# LACTIC-ALCOHOLIC FERMENTATION IN COCONUT TODDY

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Coconut inflorescence sap was collected in flame sterilized earthernware pots. The microbes present in toddy and some biochemical changes brought about by them were noted at intervals upto 120 hrs.

No microbes were detected during the first three hours of collection and the pH remained around 7. The sap was brownish yellow and clear. The solution turned turbid by the fourth hour and slender long red shaped bacteria appeared in the sap. Lactic acid upto 2.5g/litre was produced and pH dropped to 4. No alcohol was detected.

At pH 4, the yeast population increased reaching a cell count of $10^7$ per ml. in 2–2½ days producing 8 percent ethanol. The sap was next dominated by acetic acid bacteria.

The coconut sap undergoes spontaneous lactic-alcohol fermentation. A succession of micro-organisms were observed, where the lactic acid bacteria which appeared first lowers the pH for the rapid growth of yeasts which in turn produced ethanol, which is the raw material for acetic acid bacteria. Asporogenous non-fermentative yeasts were predominant during the initial stages of alcoholic fermentation. Sporogenous fermentation types appeared towards the later stages.