

Study on Palmyrah Toddy Sediments as a Leavening Agent for Bakery Products

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Palmyrah toddy is a unique palm product that generates more income for Palmyrah dependents. Yeast sediments can be observed in bottled toddy production and most of the time they are discarded during the process. The main objective of this study is to convert these fresh sediments into a leavening agent suitable for domestic bakery production. Pooled Palmyrah toddy obtained from palm development corporative societies was used for the isolation of yeast. Among the 13 isolated yeast strains best yeast were selected based on the Leavening Index (LI) as commercial yeast (IY), mixed yeast (MY) and isolated yeast (N10) were selected and showed LI value of 1.3, 1.2 and 1.2 respectively. Killer toxicity was tested with peptone dextrose methylene blue agar plate and no toxicity was observed. Mixed yeast culture was showed growth at 45°C, pH 5 to 6, and tolerance to alcohol (5-10%) and salt (4-8%). Medium optimization was done by using general full factorial design and the best treatment having yeast extract (2 g/l), peptone (1 g/l), and glucose (1 g/l) was selected and it showed 0.857 optical density at 5th day of fermentation. Yeast was dried at different treatments such as sundry, shade dry, and oven-dry at 50, 55, and 60°C. The best treatment (55°C) showed the corresponding LI, dry weight (g/100 ml) and viability (%) were 18.45(±0.46), 1.6, and 98.85(± 0.85) respectively. Wheat flour was selected for the bun preparation based on the LI (1.4), bun prepared by using MY, IY and N10 showed significant (p<0.05) difference in sensory characteristics, while there was no significant difference in nutritional characteristics as a percentage of moisture (6.7), fat (3.8), protein (0.9), ash (1.1) and total sugar (73.2) of the bun with MY and IY. Therefore, yeast obtained from the palmyrah toddy sediment could be used as a leavening agent in bakery products.

Keywords: Palmyrah toddy sediment, yeast, leavening agent, bun