

INCIDENCE AND SEVERITY OF CONTAMINATION OF SUBSTRATES OF MAPLE OYSTER MUSHROOM (*Pleurotus cystidiosus*) AND MANAGEMENT THROUGH CHEMICALS AND BOTANICALS

Khadija Akhter*

Executive Summary

An experiment was conducted at the Plant Pathology laboratory and Mushroom Culture House (MCH) in the Department of Plant pathology, Sher-e-Bangla Agricultural University (SAU), during October, 2021 to April 2022, to investigate the prevalence of microorganisms on mushroom substrates and the efficiency of chemicals and botanicals on contaminations, growth and yield of maple oyster mushroom. The experiment was consisted of single factor and followed Completely Randomized Design (CRD). Sugarcane bagasse was treated with different botanicals and fungicides *viz*: Sulcox 50 WP (Copper oxychloride), Indofil M45 (Mancozeb), Mancor 75WP (12% Carbendazim+ 63% Mancozeb), 3% Hydrogen Peroxide, Lantana (*Lantana camara*) and Nimbecidine with autoclaving. Different application along with sugarcane bagasse showed significant variations in respect of all characters of mushroom. Severity of contamination was varied from 4-66%, while during the 3rd harvest, 66%, 4% and 12% contamination was observed in control, Sulcox-50WP and Indofil M-45, respectively. No severity of contamination was found when the substrate was supplemented with botanicals after autoclaving. The highest growth rate (0.45 cm/day), the maximum number of primordia /packet (82.4), the maximum number of effective fruiting bodies /packet ((42.2), biological yield (157.04 g), economic yield (125.0 g) were recorded from Copper oxychloride treated packet, while the lowest performance was obtained from control in all cases. *Trichoderma harzianum* and *Aspergillus niger* were isolated and identified from contaminated spawns. Under *In-vitro* evaluation of chemicals, maximum inhibition of *Trichoderma harzianum* (68.76%) and *Aspergillus niger* (91.28%) were recorded from 3% hydrogen peroxide treated plate. In case of botanicals, *Aspergillus niger* (41.96%) and *Trichoderma* (30.67%) were inhibited by Lantana, while, *Trichoderma* (27.7%) and *Aspergillus niger* (26.16%) was inhibited by Nimbecidin. The economic yield of oyster mushroom was correlated positively with number of fruiting bodies and the biological efficiency. It may be revealed that supplementation with botanicals after autoclaving is the best option to mitigate the substrate contamination of maple oyster mushroom.

*Professor, Dept. of Plant Pathology, Sher-e-Bangla Agricultural University, Dhaka, Bangladesh