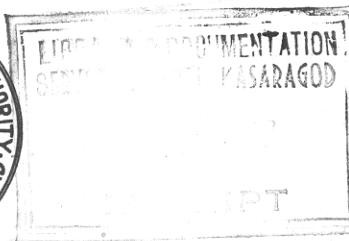


Coconut Research Institute



Leaflet No. 4

TRANSPLANTING COCONUT SEEDLINGS

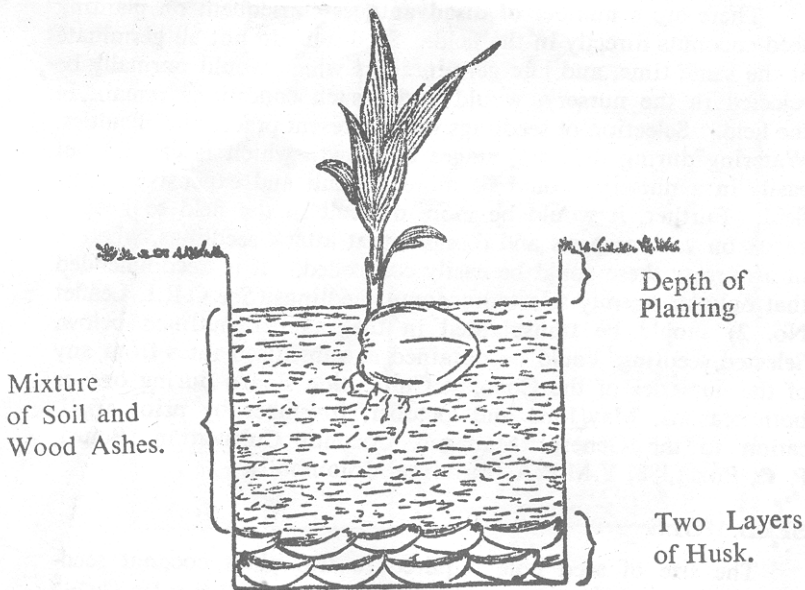
There are a number of disadvantages consequent on planting seed-coconuts directly in the field. Seed-nuts do not all germinate at the same time, and late germinations which would normally be rejected in the nursery, would under such conditions remain in the field. Selection of seedlings would present practical difficulties. Watering during the early stages of growth which is carried out easily in a nursery, would be more difficult and expensive in the field. Further, it would be more difficult in the field to keep a check on various pests and diseases that attack seedlings, whereas in a nursery these could be easily controlled. It is recommended that only stringently selected coconut seedlings (See C.R.I. Leaflet No. 2) should be transplanted in the manner outlined below. Selected seedlings could be obtained at subsidised rates from any of the nurseries of the Coconut Cultivation Board during one or both seasons, May/June and October/November by prior application to the General Manager, Coconut Cultivation Board, P. O. Box 1388, Y.M.B.A. Building, Colombo 1.

SEED HOLE

The size of seed hole required to transplant coconut seedlings would depend on the nature of the soil; 1m. x 1m. x 1m. (3x3x3 feet) in gravelly and harder soils, and 45 c.m x 45 c.m x 30 c.m (depth) (1½x1½x1 (depth) feet) in loamy soils. When the larger type of hole is cut in new clearings it is filled with a mixture of good top soil, 900g (2 lb.) ground dolomite and 450g (1 lb.) saphos phosphate. When replanting or supplying vacancies, 9kg. (20 lb.)

dried cow-dung (10 lb.) wood ashes or kitchen ash should be used for the above ingredients. 0.4kg (1 lb.) Sulphate of Potash or 2kg (20 lb.) deep litter poultry manure, or 4.5kg (10 lb.) goat manure or 15.8kg (35 lb.) compost may be used as an alternative to 9kg (20 lb.) dried cow-dung. 225g ($\frac{1}{2}$ lb.) muriate of potash may be used as an alternative to 4.5kg (10 lb.) wood ashes (or kitchen ash.)

The seed-hole is filled to about 23 cm (9 inches) below ground level. Two layers of husks may be placed at the bottom of the hole, concave side up, where water logging is not found, (see Figure.) Where planting is done in small seed holes placement of husks and or filling is not required. Manure may be spread after planting, round the palm in a space of 61 cm (2 feet), and forked in.



Two Layers of Husk.

DEPTH OF PLANTING

The seedling is planted in the centre of the seed-hole so that the entire nut is buried in soil. The depth of planting, *i.e.* the distance between ground level and base of shoot of seedling, depends on climatic conditions, soil type and drainage. Where the water table is high the depth is normally 15 c.m (6 inches,) and in well drained soils it should be at least one foot. In the dry zone, a depth of 0.5m (1½ feet) is not excessive, provided there is no water-logging.

PLANTING DISTANCE

A density of 64 palms per acre is recommended provisionally. This density could be obtained on any one of the following systems of lining:

7.9m x 7.9m (26 x 26 feet) square system

8.5m x 7.3m (28 x 24 feet) rectangular system

8.5m (28 feet) equilateral triangular system

TIME OF PLANTING

Planting should be done at the beginning of the monsoon rains.

ATTENTION IN THE FIELD

This consists of watering, weeding, protecting the seedlings from damage by cattle, black beetle, termites and from other pests and diseases.

WATERING

Transplanted seedlings should be watered at least three times a week during the first period of dry weather after they have been planted in the field. If possible, watering during drought, should be carried out until the seedlings have obtained a good root-hold.

WEEDING

A circle of radius 1.2m (four feet) round each seedling should be clean weeded and the weeds put back on the weeded circle to form a mulch, three to four times a year. Coconut husks are suitable for mulching. Weeding is best done before weeds flower, and where husks are used as a mulch, they should be arranged close together with the convex side upwards.

PESTS

Cattle and termites constitute the worst pests on young seedlings. Every precaution should be taken to keep off cattle by maintaining good live fences or barbed wire fences at least until such time that the leaves are out of reach of the animals. Termites could be efficiently controlled by the use of insecticides; **immediately before planting seedlings the seed-hole should be treated with a suitable insecticide, if termites are found on the land.** (See C.R.I. Leaflet No. 35)*

The young palms should be regularly inspected for pests and diseases and immediate control measures should be taken if any are detected.

MANURING

It is necessary to manure seedlings every six months, or more frequently especially with underplanting (see C.R.I. Leaflet No. 8)** Fertilizers could be purchased direct from the Fertilizer Corporation or through a Co-operative Society.

Extract from C.R.I. Leaflet No. 35, on Control of Termites.

Any one of the insecticides listed below can be used (Not arranged in a preferential order.)

<i>Insecticide</i>	<i>Formulation Marketed</i>	<i>Dilution</i>	<i>Dosage/ seedling</i>	<i>Place obtainable</i>
Aldrin	Aldrex 2	2 table spoonsful in 5 gals. of water	1 gal. of dilution/ seedling	Lankem Ceylon Ltd. 760, Baseline Road, P.O. Box 919, Colombo.
	Aldrin, miscible oil	1 table spoonful in 6 gals. of water	1 gal. of dilution/ seedling	Baur & Co. Ltd. P.O. Box 11, Colombo.
Chlordane	Chlordox	1 table spoonful in 6 gals. of water	1 gal. of dilution/ seedling	Fisons Ceylon Ltd., Box 69 Colombo.
	Intox 8	1 table spoonful in 6 gals. water	1 gal. of dilution/ seedling	Baur & Co. Ltd. P.O. Box 11, Colombo.

The dilution is poured into the soil with a watering can. More than one application is necessary, if the termite infestation is heavy. The above list is only a guide: any Aldrin or Chlordane insecticide could be used.

****Extract from C.R.I. Leaflet No. 8 on Manuring Young Palms**

A fertilizer mixture with a comparatively higher proportion of nitrogen and phosphoric acid is recommended for application during the first four years after transplantation of seedlings. Rates of fertilizer application are graduated according to the age of palms. A higher dosage is recommended for second plantations since in these the nutrient status of the soil is likely to be poorer than in new clearings.

The following fertilizer mixtures are recommended for young palms.

- (I) **Sulphate of ammonia based C.R.I. Young Palm Mixture**
(9.15% N, 9.15% P₂O₅, 13.32% K₂O)

Sulphate of Ammonia (20.6% N)—4 parts by weight
Saphos phosphate (27.5% P₂O₅)—3 parts by weight
Muriate of potash (60% K₂O)—2 parts by weight

- (II) **Urea based C.R.I. Young Palm Mixture**
(13.14% N, 11.79% P₂O₅, 17.14% K₂O)

Urea (46% N)—2 parts by weight
Saphos phosphate (27.5% P₂O₅) 3 parts by weight
Muriate of potash (60% K₂O) 2 parts by weight

Table I
RATES OF FERTILIZER PER PALM
 (Refer leaflets No. 44 for fertilization of CRIC-65 hybrid coconuts)

Time after transplanting	Sulphate of Amonia based C.R.I. young palm mixture		Urea based C.R.I. young palm mixture	
	New clearings	Second plantations and new plantations on sandy soils	New clearings	Second plantations and new plantations on sandy soils
6 months	225 g ($\frac{1}{2}$ lb.)	675 g ($1\frac{1}{2}$ lb.)	175 g (0.4 lb.)	525 g (1.2 lb.)
1 year	225 g ($\frac{1}{2}$ lb.)	675 g ($1\frac{1}{2}$ lb.)	175 g (0.4 lb.)	525 g (1.2 lb.)
1½ year	450 g (1 lb.)	675 g ($1\frac{1}{2}$ lb.)	350 g (0.8 lb.)	525 g (1.2 lb.)
2 years	450 g (1 lb.)	675 g ($1\frac{1}{2}$ lb.)	350 g (0.8 lb.)	525 g (1.2 lb.)
2½ years	675 g ($1\frac{1}{2}$ lb.)	900 g (2 lb.)	525 g (1.2 lb.)	700 g (1.5 lb.)
3 years	675 g ($1\frac{1}{2}$ lb.)	900 g (2 lb.)	525 g (1.2 lb.)	700 g (1.5 lb.)
3½ years	900 g (2 lb.)	1125 g ($2\frac{1}{2}$ lb.)	700 g (1.5 lb.)	875 g (1.9 lb.)
4 years	900 g (2 lb.)	1125 g ($2\frac{1}{2}$ lb.)	700 g (1.5 lb.)	875 g (1.9 lb.)
4½ years and beyond, until bearing, until 6 months intervals.	1125 g ($2\frac{1}{2}$ lb.)	1350 g (3 lb.)	875 g (1.9 lb.)	1050 g (2.3 lb.)