

AN INVESTIGATION INTO PINEAPPLE (*ANANAS COMOSUS*)

WINEMAKING

ABSTRACT

The research project sought to develop a formulation for preparing wines from pineapples readily available in Trinidad. It also investigated the effect of a yeast nutrient additive or fermentation enhancer on the rate of fermentation of pineapple juice. By utilizing analytical, microbiological and organoleptic techniques, an evaluation was made of the pineapple wines produced from these fermentations.

The fermentation enhancer, diammonium orthophosphate, was used at levels of 1.0 g/l, 5.0 g/l and 10.0 g/l in prepared pineapple juice and the change in specific gravity and sugar concentration ($^{\circ}$ Brix) with time at ambient temperature (27–29°C), was monitored. An enhancer level of 5.0 g/l resulted in the fastest fermentation with the lowest specific gravity, at the end of fermentation. This wine had the highest alcohol content (14.5% by volume), after fermentation to dryness.

Microbiological examinations were conducted during the fermentation of the pineapple juice in order to monitor changes in yeast cell counts and to detect wine spoilage organisms. The wines were free

of acetic acid and lactic acid spoilage organisms at the end of fermentation and maximum yeast cell counts were achieved by Day 2 of fermentation.

An evaluation using Ultra violet-visible spectroscopy in the wavelength range 210–700 nm was conducted to detect differences in the characteristic absorbance pattern of each wine produced. The absorbance and transmittance values of the wines at three wavelengths used in the analysis of wines (425 nm, 475 nm and 525 nm) were also determined.

A 38-month old wine containing 10.0 g/l diammonium orthophosphate was evaluated against the 'young', experimental wine containing the same level of the enhancer by using gas chromatography, atomic absorbance spectroscopy and ultra violet-visible spectroscopy. This was to determine whether aging produced significant changes in the wine composition. Although differences existed between the young and aged wine they were not markedly different from an analytical perspective.

The wines were evaluated using a semi-trained taste panel. The panel chose the wine containing 1.0 g/l diammonium orthophosphate as the most outstanding. An enhancer level of 5.0 g/l gave the best formulation for a fast fermentation from a flavour perspective an enhancer level of 1.0 g/l diammonium orthophosphate was appropriate.