

DOWNSTREAM PROCESSING OF PALMYRAH FRUIT EXTRACT FOR SUGAR

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The main components of the palmyrah fruit pulp (%w/w) were sugar 14 -16, crude protein 2.8, lipid 1.0 and fiber 1.5 . Pectin is also present in the pulp. Palmyrah fruits (five fruits weighing 7.3kg) were peeled and the pulp was manually extracted by adding water (1.6l). Pulp extracted was 28.4% (w/w) of the fruit weight and the pulp in extract was 0.57kg l^{-1} with 1.75 folds dilution. The pH and reducing sugar in the pulp were 3.9 and 90.8g l^{-1} . Pectin in the pulp extract was gelled by mixing with quick lime powder (containing 50% CaO) instead of $\text{Ca}(\text{OH})_2$ in solution. When 1.96g l^{-1} quick lime powder was added to the pulp gelation took 22min. However when the amount of quick lime used increased to 2.08g l^{-1} , gelation time was reduced to 12min. The effect of pH with constant amount of Ca^{2+} ion (20ml of 10% CaCl_2 , 0.7g of Ca^{2+}) on gelation was studied in the pH range from 7.0 to 10.0 by adjusting the pH using 0.1N NaOH. The optimum pH for the gelation in presence of Ca^{2+} was 9.0 and the time taken for gelation was 12min. The gelled pectin was separated using a strainer and a pale yellow colour sugar extract (780ml) was obtained. The sugar content and optical density (at 610nm) of the sugar extract were 96.2 and 0.06g l^{-1} respectively. The recovery of sugar in this process was 83.3%.

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