D-11 Characteristics of two yeast strains suitable for single cell protein production, isolated from *Caryota urens* (kithul) toddy

M A N Jayathilake, S C Wijeyaratne
(*Dept. of Botany, Univ. of Sri Jayewardenepura, Nugegoda*)

Two strains of yeast were selected from naturally fermenting *Caryota urens* (Kithul palm) phloem sap for the production of protein biomass. Characteristics of these yeasts were examined to determine their suitability for single cell protein production. These 2 strains, S5 M-15 and S8 M-15, which were identified as species of *Candida* had high crude protein contents (more than 55% by dry weight) and gave higher growth rates in a synthetic medium (about 2 x 10^6 cells/ml/h). Two strains showed relatively good growth in molasses medium and produced about 4 g cell dry weight/100 ml of molasses. Their optimum growth temperature was around 35°C. The moisture content was in the range of 6.5 - 7.3 %, while the ash content was around 7 % on dry weight basis.

Amino acid composition of the strains was determined using the HPLC method (Pico-Tag). Results showed that S8 M-15 consisted of 82% of essential amino acids, while strain S5 M-15 consisted of 70% essential amino acids from the total amino acid content of each of the strains. Thiamine and riboflavin contents were analysed by HPLC method (Hagg). Two strains contained about 0.2 mg riboflavin and 0.1 mg thiamine per 1.00 g of dried cells. These results suggest that strains S8 M-15 and S5 M-15 which could be grown more efficiently using molasses, at a moderate temperature, are promising for single cell protein. It is suggested that this protein be used in animal feeds.