sajor-caju* as compared to 24 hr light treatment. In case of *P. sapidus*, the effect of light was insignificant. Wolf and Wolf (1947) reported number of slime moulds, hypho-

*Present address: Training Associate (Pl.(Prot.) T & V Scheme, GAU, Junagadh-362 001.

mycetes, pyrenomycetes and besidiomycetes which can grow in absence of light.

Twenty per cent humidity caused the least growth, whereas, 100 per cent was found to support maximum growth in all the species. Positive correlation was observed to be existing between the growth of *Pleurotus* spp. and the increased levels of humidity. Similar observations have also been recorded by Jandaik (1976).

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