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SUITABILITY AND FERMENTATIVE PERFORMANCE OF INDIGENOUS PALM WINE YEAST (*SACCHAROMYCES CEREVISIAE*) USING APPLE

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ABSTRACT

Wine is a product of alcoholic fermentation by yeast on juice extract from ripe grapes or any fruit with suitable sugar content. The study was aimed at assessing the performance of the *Saccharomyces cerevisiae* isolated from palm wine in the production of wine. The yeast was isolated from palm wine and confirmed to be *Saccharomyces cerevisiae* by morphology, microscopy, and sugar fermentation tests. Fruit juice extracted from apple was inoculated with the *S. cerevisiae* isolated from palm wine and allowed to stand unperturbed for fourteen days. During the fermentation period, the fermenting 'must' was sampled at 2-day and 7-day intervals to monitor the physicochemical and microbiological conditions, respectively using standard methods. Five-point Hedonic scale was used to carry out a sensory evaluation of the apple wine. The yeast proved to be highly tolerant of alcohol and the pH of the apple wine produced at the end of fermentation was 3.7, which was slightly lower than that of the unfermented juice (3.8). While the temperature and alcohol content of the apple wine increased, the titrable acidity, reducing sugar and specific gravity decreased with the increasing length of fermentation. The final values with respect to reducing sugar, specific gravity, alcohol content, pH, and temperature of the wine were 24.45 g/l, 1.00, 12.23 % (v/v), 3.7, 30.3 °C, respectively. The result obtained from the sensory evaluation of the final product implies that the apple wine was generally acceptable. Hence, it is recommended that this indigenous yeast isolate (*S. cerevisiae*) should be utilized in subsequent brewing processes since it imparts a unique aroma and flavour to the wine.



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