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**Selection of a Culture Medium for Reducing Costs and Enhancing Biomass and Intracellular Polysaccharide Production by *Agaricus blazei* AB2003**

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**Summary**

A practical medium for reducing costs and enhancing both biomass and intracellular polysaccharide (IPS) production by a newly screened *Agaricus blazei* AB2003 has been selected. The results show that IPS production was growth-associated, that a combination of corn flour extract and glucose was the best carbon source, and that a combination of wheat bran extract and yeast extract was the best nitrogen source for both biomass and IPS production. The effects of the four factors were further investigated using four-factor, three-level orthogonal test design. The best combination for the production of biomass and IPS was (in g/L): corn flour extract 15, glucose 6, yeast extract 3, and wheat bran extract 6. The maximum biomass and IPS in a 30-litre stirred tank bioreactor reached 11.30 and 0.72 g/L in the optimized medium, respectively. The use of two low-cost raw materials like corn flour and wheat bran extract as the major medium constituents could reduce the costs of biomass and IPS production.

*Key words:* *Agaricus blazei*, intracellular polysaccharide, mycelial growth, medium selection, submerged fermentation

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