DETERMINATION OF SUGAR AND VITAMINS IN COCONUT WATER BY HPLC

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Young coconut water is a popular beverage because of its high purity and richness in sugars and minerals. In the past, several authors have reported the variation in concentration of sucrose and reducing sugars in developing nuts (Nathanael, 1980 : Mohandas, 1979).

Quantitative, determination of sugars and vitamines in young coconut water "Kurumba" and King coconut water "Thambili" was performed using HPLC. Sugar-Pak^{Tm} 1 and Bonda Pack C_{18} columns were the stationary phases for sugars and vitamines respectively. Detections were made with Milli Q water as the mobile phase, a Waters model 401 refractive index detector for sugars and for vitamines with 80% methanol and a 440 fixed wave length UV detector.

In developing King coconut and DxT hybrids, glucose and fructose were identified as the main sugars and their concentrations were found to gradually increase upto 8 months age. The concentrations of sucrose, glucose, and fructose at this age in King coconut and hybrid coconut were 12.1, 654.7, 630.0, μg/ml and 13.5, 571.8 and 562.6 μg/ml respectively. From the 9th month onwards the concentration of sucrose gradually increased with concomitant decrease in reducing sugars. Galactose appeared in low concentrations at maturity and at 10 months age concentration of galactose in King coconut and hybrid coconut were 72.3 and 73.5 μg/ml respectively.

Ascorbic acid (vitamine C) was the main vitamine observed in both types. There was no appreciable difference in the concentration of sugars and ascorbic acid in the coconut water between the two types studied.

References:

Nathanael, W.R.N. (1980) Cey. Cocon.Q. 11 : 31-54

Mohandas, S. (1979) Proc. SLAAS. 46