

SECTION D

THE USE OF SODIUM METABISULPHITE TO INCREASE ALCOHOL YIELDS IN THE COCONUT SAP FERMENTATION INDUSTRY

U. Samarajeewa, D. T. Mathes, M. C. P. Wijeratne
and T. Warnakula
(*Cocomut Research Institute, Lunuwila*)

The coconut sap contains sufficient sugars to produce about 10% alcohol in controlled fermentation. However the average yields recorded in the industry is only 6.5%. This is due mainly to activity of "wild yeasts" and bacteria. Sodium metabisulphite is used successfully in the wine industry to suppress unwanted microorganisms. However its use in the coconut sap fermentation industry could cause additional problems due to high ambient temperatures and the methods of collecting and fermenting sap.

Yeasts isolated from coconut toddy and those used in other alcoholic fermentation industries were tested in the laboratory for their ability to ferment coconut sap containing variable amounts of sodium metabisulphite. Nine cultures of toddy yeasts produced no alcohol above 100 ppm of preservative. A natural inoculum from toddy produced alcohol even at 200 ppm. The Champagne and Hock yeasts produced alcohol at 100 ppm but not at 200 ppm. The alcohol production by Sautern yeasts was not affected up to 200 ppm of preservative.

Different concentrations of sodium metabisulphite were introduced into toddy collecting pots in the fields. The results showed a statistical average of 8.4% alcohol in 3½ days with metabisulphite levels less than 200 ppm. The resulting toddy did not possess the usual sulphurous odour.