

Role of Carrier Agent in Spray Drying Method for Stickiness Prevention and Suitability in *Pleurotus pulmonarius* Liquid Spawn Application: A Review

Abstract

Spray drying (SD) is one of important technique mostly applied in the food industry and pharmaceuticals sector. However, an issue of stickiness during operation resulted in deposition of materials on the dryer surface that decreased product quality, frequent plant shutdowns, increased cleaning requirements, and safety hazards. Besides, application of spray drying in mushroom liquid cultures is limited hence requires further review. Low molecular weight sugars and organic acids with a low glass transition temperature are factors responsible for the sticky behavior. The common solution for this problem is by adding high molecular weight drying aids to raise the feed mixture's glass transition temperature (T_g). Among drying aids, maltodextrin was found the most effective polymer with high T_g for helping the stickiness problem.