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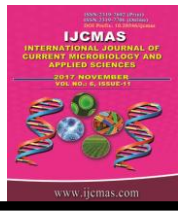

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Impact of Varying Light Duration on Radial Growth of Pink Oyster Mushroom

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A B S T R A C T

Light is an important factor deciding about yielding and morphological characters of *Pleurotus* carpophores. The objective of the research was to ascertain the impact of different light periods on radial growth of *Pleurotus djamor*, the pink oyster. The culture of *P.djamor* in petri plates were exposed to varying light period viz.6h light 18h darkness,9h light 15h darkness,12h light 12h darkness,18h light 6h darkness,15h light 9h darkness,24h light 0h darkness, respectively. Maximum growth of 75.33mm was recorded in 6h light and 18h darkness and it was significantly higher than the 18h light and 9h exposure to the light.

Introduction

Mushrooms have been cultivated since ancient times for their nutritional value and flavor especially in the far eastern countries. The protein found in mushroom is far less than in animals but much more than in most plants. They have low fat content, high fibre and all essential amino acids and with the exception of iron, contain all important minerals too (Sadler, 2003).

Pleurotus spp. are commonly known as oyster mushroom because of their tongue shaped pileus with an eccentric lateral stipe. Many species of *Pleurotus* have worldwide distribution in nature which grows saprophytically on dead wood logs and trunk of trees. They have a wide range of ecological adoption and also have the ability to transform natural wastes into edible biomass. Yields of mushrooms from the *Pleurotus* genus depend on many factors; apart from genetic properties, environmental factors also play a significant role in this regard (Lalley, 1991; Shah *et al.*, 2004). The mycelium of the mushrooms from the *Pleurotus* genus does not require light for its growth (Sharma, 2004). Nevertheless, light is necessary for the proper development of carpophores (Royse and Zaki, 1991). Trukhonovets (1991) maintains that during the period of carpophores development and growth, light is an important factor deciding about the yielding and morphological characters of fruiting bodies.

Materials and Methods

The experiment was conducted at the Mushroom Research Laboratory, Department of Plant Pathology, Dr. Y.S. Parmar university of Horticulture and Forestry during 2012-13. The culture of *Pleurotus djamor* was obtained from Directorate of Mushroom Research, Chambaghat, Solan and maintained on potato dextrose agar (PDA) slants. The plates containing 20ml of PDA medium were inoculated with 3mm discs of *P. djamor* obtained from 7 days actively growing culture. The plates were incubated at 25±1^{o}C in growth chamber and were provided with light for different duration.

Results and Discussion

Light, along with other external factors, exerts a significant impact on the growth and development processes of carpophores of mushrooms from the *Pleurotus* genus.

It acts as a signal triggering off various biophysical and biochemical processes ultimately leading to morphological and phototrophic reactions (Trukhonovets, 1991).

To find out the optimum light period for mycelial growth of *P. djamor*, the fungus was exposed to varying light periods of 6h, 9h, 12h, 15h, 18h and 24h.

The data presented in Table 1 shows that maximum growth of 75.33 mm was recorded in 6h light and 18h darkness and it was significantly higher than the 18h light and 6h exposure to the light. The lowest radial growth of 30.5 mm was recorded, when the light and darkness duration was same (Figure 1).

Table.1 Effect of different light periods on radial growth of *Pleurotus djamor*

Treatments	Radial growth (mm)*
6h light 18h darkness	75.33
9h light 15h darkness	42.83
15h light 9h darkness	34.00
18h light 6h darkness	66.30
24h light 0h darkness	35.00
12h darkness 12h light	30.50
Mean	47.32
C.D	18.967
S.E	8.70

*Average radial growth (mm) after 8 days of incubation

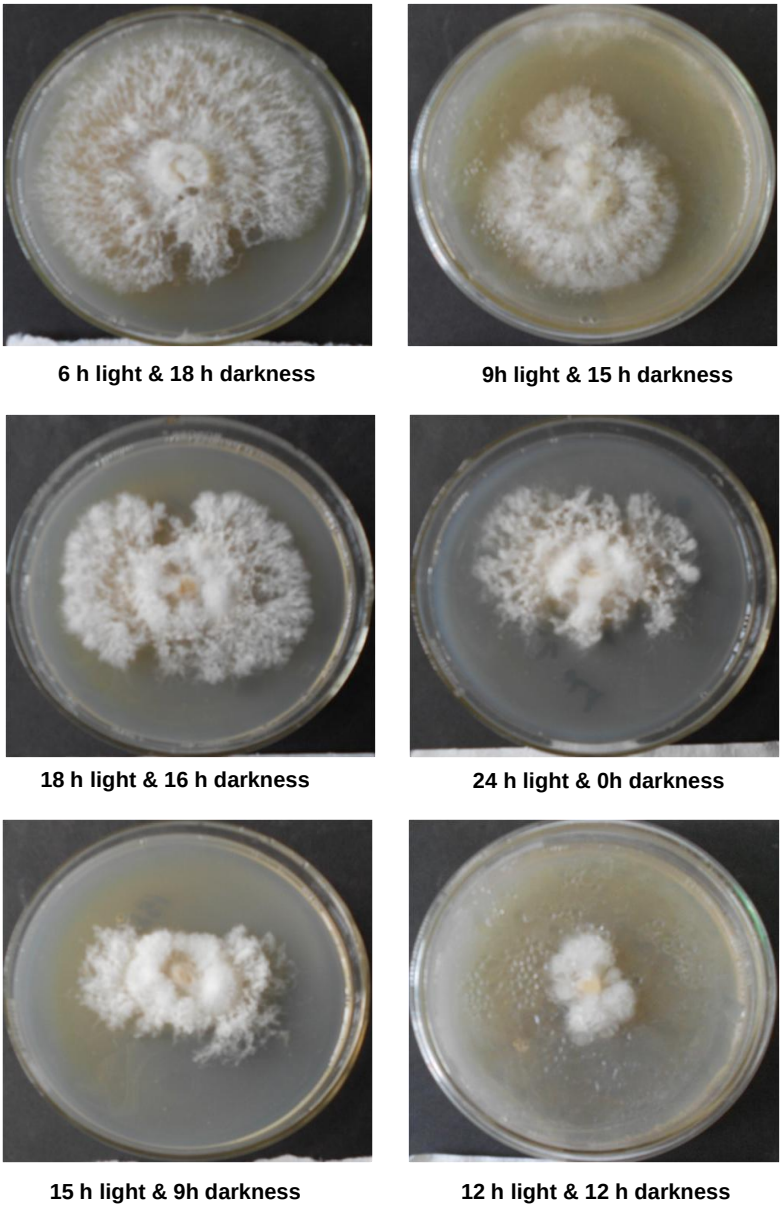

Figure 1. Effect of light on radial growth of *Pleurotus djamor*

Similar results have been reported by Suharban and Nair (1994) for *Pleurotus* spp. and Sharma (2004) for *P. djamor*. Sagar *et al.,* (1994) also reported that the mycelial growth of *Suillus sibiricus* was inhibited in the presence of light. Although light is not essential for the vegetative growth, however, various workers have reported it to be essential for the formation and maturation of reproductive structures of wood rotting fungi (Eger, 1978).

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