

ABSTRACT

THE EFFECT OF A MIXED STARTER OF LACTIC ACID BACTERIA-YEAST AND FERMENTATION TIME ON CHARACTERISTICS OF WHITE SWEET POTATO (*Ipomea batatas L.*) FLOUR AS RAW MATERIAL FOR NOODLE

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The aims of this study were to find out (1) the characteristics of white sweet potato flour fermented in different mixed starters and their trend, (2) the characteristics of white sweet potato flour fermented in different fermentation time and their trend, (3) combination between mixed starter and fermentation time to produce the best characteristics of white sweet potato as raw material for noodle. This study was arranged in complete randomized block design method (CBRD) with two factors and three replications. First factor consisted of a mixed starter of *Lactobacillus plantarum*, *Leuconostoc mesenteroides* (LpLm) and a mixed starter of *Lactobacillus plantarum*, *Leuconostoc mesenteroides*, *Saccharomyces cerevisiae* (LpLmSc). Second factor was fermentation time with five levels: 0 hour (H₀), 24 hours (H₂₄), 48 hours (H₄₈), 72 hours (H₇₂) and 96 hours (H₉₆). Data was further analyzed by using orthogonal polynomial comparison at level 1% and 5%. The results of this study showed that there were no significant different characteristics in LpLm and LpLmSc white sweet potato flour except that in solubility. Fermentation time decreased pH, solubility and

percentage of transmittance with quadratic trend (optimum point of pH in LpLm 81.5 hours and in LpLmSc 81 hours; solubility in LpLm 60.64 hours and in LpLmSc 52.43 hours; percentage of transmittance in LpLm 62.96 hours and in LpLmSc 79.75 hours), increased swelling power with quadratic trend (optimum point in LpLm 55.57 hours and in LpLmSc 110.25 hours) and increased organoleptic flour score (colour and flavour), unbroken noodle percentage with linear trend. The best treatment was reached in 72 hours fermentation either in LpLm or LpLmSc flour. LpLm flour with 72 hours fermentation had characteristics: pH value 4.15; swelling power 19.80%; solubility 6.83%; percentage of transmittance 3.40%-6.47%; colour score 3.70 (white); flavour score 2.80 (neutral) and unbroken noodle percentage 94.10%, whereas, those in LpLmSc flour with 72 hours fermentation had pH value 4.27; swelling power 19.74%; solubility 6.57%; percentage of transmittance 3.00-5.33%; colour score 3.90 (white); flavour score 2.90 (neutral) and unbroken noodle percentage 93.10%.

Key words: Fermented white sweet potato flour, mixed starter, fermentation time, characteristics of flour, noodle