231/B

Studies on substrate and optimum conditions for the spawn production of four *Pleurotus* species

K L Wasantha Kumara
Department of Agricultural Biology, Faculty of Agriculture, University of Ruhuna

Undesirable characters such as slow mycelial growth, high stickiness, low scattering ability and difficulty in fruiting bags inoculation, of paddy based spawns stimulated researchers to look for alternative substrates for spawn production. This experiment was conducted to study alternative spawn substrates and optimal conditions for spawn production of four Pleurotus species *viz.* American Oyster (*Pleurotus ostriatus*), Lanka Oyster (*Pleurotus* spp), Abalone (*P. cystidiosus*) and Pink Oyster (*Pleurotus* spp). Paddy, Finger millet (*Eleucine coracana*) and bajiri (*Seteria italica*) were used as spawn media, alone or mixed with each other at 1:1 (w/w) ratio. Observations were recorded as percentage of medium colonization by the fungus and the number of days taken to cover the spawn medium completely (100% colonization).

Results showed that when 100% finger millet was used as the spawn substrate, tested mushroom species reached 100% colonization in a significantly less number of days and therefore, was selected for the second experiment to study optimal conditions of temperature, pH and light intensity requirements of four mushroom species during spawn production. The $CaCO_3$ mixed with finger millet medium at 0.5%, 0.75% and 1.0% was found to be suitable for spawn production of the four *Pleurotus* spp. The temperatures of 28 ^{0}C and room temperature (average = 30 ^{0}C) supported faster growth at spawn production, while completely dark conditions provided 100% colonization in a fewer number of days. These conditions can be recommended when spawns of the four mushroom species are produced using finger millet as a substrate.