PRODUCTION OF WHITE BUTTON MUSHROOM (*AGARICUS BISPORUS*) COMPOST USING DIFFERENT BASE MATERIALS

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The cultivated mushroom *Agaricus bisporus* remains a predominant choice in Europe's mushroom consumption, with industrial-scale production relying on mushroom compost, a substrate crafted through controlled chemical and microbiological processes. Essential components include horse manure, wheat straw, chicken manure, gypsum, and water, with regional variations in base mixture composition. Our study investigates the effect of alternative straw types as substitutes for wheat straw in the composting process. We examine compost chemical properties, vegetative mushroom mycelium growth, and identify alternative materials for large-scale white button mushroom production. Experimental materials included baled corn stalks (at 15% alongside wheat straw), rye straw (as a full replacement), and rapeseed straw (at 30% and 50% alongside wheat straw). Results show that corn stalks may pose infection risks due to tube residues, while a 50% ratio of rapeseed straw is not ideal due to rapid structural degradation. An optimal ratio of 10-20% rapeseed straw enhances compost moisture without excessive fragmentation. Rye straw can fully replace wheat straw but requires proper preparation, including longer pre-moistening cycles and mechanical processing for ideal volumetric weight. Additional benefits of rye straw utilization include higher straw yields per hectare and its traditional use in mushroom spawn production, potentially supporting domestic spawn production plants.
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