

***Syzygium cumini* AS A NATURAL SUBSTITUTE FOR SLAKED LIME TO INHIBIT THE FERMENTATION OF PALMYRAH INFLORESCENCE SAP.**

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The unfermented inflorescence sap of palmyrah, containing 100 g l⁻¹ of total sugar is consumed as a refreshing beverage or used for jaggery preparation. Slaked lime coated earthen pots are used to inhibit the fermentation of the sap by air-borne microbial flora. During jaggery preparations, the lime is removed by the addition of superphosphate. Lime changes the taste of the sap and hence *Syzygium cumini* was studied as an alternative. The fermentation medium containing (g l⁻¹) glucose, 50; yeast extract, 50; peptone, 5.0 and NaCl, 5.0 was inoculated with the organisms obtained from toddy sediment [Palmyrah Toddy Mixed Culture (PMC) 1% v/v] was used as the control and incubated at 30°C without shaking. The cell growth (OD, total & viable cell counts), glucose consumed and ethanol produced were measured under all experimental conditions at 14 h & 24 h. As tests, to the fermentation medium different concentrations (2.5, 5.0 & 10% v/v) of extracts, whole plant part (not homogenized) and their residues from tender leaves, bark, seeds and roots were added. The extract of tender leaves (10% v/v) and all concentrations of bark extract showed inhibitory effect on growth. However, sugar consumption and ethanol

production were higher in all tests, which were incorporated with the extracts, than in the control. All the residues and plant parts inhibited cell growth and ethanol production but not sugar consumption at 14 h. The residue of the seeds showed the best results. As the removal of homogenized plant parts from the sap is difficult, the whole plant parts are used to study the fermentation of palmyrah inflorescence sap. Sugar consumption was minimal at 14 h & 24 h in the media incorporated with whole seeds. All the plant parts inhibited ethanol production at 14 h while bark and seeds inhibited ethanol production at 24 h. Usually the sap is collected at 12 h intervals. To minimize sugar consumption and alcohol production *Syzygium cumini* seeds can be recommended for unfermented sap collection instead of slaked lime.