**COMPARATIVE STUDY OF SINGLE CELL PROTEIN PRODUCTION WITH BAKER’S YEAST AND MIXED CULTURE OF TODDY FROM PAPAW FRUIT JUICE**

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**ABSTRACT**

The need of protein containing quality food has become an unavoidable requirement for the survival of human population in future. This study was aimed to test the efficiency of baker’s yeast and mixed culture of toddy to produce Single Cell Protein (SCP) from papaw *(Carica papaya,* variety – “Red lady”) fruit juice in the Liquid State Fermentation (LSF). The LSF experiments were performed in a shaking incubator (100 rpm) with fermentation media composed of Glucose 10g/L.MgSO4 0.5g/L, NaCl 0.1g/L, CaCl2 0.1g/L and KH2PO4 1g/L as control medium inoculated with 5 mL Palmyrah toddy and 0.2g of baker’s yeast. Glucose of the papaw medium was replaced by 100 ml/L (10%) of papaw fruit juice. Culture growing conditions of the fermentation process such as time (3 days) and temperature (30 oC) were optimized, the crude protein production was 40.36 % with baker’s yeast and 42.75% with Palmyrah toddy mix. When the carbon source was replaced with 5% papaw fruit juice, the crude protein was increased to 41.8% from 40.36% (1.04 times) with baker’s yeast and the crude protein was increased to 43.12% from 42.75% (1.01 times) with toddy mix. This comparative fermentation study with baker’s yeast and Palmyrah toddy mix revealed that Palmyrah toddy mix generates significantly higher protein content (p<0.05) than that of baker’s yeast. Since cheap, naturally available, less labour and machinery involved Palmyrah toddy mix yielded higher SCP than the expensive and processed baker’s yeast in the papaw juice added fermentation medium, Palmyrah toddy mix could be recommended for the preliminary level research studies of our country.

**Key words**: Baker’s yeast, papaw fruit juice, Palmyrah toddy mix, Single Cell Protein

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