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CHARACTERIZATION OF INDIGENOUS YEASTS SPECIES ISOLATED FROM FRUITS FOR PINEAPPLE WINE PRODUCTION

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ABSTRACT

This study was designed to characterize yeast species isolated from fruits and use as starter cultures in pineapple wine production. Forty yeast isolates were obtained from fermenting pineapple, watermelon and cashew juices using culture-dependent method and screened for pathogenicity properties. Eleven of the yeast isolates were non-pathogenic and were investigated for their abilities to produce invertase, tolerate ethanol, sugars, grow at different temperatures and pH by spectrophotometric method. Identification of the yeast isolates was carried out using API (ID 32C) kit. The result obtained showed that Isolate PIN32 *(Saccharomyces cerevisiae* 4) had the highest invertase activity of 40.04±0.5 Umol/min followed by 30.17±0.1 Umol/min produced by WAM8 (*Saccharomyces cerevisiae* 1). The highest tolerance to ethanol was demonstrated by isolate PIN32 (*Saccharomyces cerevisiae* 4) and WAM8 (*Saccharomyces cerevisiae1*) with a growth of 1.31±0.3 and 1.26±0.2 respectively. Optimum glucose tolerance was observed in WAM8 (*Saccharomyces cerevisiae1*), while PIN32 (*Saccharomyces cerevisiae* 4) demonstrated the highest growth in 20% sucrose. Similarly PIN32 (*Saccharomyces cerevisiae* 4) and WAM8 (*Saccharomyces cerevisiae 1*) recorded the highest growth of 1.55 at pH 6. All isolates exhibited optimum growths at 30^0 C with PIN32 recording the highest growth. The isolates were identified as *Saccharomyces cerevisiae, Pichia farinosa, Saccharomyces kluyveri, Kloeckera japonica, Pichia ohmeri, Debaromyces polymorphus, Candida kefyr.* The result showed that PIN32 and WAM 8 could be selected as potential starter cultures for pineapple wine production based on the empirical findings in this work.