

POLYBAGGED SEEDLINGS — A NEW TREND

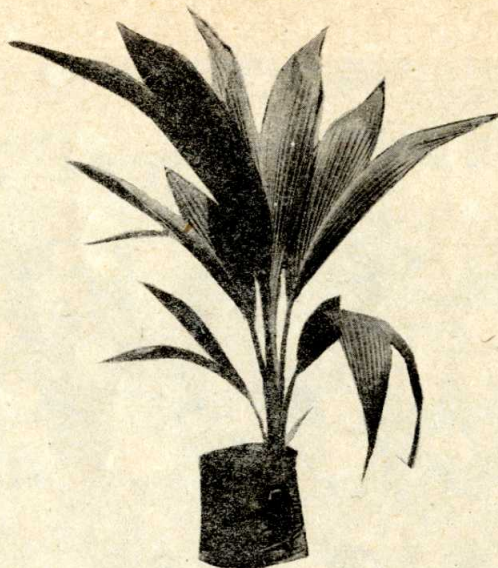
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A basic need in the establishment of a high yielding plantation is the use of high quality planting material. In such a plantation it is imperative to use well-grown, healthy seedlings. Research work has established that high quality seedlings are capable of providing high yielding palms.

In addition to the conventional coconut nursery, the Coconut Research Institute has recently introduced a system of raising coconut seedlings in polythene bags, which is gaining popularity. Selected seednuts are kept in a pre-nursery until they sprout and are then transferred to polybags at the crow's beak stage. Polybagged seedlings are being produced in a number of estates of the Coconut Research Institute with very satisfactory results. A brief introduction of this technique and our experience are given in this article.

Pre-nursery

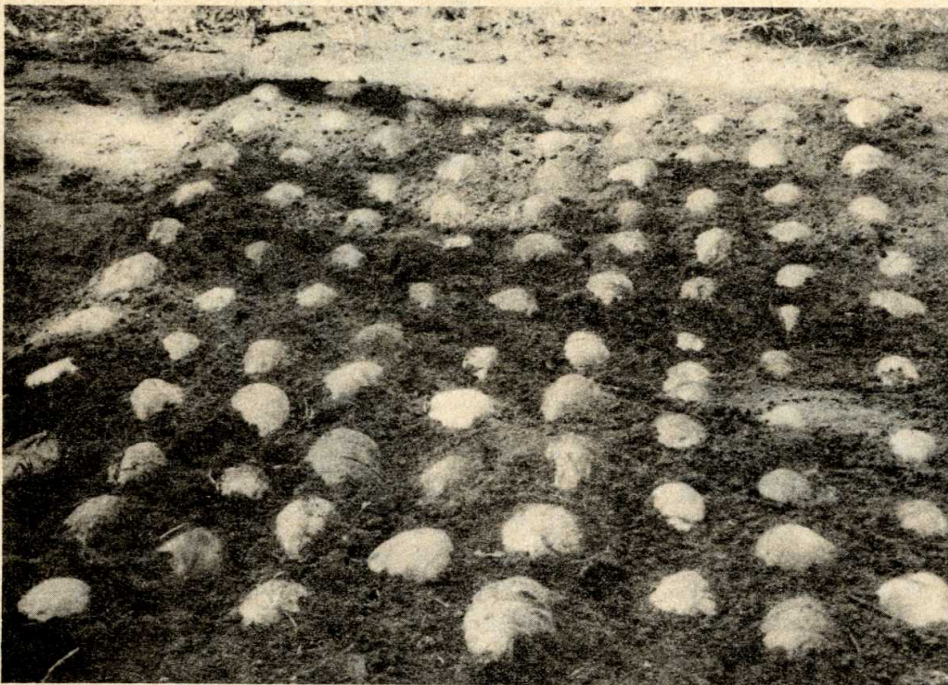
A shaded land is suitable for a pre-nursery. The area between two rows of coconut palms could be used to arrange nursery beds lengthwise. These could be of a convenient length and about 2 m in width to facilitate irrigation and weeding. Unlike in a conventional nursery, an extensive land area is not required in this technique. The space between nuts as well as between rows in pre-nursery beds should be about 5 cm (2 inches). Seednuts are laid in shallow trenches and covered with a layer of soil until the surface of the nut is only slightly visible, and are mulched with dried coconut fronds. In the absence of sufficient



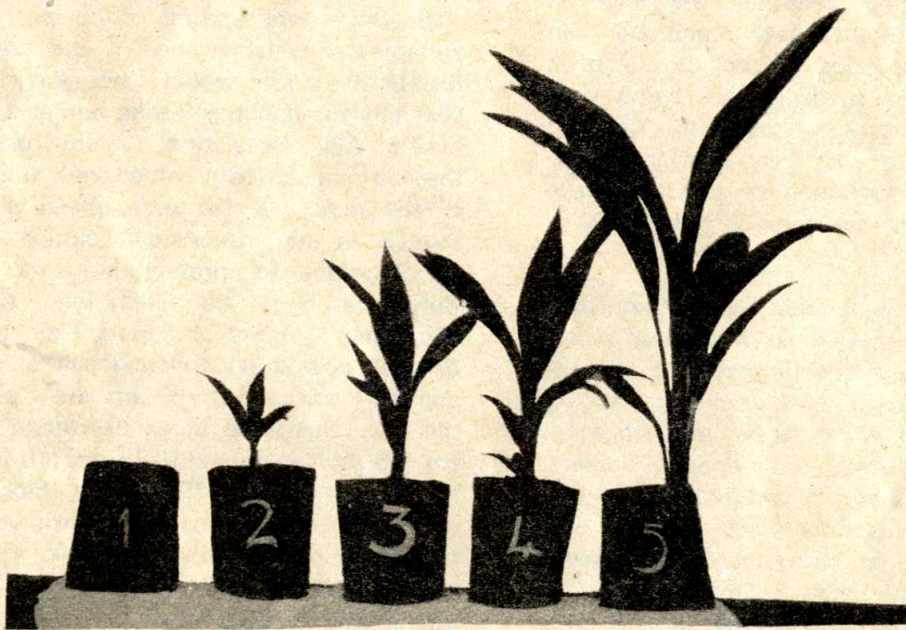
rain, the beds will have to be watered as usual. After a continuous dry period of 6 days, watering has to be done once in 3 days from the 7th day. Increase in irrigation frequency will hasten germination. Seednuts that germinate upto the fifth month from laying are selected for polybagging while the rest is rejected. Normally, about 85% of the seednuts germinate within 5 months, provided there is adequate irrigation.

Polybagging

Seednuts with sprouts of 2.5 cm (1 in) are suitable for polybagging. At this stage, only one or two roots would have grown into the soil and the damage during removal is minimised. Any roots that remain attached to the nut should be trimmed near the surface of the nuts and the entire seed should be soaked in an insecticide solution such as as chlordane for protection against termites. Polythene bags are filled with a mixture containing 3 parts of surface soil, two parts of dried cow dung and one part of coir dust, and the sprouted nuts are then planted in the bag. Gussetted black polythene bags, 43 cm (18 inches) in width, 43 cm (18 inches) in height and of 500–750 gauge thickness, are suitable for this purpose. The sprouted seednut should be planted in the polybag so that the upper surface of the nut is barely visible, and should be about 1.5 cm ($\frac{1}{2}$ inches) below the brim of the bag. This space could be mulched with coir dust. Polybags so prepared could be arranged close to each other for



Pre-nursery
on the ground.



Different stages of growth after polybagging (5) is ready for planting in the field.

about a month, and as the seedlings grow the gap between two polybags should be increased to about 75 cm (2½ feet). They could be placed in a triangular system. The shade between two coconut rows is adequate for a polybagged nursery. A film of polythene on the ground surface will prevent the roots from polybags growing into the soil and will also keep the nursery free of weeds. About four punctures with a nail on all four sides of the polybag at a height of about 2.5 cm (1 inch) from the ground level should be made to let out excess water. More punctures will tend to dry up the soil. Nearly all coconut seedlings so raised in polybags grow well and would be suitable for field planting. Generally, the rejections are less than 1%.

Manuring and Irrigation

The polybagged seedlings should be watered at least once in two days during dry weather. About 30 g (1 oz) of the following fertilizer mixture should be applied, once a month, to the top layer of soil and incorporated. The seedlings should be thereafter watered.

Urea (parts by weight)	1½
Muriate of Potash (parts by weight)	02
Concentrated Superphosphate (parts by weight)	01
Kieserite (parts by weight)	01

Best results could be obtained by applying 15 g of the above mixture once in two weeks.

Field planting

Manuring and Irrigation

Field planting

Seedlings are suitable for field planting after eight months of polybagging. However, seedlings in polybags can be kept for a period ranging from 12 to 18 months if required. At this stage, the roots of the seedlings are well developed in a cluster thereby binding the soil.

The preparation and the size of the planting hole are same as in the case for planting ordinary seedlings. A few sods of soil will have to be removed from the planting hole to accommodate the seedling and for the removal of the polythene without causing damage to the roots. The seedling should be kept vertical, and the base should be covered with soil and

well pressed. Fertilizer should be applied as in the case of a normal seedling as per CRI recommendation. The seedlings should be mulched

Although the higher cost of production and problem associated with transport appear to be limitations, the benefits of this system for the growers are as follows.

(a) The well developed root system of these seedlings will help tolerate the dry conditions after field planting. Plants from these seedlings are also likely to flower early. Any field vacancies could be filled with reserve seedlings, thereby resulting in a uniform plantation.

(b) The care and maintenance (fertilizer, weed control, irrigation etc.) required for an ordinary seedling would be relatively costly. As polybagged seedling have a well developed root system capable of establishing the seedlings relatively quickly, some of the expenditure in the field operations could be reduced. **Polybagged seedlings will also help to establish a uniform plantation relatively early.**

The technique of polybagged seedlings can be conveniently used by the growers to raise seedlings in the estate itself.