D - 32

STUDIES ON PALMYRAH (*BORASSUS FLABELLIFER*) PALM SAP

K. Theivendirarajah *and* **R. K. Chrystopher**
(*Dept. of Botany, University of Jaffna, Thirunelvely*)

The average sap yield per male palm for 24 h period under the two different methods of tapping, viz., aripanai (from young inflorescences) and vallupanai (from mature inflorescences) are 5,020 ml and 3,160 ml respectively. The sap yield from the female palm for 24 h period under the thattupanai method of tapping (young inflorescence) is 5,915 ml.

However, there is variation in the yield of sap between palms and also between spathes from the same tree. The rate of flow of sap in a particular inflorescence seems to be fairly constant throughout the day. In a high yielding inflorescence, the rate of flow was estimated as 2.86 ml/min.

Sugar analysis of sap from both male and female palms under different tapping methods showed variation ranging from 10%-16.5%. The average value of sugar content for male (aripanai), male (vallupanai), female (thattupanai) and female (kaivetty) are 12.3 $\pm$ 1.045%, 13.3 $\pm$ 1.248%, 15.5 $\pm$ 0.803% and 11.54 $\pm$ 0.843% respectively. There is also variation in sugar content among the different inflorescences of the same palm. The sugar is primarily non-reducing sugar (sucrose) with trace amounts of reducing sugar.

The average alochol yield in fully fermented palmyrah toddy (i.e., after 48 h) is 5.48%. However, there is wide variation in the alcohol in toddy fermented for shorter periods (12-48 h) ranging from 2% to 6.7%.

Improvement in alcoholic fermentation was achieved by introducing pure selected yeast inoculum, into the collection pots. An increase of 1.0%-1.5% alcohol over the control wsa observed.

The gas chromatographic pattern of the alcohols distilled from different toddy samples was studied. The main component is ethanol with trace amounts of methanol and there is variation in the propanol/isopropanol content.

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