

Physicochemical properties of modified cassava starch prepared by application of mixed microbial starter

Abstract

Modified cassava starch (MCS) is a product derived from cassava chips that uses a principle of modifying cassava chips in fermentation, which produces distinctive characteristics, so it can be used as a food ingredient with a very wide scale. Preliminary experimental results showed that MCS could be used as raw materials from a variety of foods, ranging from noodles, bakery, cookies and semi-moist food, since the application has a spectrum similar to wheat flour, rice and other starchy materials. Advantages of MCS have aroma and flavor better than regular cassava flour, white has more color than usual cassava flour, and has relatively low prices compared to wheat or rice flour. The purpose of this study was to examine the influence of starter solution on physicochemical properties and rheology of MCS, those were swelling power, solubility and product texture. Cassava chips soaked in an enzymatic starter solution for 24-72 hours at a concentration of 2.0% (v/v). Cassava chips were dried, then ground and analyzed for physicochemical properties and their rheologies. The results showed that, soaking in 2.0% starter solution for 72 hours, resulting in swelling power and solubility at highest value, respectively 12.00 (w/w) and 10.5%. For comparison, the value of swelling power and solubility of wheat flour, respectively 10.0 (w/w) and 9.6%. However, a native cassava starch, only produced swelling power and its solubility level, respectively 7.5 (w/w) and 8.5%. MCS has been no longer developed and its applications in food industry might have a significant prospect in the future. Review on journal's papers of current decade has been done so as to observe the latest applications of MCS in the food industry. Hopefully this paper will assist anyone especially students who want to get information about the latest applications of MCS in the food industry. This paper will elaborate more about the definition of MCS by considering modification technique through fermentation and enzymatic treatment.