

ABSTRACT

Studies on Indigenous Yeasts of Trinidad and TobagoGita Nagassar-Mohit

The objectives of this study were to acquire experience in yeast identification, create a data base on characteristics of indigenous yeasts isolated from the environments of the rum and sugar industries and identify yeasts of potential economic importance for the food and beverage industries.

From 250 samples taken at sugar cane mills and rum distilleries, 170 strains of yeasts were isolated. Based on gross morphology and fundamental biochemical studies, these were grouped into 16 clusters. Forty-four of these were selected for identification using procedures outlined by van der Walt (1970a) and van der Walt and Yarrow (1984). The results were assessed by a computerized key (Barnett et al., 1985), a computer assisted probabilistic yeast identification programme called COMPASS (NCYC, 1986) and non-computerized keys (Lodder, 1970 and Kreger-van Rij, 1984). The strains were also tested for killer properties using the method outlined by Young (1987). Strain responses to

preservation by subculturing and freezing were studied using methods proposed by Kirsop (1984).

Thirty-nine yeast strains were identified. These belonged to 21 species in the genera Candida, Cryptococcus, Hanseniaspora, Hansenula, Kluyveromyces, Pichia, Rhodotorula, Saccharomyces, Sterigmatomyces and Zygosaccharomyces. The other 5 strains produced aerial hyphae and were considered filamentous fungi. These were identified in the genus Hyalodendron and in the Geotrichum genus. Six strains identified as yeasts in the genera Candida, Hansenula and Pichia were found to be killers. Preservation via freezing in liquid nitrogen was observed to be superior over other methods.

From the results obtained, yeast strains with properties of potential economic and biotechnological importance e.g. fermentative ability, thermotolerance, osmotolerance and flocculence were identified. Consequently, this study should serve as a catalyst for stimulating future work on yeasts in these areas.

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