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**THE EFFECT OF HAL *VATERIA COPALLIFERA* ALSTON BARK
ON SOME BIOLOGICAL ASPECTS OF MICROORGANISMS IN FERMENTING
COCONUT SAP (TODDY)**

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The effect of the addition of dried *V. copallifera* bark on the microbial population and associated changes in some major and minor chemical constituents of fermenting sap was studied under natural conditions.

Samples of coconut sap in the presence (treated) and absence (untreated) of the dried *V. copallifera* bark were collected in the traditional way. These samples were subjected to micro-biological and biochemical studies.

Microorganisms responsible for the fermentation of coconut sap included *Enterobacter ae ogenes*, *Saccharomyces chevalieri*, *Bacillus polymyxa*, *Bacillus macerans*, *Candida tropicalis* and several others. These micro-organisms appeared in all samples, irrespective of the presence or absence of *V. copallifera* bark, but their abundance was higher in untreated samples. Bacteria such as *Staphylococcus* spp and *Micrococcus* spp were absent in the treated sample.

The addition of *V. copallifera* bark appears to affect the rapid growth of the micro-organisms and the associated physico-chemical changes. Comparative data on pH, non-reducing sugars and ethanol in the two samples indicated the inhibitory effect of *V. copallifera* bark on micro-organisms responsible for the conversion of sugars to ethanol. No significant difference was observed in the di-acetyl content of the two samples. However, concentration of lactic acid was higher in samples collected in the presence of the bark.

The untreated sap also contained certain amounts of polyphenolic compounds, but apparently had no significant effect on the fermentation process at the concentrations present. The growth of bacteria and yeast decreased with the increase of the polyphenol content in the treated samples.

Some of the microorganisms isolated from fermenting coconut sap were inhibited by aqueous extracts of *Vateria* bark. Anti-microbial activity of the separated polyphenolic compounds of *Vateria* bark were also tested.

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