ABSTRACT

THE CHARACTERISTICS OF WHITE SWEET POTATO
(Ipomea batatas L.) FLOUR PERMENTED WITH Lactobacillus plantarum,
Leuconostoc mesenteroides IN DIFFERENT FERMENTATION TIME, FOR
RAW MATERIAL OF NOODLE

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The aims of this study were to get (1) the characteristics of white sweet potato flour fermented with Lactobacillus plantarum, Leuconostoc mesenteroides in different fermentation time and their trend (2) combination of both and fermentation time to produce the best characteristics of white sweet potato fermented flour as raw material for noodle. The treatments were arranged in a Complete Randomized Block Design (CBRD) with two factors and three replications. The first factor consisted of Lactobacillus plantarum (Lp) and Leuconostoc mesenteroides (Lm). The second factor was fermentation time with five levels: 0 hour (H_0), 24 hours (H_24), 48 hours (H_48), 72 hours (H_72) and 96 hours (H_96). Data was further analyzed by using orthogonal polynomial comparison at level 1% and 5%. The results of this study showed that fermentation time decreased pH with linear trend, solubility and percentage of transmittance with quadratic trend (optimum point of solubility in Lactobacillus plantarum 68.56 hours and in Leuconostoc mesenteroides 64.56 hours; transmittance percentage in Lactobacillus plantarum 66.4 hours and in
Leuconostoc mesenteroides 87.0 hours), increased organoleptic flour score (colour and flavour) with linier trend, swelling power and unbroken noodle percentage with quadratic trend (optimum point of swelling power in Lactobacillus plantarum 56.80 hours and in Leuconostoc mesenteroides 69.42 hours; unbroken noodle percentage in Lactobacillus plantarum 70.1 hours and in Leuconostoc mesenteroides 66.0 hours). The best treatment was reached in 72 hours fermentation either in Lactobacillus plantarum or Leuconostoc mesenteroides flour. Lactobacillus plantarum flour with 72 hours fermentation had characteristics: pH value 4.16; swelling power 19.06%; solubility 6.40%; percentage of transmittance 3.38%; colour score 3.73 (white); flavour score 3.05 (neutral) and unbroken noodle percentage 95.1%, whereas, those in Leuconostoc mesenteroides flour with 72 hours fermentation had characteristics: pH value 4.14; swelling power 19.56%; solubility 7.10%; percentage of transmittance 2.60%; colour score 3.73 (white); flavour score 2.88 (neutral) and unbroken noodle percentage 96.10%. The average of optimum point in this study was 75.60 hours in Lactobacillus plantarum and 79.83 hours in Leuconostoc mesenteroides.

Keywords: Characteristic of flour, fermentation time, noodle, fermented white sweet potato flour, starter