

Research Article

Impact of Compost and Casing on Yield Attributes of *Agaricus bisporus*

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Abstract

A study conducted across 33 blocks in seven districts in Jharkhand highlighted the predominance of oyster mushroom cultivation, underscoring the untapped potential of white button (*Agaricus bisporus*) mushroom. Among various *A. bisporus* cultures, culture S 79, grown on malt extract agar, exhibited vigorous growth, a fluffy texture and rapid colony initiation - within just 2.26 days. Substrate enrichment experiments revealed that a mixture of 25 per cent compost and 75 per cent poultry manure yielded mushrooms with longer stipes (13.96 cm), larger pilei (12.90 cm), and heavier sporophores (109.54 g). This combination achieved a yield of 1,746.63 g per bed and a biological efficiency of 105.49 per cent. Additionally, integrating vermicompost at a ratio of 8.0 kg compost to 2.0 kg vermicompost further enhanced yields to 1,796.48 g per bed, with a biological efficiency of 115.09 per cent. Casing materials also played a crucial role; a 3:2 ratio of cocopeat to vermicompost at a 1.0 cm thickness produced a yield of 1,540.71 g and a biological efficiency of 105.46 per cent. Overall, the study concluded that the optimal combinations of compost, vermicompost, and casing parameters significantly enhanced the yield and quality of *A. bisporus*. These findings highlight the substantial potential for white button mushroom cultivation in Jharkhand, offering farmers a lucrative opportunity to diversify their agricultural practices and improve their livelihoods.

Key words: *Agaricus bisporus*, cocopeat, compost, mushroom, poultry manure, vermicompost

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