

DEVELOPMENT OF CASING MATERIALS USED IN WHITE BUTTON MUSHROOM CULTIVATION BY COMPOSTING OF SPENT MUSHROOM COMPOST

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A critical component for efficient and cost-effective cultivation of champignon mushrooms (*Agaricus bisporus*) is the development of a superior casing layer. This layer, applied over mushroom compost infused with mycelium, is essential for fruiting body development and compensates for the compost's low water retention capacity. Due to decreasing peat availability in Hungary and Europe and environmental concerns about peat extraction, alternative casing materials are increasingly explored. However, the transition is slow, given the cost-effectiveness and availability of peat-based casings. But now more than ever, creative solutions are required. Our research focuses on creating a casing layer with enhanced water retention, tailored for white button mushroom cultivation. This goal is achieved through the controlled microbial re-composting of spent mushroom compost. We first evaluated physical, chemical, and microbiological transformations during the natural re-composting process. Subsequently, we established a comprehensive monitoring technique to observe dynamic changes in the chemical, analytical, and microbiological parameters of both raw materials and the final casing products.

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