

SOME METHODS OF REJUVENATING COCONUT PLANTATIONS NOW PRACTISED

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IT is quite evident, judging from the numerous secondary plantations, that the importance of rejuvenating senile coconut plantations had been realised by coconut growers long years ago.

The coconut palm, like any other tree, is incapable of economically producing crops for ever. A stage is reached when manuring and cultivation is uneconomic. At this stage the palm shows a progressive decline in yield and ultimately tapers. The optimum period of economic productivity of an individual palm cannot, at present, be definitely stated. It is assumed that in general after about the sixtieth year the production declines gradually and the palm gives no response to cultivation and manuring. This is generally true of palms growing in poor soils but in good loamy soils, with proper attention, the palms are found to be in prime condition even after the eightieth year. Age alone cannot be the deciding factor of the productive capacity of a palm. Prolonged neglect may accelerate the decline of productivity and bring about the unproductive stage much earlier.

Two methods of plantation rejuvenation are practised now :—

- (a) Replanting in a gradual process senile palms on the same sites.
- (b) Complete underplanting.

The former is employed on large estates where the age and condition of palms do not warrant complete underplanting and the latter is the common method of rejuvenating senile areas. This is done by planting new seedlings between rows of the older plantation.

Coconut Plantations fall into three main categories: (a) Village Holdings, (b) Middle Class Holdings, and (c) Estates.

Village Holdings.—These are the small acreages owned by the villagers, which seldom exceed two to three acres. A common characteristic of these is overcrowding. The coconuts are irregularly and very closely planted and are often found in various stages of growth. All other available space is utilised for growing fruit trees such as Jak, Mangoes, Bread-fruit, etc., the idea being to get as many trees as possible into the limited space. The result of this overcrowding is reflected in elongated tapering stems with empty crowns.

Some attempts have been made to rejuvenate these holdings by planting seedlings under old palms with the ultimate object of replacing them but the results are disappointing. Where soil conditions were favourable as in good loamy soils, satisfactory growth of the underplants are noticeable but in poor soils, the plants are stunted and tapering.

This class of owner is ignorant of the proper methods of planting coconuts and cannot be expected by propaganda alone without demonstrations to appreciate the benefits to be derived from systematic cultivation.

It is not possible to carry out a general replanting programme in these holdings. The only practical solution would be the gradual removal of senile palms and systematic replanting of the land.

Middle-Class Holdings.— These are owned, as the term implies, by the middle-class section, the majority of whom depend entirely on the produce of their lands for their maintenance. These properties are normally neglected and, in most cases, the neglect is due to their inability to return anything in the form of manure and cultivation, back to the land. The position is worse in lands planted in unsuitable soils. The partial senility of most of the palms in these properties could be attributed to prolonged neglect. Very little has been done to rejuvenate these properties, although a large number of senile palms are pre-ent. It may be possible to resuscitate these palms by intensive manuring and cultivation, but this being only a palliative, should not overshadow the importance of the general replanting of these senile areas. The majority of the replanted areas are quite young and it is too early to judge the results.

Lack of good planting material has resulted in most of these properties being planted with weak plants through no proper attention having been paid to selection of seed nuts or seedlings, or to the nursery. Even where selected seed-nuts have been obtained, all seedlings raised are planted without selection. Most of the owners are not aware of the correct methods of planting. They cannot afford the services of an experienced planter, and being in most cases absentee landlords, the work on the estate is entrusted to a caretaker or a watcher.

Stray cattle do most of the damage to young plants in these properties. They are unable to provide protections or enclosures due to the high cost which only a very few can afford. This matter should receive serious consideration. If young plants cannot be protected from damage, the money spent on replanting will be wasted.

Replanting work done on these properties is not very satisfactory. Very little attention has been paid to the correct preparation of planting holes and it is not unusual to find planting holes of even only a foot square. Deep planting is also a common occurrence. Experience shows that deep planting delays maturity.

Propaganda and demonstrations backed by advisory visits will help to bring about a better understanding of the correct methods of planting.

Estates.—In a few large well-managed estates, extensive underplanting had been successfully carried out. The soil conditions on these particular estates are not too favourable for coconuts. The figures below, which are obtained from underplanted estates, would show that underplanting could be carried out successfully, even in poor soils, provided the work is done well.

The soil conditions in the three plantations quoted below, differ greatly. A good area of No. 1 contains sandy loam with a mixture of gravel and the rest cabook and gravel, with a gravelly sub-soil. In No. 2 the soil is very unfavourable for coconuts, the whole area being of cabook and gravel and also the land is hilly. In No. 3 the soil is a sandy loam with a mixture of gravel and the land is flat. In all these underplanted areas, the older plantation had been removed gradually, the work starting from about the fifth year. Few older palms that were not unduly competing with the younger plants, have not been removed.

It should also be mentioned that plants in No. 1 have not been manured till about 1940. Since then the plants have received a regular dose of manure. Plants in Nos. 2 and 3 have been regularly manured from the time of planting.

AREA No. 1

<i>Acreage underplanted</i>	..	..	110 acres.
<i>Soil conditions</i>	..	..	Top soil: sandy loam, cabook and gravel Sub-soil: cabook and gravel.
<i>Lay of the land</i>	..	..	Undulating.

PARTICULARS OF PLANTING

<i>Year</i>	<i>Seedlings planted</i>	<i>Total</i>
1926 ..	751 ..	—
1927 ..	768 ..	1,519
1928 ..	1,162 ..	2,681
1929 ..	1,221 ..	3,902
1930 ..	829 ..	4,731
1931 ..	171 ..	4,902
1932 ..	1,123 ..	6,025

PARTICULARS OF BEARING

<i>Year</i>	<i>No trees bearing</i>	<i>Crop</i>	<i>Nuts per palm</i>
1932 ..	7 ..	—	—
1933 ..	123	—	—
1934 ..	361	—	—
1935 ..	920 ..	34,860 ..	37
1936 ..	1,573 ..	60,594 ..	38
1937 ..	2,289 ..	72,214 ..	31
1938 ..	2,700 ..	93,031 ..	34
1939 ..	3,139 ..	110,136 ..	35
1940 ..	3,402 ..	96,158 ..	28

AREA No. 2

<i>Acreage underplanted</i>	..	..	53 acres
<i>Soil conditions</i>	..	..	Cabook and gravel
<i>Lay of the land</i>	..	..	Hilly

PARTICULARS OF PLANTING

<i>Year</i>	<i>Seedlings planted</i>	<i>Total</i>
1934 ..	720 ..	—
1940 ..	210 ..	930
1941 ..	1,353 ..	2,283
1942 ..	915 ..	3,198

PARTICULARS OF BEARING

<i>Year</i>	<i>No. trees bearing</i>	<i>Crop</i>	<i>Nuts per palm</i>
1940 ..	7 ..	74 ..	10
1941 ..	18 ..	143 ..	8
1942 ..	50 ..	358 ..	7
1943 ..	161 ..	1,485 ..	9
1944 ..	256 ..	880 ..	3
1945 ..	482 ..	4,976 ..	10
1946 ..	544 ..	3,716 ..	6
1947 ..	622 ..	17,288 ..	27
1948 ..	866 ..	35,065 ..	40

AREA No. 3

<i>Area underplanted</i>	55 acres
<i>Soil conditions</i>	Top soil : sandy loam with a mixture of gravel Sub-soil : gravel
<i>Lay of the land</i>	Flat

PARTICULARS OF PLANTING

PARTICULARS OF BEARING

Year	Seedlings		Year	No. trees bearing		Crop	Nuts per palm
	planted	Total		bearing			
1937 ..	643 ..	2,144	1943 ..	1 ..	—	—	
1938 ..	1,501 ..	2,144	1944 ..	28 ..	592 ..	21	
1939 ..	1,076 ..	3,220	1945 ..	198 ..	4,850 ..	24	
			1946 ..	644 ..	11,213 ..	17	
			1947 ..	1,014 ..	32,893 ..	32	
			1948 ..	1,405 ..	95,777 ..	68	

For successful underplanting, it is absolutely essential that the work from the beginning should be carefully carried out. The first requisite is a well-selected seedling. Next comes the correct preparation of the planting hole and subsequent planting. The after-care of the plant by which I refer to regular manuring and cultivation, should receive much consideration. On this depends the vigorous growth of plants resulting in early maturity. When the plants have reached the flowering stage and are found to compete for light and space, the older palms must be removed to provide these facilities.

Selective and gradual removal of old palms causes the least financial embarrassment. This work should be started on about the fifth year after planting. The duds and unproductive palms could be removed much earlier, say at the very commencement, as this causes no loss but at the same time helps to promote better growth of the plants by providing space and light. It is poor economy to stint expenditure on this essential work as the resultant benefits far compensates the initial expenses involved.

Early removal of the old palms is absolutely essential if underplanting is to be a success. Failure to do so will result in the "underplants" growing long and thin, with inadequate foliage and often early tapering; not only this, but the period before they come into bearing will also be delayed, cases of "underplants" not coming into productivity even after 20 years have been known, all because of the competition for plant-food, moisture, light, and air between the old and the second generation.

The removal of the old palms should be begun—if possible—during the first year and be completed by the time the young palms are 6 years old.

Regarding the method of regenerating, it has often been asked whether it is advisable to underplant areas which are obviously in good condition though the palms are well over sixty to seventy years and the opinion has been expressed that replacing senile palms gradually and progressively would be the better method of rejuvenating such old plantations.

Every plantation has problems peculiar to its own and as such a general answer cannot be given. On each plantation, the suitability of underplanting or replanting should be considered carefully, bearing in mind the soil and the general condition of the palms. On estates where duds and unproductive palms have been removed and vacancies supplied regularly, the stand of palms would be of varying ages with younger palms predominating. On such estates, the question of complete underplanting does not arise.

The general impression one gathers from a survey of the Coconut Plantations is that the attempts made so far to regenerate the old plantations are inadequate. Except in large estates and a few of the smaller ones, the replanting work has not been carried out satisfactorily, the causes being ignorance and inability to appreciate the value of systematic and correct work.

[A comparison of the three systems : under-planting, partial removal and total removal of first-generation palms is now being made at Bandirippuwa by means of randomised and replicated plots.—Ed.]
