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COMPARATIVE STUDIES OF YEASTS ISOLATED FROM FERMENTED SAPS
OF PALMS IN CEYLON

by

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A B S T R A C T

The three types of yeast strains isolated from fermented saps of Coconut, Kithul and Palmyrah belongs to Genera Torulopsis. These have been designated as Cy, Ky and Py for Coconut, Kithul and Palmyrah respectively. Cy, Ky and Py were able to use glucose, raffinose, sucrose, fructose and galactose as sole source of carbon. They yielded alcohol, as estimated by the Micro-diffusion technique (Conway, 1952). These three strains did not grow in maltose and lactose, hence did not produce alcohol. Py grew in 2% (v/v) alcohol, while Cy and Ky did not produce any growth.

The minimum concentration of glucose necessary to obtain maximum growth of Cy and Py in 72 hours were 2% (w/v), while with Ky it was 1.50% (w/v). Experiments with the vitamin requirements indicated that for maximum growth under these conditions biotin and thiamine were essential.

Cy, Ky and Py were found to grow in ~~all~~ of the eighteen amino acids tested as sole source of nitrogen. They assimilated D - isomer of alanine under aerobic conditions and L - isomer of alanine under anaerobic conditions. Of the possible pathways of nitrogen assimilation investigations have been carried out only in deamination and transamination mechanisms. For this purpose, experiments were carried out with cell-free extracts of Cy, Ky and Py. D - amino acid oxidase activity in the extracts was demonstrated by the formation of keto-acids from the corresponding amino acids according to the colorimetric methods of Goodwin and Williams (1952). Transaminase activity was however established by the formation of glutamic acid from 2 - oxo glutaric acid and the amino acids by thin layer chromatography (Sentheshanmuganathan, Rodrigo and Kamalanathan, 1969).

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