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Evaluation of the effect of plant material as fermentation inhibitors for palmyrah sap

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Palmyrah sap is an important output which is used for sweet toddy or fermented toddy production. Due to the high sugar content, sap is easily fermented uring collection by air borne wild microbes due to contamination of pots or containers. However, for sweet toddy, treacle and jaggary production, fermentation should be inhibited to maintain the fresh sap until further processing. Lime is commonly used as fermentation inhibitor in sweet toddy production. Although lime acts as a good inhibitor, accumulation of ions, coagulation of protein and time taken to adjust the pH of the sap are problems associated with usage of lime. This study was carried out to evaluate five plant material *such as Launaea coromandelica* dried bark*, Anacardium occidentale* leaves, *Vateria acuminata* bark*, Syzygium cumini* bark *and* seeds, as fermentation inhibitors of palmyrah sap. Powdered form of 5.0 g plant material was added into each collecting clay pot. The pots were hung over the crown of the tree to collect the sap for 24 hours. Sap collected from lime added clay pot and pots without any additive were taken as positive and negative controls, respectively. Immediately after 24 hours of collection, physicochemical properties of the sap, total soluble solids, pH, acidity and alcohol content were analysed. Based on the results better materials used were screened out. The screened materials were assayed for polyphenolic (total phenol, flavonoid and tannin) content. Based on the results, *L. coromandelica* bark*, S. cumini* bark and *V. acuminata* bark were selected as effective fermentation inhibitors for palmyrah sap due to high total soluble solids, high pH, low acidity and low alcohol content. Colour formation in the sap was observed for *L. coromandelica* bark and *S. cumini* bark. According to the polyphenolic analysis *L. coromandelica* bark showed highest values for total phenol, flavonoids and tannin in the aqueous extract. However, *V. acuminta* bark showed the highest values for total phenol and tannin while *L. coromandelica* bark showed the highest value for tannin content.

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