ACCUMULATION OF NPKCaMg AND SUGARS IN THE NUTWATER AND KERNEL DURING DEVELOPMENT OF COCONUT

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Accumulation of sugars and NPKCaMg in the nutwater was progressively increasing from stage 1 (beginning of nutwater formation) to stage 5 ('kurumba') at which whole nutwater (470ml) in the kurumba contained total sugar 24.5g, reducing sugar 20.5g, N.O.152g, P. 0.075g, K.1.1g, Ca.0.15g and Mg 0.04g and thereafter was decreasing steadily as reported by Nathanael (1952) until stage 9 (green ripe nut) at which whole nutwater (210ml) contained total sugar 6.6g, reducing sugar 3.2g, N 0.08g, P 0.05g, K 0.47g, Ca 0.07g, and Mg 0.02g.

In the kernel sugars were progressively increasing from stage 4 (beginning of kernel formation) to stage 6 (tender 'kalati') at which 231g kernel contained total sugar 8g and reducing sugar 1.6g. Since then to maturity contents of total sugar remained almost unchanged whereas reducing sugar gradually decreased to 0.9g. From stage 4 NPKCaMg and oil continued to increase gradually (agreeing CRI Annual Reports 1968 & 1969) until stage 9 where 298g kernel contained N. 2.38g, P. 0.325g, K. 1.31g, Ca. 0.053g, Mg. 0.18g and oil 115g.

Therefore loss of NPKMg from nutwater during stages 5 to 9 was not sufficient to provide the NPKMg requirements that accumulated in the kernel; and the loss of sugar from this nutwater was greater than that found in the kernel which had in the meantime accumulated starch and oil.

References:

1. Nathanael, W. R. N. (1952), Ceylon Cocon. Quart. 3, 193-199.
2. CRI Annual Report (1968) Ceylon Cocon. Quart. 19. 28-30.
3. CRI Annual Report (1969) Ceylon Cocon. Quart. 20, 24-29.