REVISED FERTILIZER RECOMMENDATIONS FOR ADULT COCONUT PALMS

M. A. T. de Silva

Recommendations for manuring must necessarily be supported and based on field experimental results and current economic conditions. Unfortunately field experimental work with the coconut palm has proved to be very costly and time consuming. Most of the recommendations and advice that had been given by the Soil Chemistry Division in the past, had been based partly on experimental results and experience, and partly on scientific theory. Therefore, time and again it became obligatory to remind the coconut growers, that the recommendations and advice given by the Division, were mostly of a tentative nature, and that as and when new data are obtained, recommendations will be revised. In keeping with this policy the recommendations on manuring of coconuts have now been revised.

Experimental Results

Field experiments carried out by the Soil Chemistry Division have shown that while the poor (highly leached) lateritic soils of the South Western Zone of Ceylon could give as much as a 200% increase in yield, the richer soils of the Chilaw district could give an increase of at least 30%, for the annual application of 3½—5 lbs. of manure per palm. In general a minimum increase of about 1500 nuts per acre per annum could be obtained from neglected lands within about 3 to 5 years, by the annual application of fertilizers. This applies even to the best coconut growing areas of Ceylon like Nattandiya, Chilaw, Madampe and Bingiriya.

Nearly seven years ago, a field experiment was laid down at Bandirippuwa to study the effect of higher levels of fertilizers on the yield responses of coconuts. A feature of practical interest noted in this experiment is the significant yield response obtained for the application of 4½ lbs. of sulphate

of ammonia per palm per annum. The recommendations since August 1963 for the C.R.I. fertilizer mixtures A, B and C have been 2.67, 2.83 and 2.5 lbs. of sulphate of ammonia respectively in 8 lbs. of the mixture. This above observation is in agreement with that obtained in a similar experiment at Ratmalagara Estate, Madampe. This latter experiment had also shown that in a phosphate deficient soil, the best response is obtained for the application of 1½ lbs. of saphos phosphate per palm. The corresponding recommendations since August 1963 for the C.R.I. fertilizer mixtures A, B and C have been 2.67, 2.3 and 2.5 lbs. of saphos phosphate respectively in 8 lbs. of mixture. Recognizing the need for a revision, based on the foregoing results the following mixtures have been recommended by the Soil Chemistry Division since 1st January 1967:—

(i) *C.R.I. Mixture "A"*

Sulphate of ammonia	4 parts by weight.
Saphos phosphate	2 parts by weight.
Muriate of potash (60%K_2O)	2 parts by weight.

Percentage composition of mixture—10.3%N, 6.85%P_2O_5, 15%K_2O

(ii) *C.R.I. Mixture "B"*

Sulphate of ammonia	4½ parts by weight.
Saphos phosphate	2 parts by weight.
Muriate of potash (60%K_2O)	2½ parts by weight.

Percentage composition of mixture—10.3%N, 6.1%P_2O_5, 16.6%K_2O

(iii) *C.R.I. Mixture "C"*

Sulphate of ammonia	5 parts by weight.
Saphos phosphate	2 parts by weight.
Muriate of potash (60%K_2O)	3 parts by weight.

Percentage composition of mixture—10.3%N, 5.5%P_2O_5, 18%K_2O.

Rates of Application

It is estimated that annually a coconut palm removes from the soil, nutrients equivalent to 5.8 lbs. of sulphate of ammonia, 1.8 lbs. of saphos phosphate, and 3 lbs. of muriate of potash (30%)—totalling 10.6 lbs.

The experiment on higher levels of fertilizer application lends support to this estimate, since already the results indicate the need for increasing the rate. Based on these findings, the rates of application are increased for adult palms from 4–8 lbs. per palm to 8–10 lbs. per palm. The following are the recommendations for the different soils:

	SOIL TYPE	*C.R.I. MIX-TURE*	*Lbs. Fertilizer mixture per palm per annum*
1.	Lateritic loams and lateritic gravels (boralu or cabook soils) of the wet zone in the Southern, Western, Central and Sabaragamuwa provinces (districts of Colombo, Kalutara, Galle, Matara, Kandy, Matale South, Ratnapura, Kegalle)	"C"	10
2.	Lateritic loams and lateritic gravels of the intermediate rainfall zone in the North-Western province (districts of Chilaw, Puttalam, Kurunegala)	"B"	9
3.	Cinnamon sand soils of Chilaw/Negombo districts, coastal marine sands and lagoon sandy deposits of Puttalam, Chilaw, Negombo, Batticaloa, Mannar and Jaffna districts, and the sandy soils of the Southern and Western coastal belts.	"C"	10
4.	Deep reddish brown loams, sandy loams, and clay soils of the districts of Chilaw, Puttalam, Hambantota, Mannar, Anuradhapura, Vavuniya, Mullativu, Dambulla, and Melsiripura in the intermediate and dry zone.	"A"	8
5.	Limestone derived chocolate brown loamy soils of Matale, Nalanda, Dambulla and Jaffna districts.	"A"	8
6.	Deep alluvial loams in Valleys and flood plains of rivers and estuarine and lagoon soils.	"A"	8

It is also recommended that coconut lands which have been neglected and not manured for a continuous period of 5 years or more should be given one and a half times the recommended fertilizer dosages during the first two years.