

*Ceylon Cocon. Prs. Rev.* (1974) 7, 74-86.

## PINEAPPLE UNDER COCONUT

D. B. HETTIARACHCHI

*Coconut Research Institute, Lunuwila, Sri Lanka.*

(Received 21 October 1976)

(Approved 8 August 1978)

### ABSTRACT

Hettiarachchi, D. B., 1974. Pineapple under coconut.

*Ceylon Cocon. Prs. Rev.* 7, 74-86.

Observations made on the cultivation of pineapple under coconut by "Annāsi Mudalālis" in the Colombo district is recorded. Selection and preparation of lands for the cultivation of pineapple, methods of planting, varieties used, and other cultural methods used for successful cultivation of pineapple are described based on interviews with the pineapple "Mudalālis". Profitability of pineapple cultivation is also emphasized.

### INTRODUCTION

Pineapple cultivation on old and unprofitable coconut lands in the Colombo District has been practised for several decades, and has proved to be a very profitable agricultural enterprise. The pineapple cultivators, popularly known as "Annāsi Mudalāli"s hardly ever fail in their ventures for they know by long experience the strategy required to grow the crop successfully. This article is based on the writer's firsthand observations of pineapple under coconut in the hands of smallholders.

#### *Location of Sites*

Neglected coconut plantations on gravelly soils in the Wet Zone are normally selected for pineapple cultivation and these can be usually obtained on easy lease terms. As the lands are neglected, there will only be a few coconut palms, and these too would be in poor vegetative condition with their spindly trunks and a poorly developed crown of a few short leaves which would allow sunlight to filter through to the ground. Most of these lands are undulating and the soils are well drained. Once the initial selection is made, negotiations are then entered into with the owner of the land. Two incentives induce the owner to lease out his land for pineapple cultivation. He gets a payment for lease of the ground, and furthermore, according to the contract that is entered into, the land is underplanted with coconut seedlings by the lessee, and this is obligatory. The period of the lease agreement is usually six to eight years and the price paid per hectare is in the range of Rs. 125/- to Rs. 375/-. In recent times with the introduction of various subsidy schemes for improvement of

coconut cultivation, it is rather difficult to find neglected coconut lands which would suit pineapple cultivation and the various demands of the "Annāsi Mudalālī"s. Consequently, the "Annāsi Mudalālī"s have to pay more to obtain neglected coconut lands, and the present method of payment, based on the number of bearing palms on the land, ranges from Rs. 2/50 to Rs. 5/00 per palm per year.

#### *Preparation of Land*

Neglected coconut lands are generally very weedy, and the first task after securing the land is the destruction of the shrubby undergrowth. This operation would cost Rs. 250/- to Rs. 750/- per hectare. The land is then subjected to deep cross-ploughing, after which a tiller is run on the contours thereby working up the soil to a fine tilth. The tillage operation would cost Rs. 750/- per hectare. In accordance with the terms of agreement, the land is lined for coconut planting sites, planting holes are opened and subsequently filled according to the recommendation of the Coconut Research Institute (see Advisory Leaflet No. 4). Selected coconut seedlings are transplanted with the onset of the rains. Adequate fencing is required to keep any stray cattle which would destroy the pineapple plants as well as the newly-planted coconut seedlings.



Fig. 1. Pineapples planted in rows between rows of coconut palms.

### *Establishment of the Pineapple Plantation*

With the onset of the first showers, shallow trenches are cut 2.7 metres apart leaving about one metre radius around the base of the coconut palm. Pineapple suckers or ratoons are planted in the trenches, the usual planting distance being 30 cm apart (Fig. 1). It is usual to treat the planting material with a systemic insecticide, and the suckers are stored two to three weeks in the shade before planting. Eight thousand five hundred to ten thousand ratoons or suckers are required to plant one hectare. The cost of opening up trenches and planting 1,000 ratoons is Rs. 22/- approximately, while ratoons collected from disease-free plantation may cost up to Rs. 300/- per 1,000 (Fig. 2).



Fig. 2. A pineapple sucker at the correct stage of planting.

### *Choice of Planting Material*

The commonest variety grown under coconut is Mauritius, which is suitable for the local market. This can be either consumed fresh or used for the preparation of cordials, chutneys etc. The Kew or smooth cayenne variety is suitable for the canning industry, but this is not commonly grown under coconut as it requires more sunlight than the Mauritius variety.

The crowns of large selected fruits may be also used to provide planting material. The crowns are split into four segments (Figs. 3, 4 and 5) and planted in a nursery. Each such crown will produce four suckers, which would be ready for planting in four months.



Fig. 3. The dubbing of the pineapple crowns to damage the terminal bud.



Fig. 4. These crowns are then split at the bar into 4 segments.



Fig. 5. Each treated crown will produce 4 suckers that are ready for planting 4 months after treatment.



Fig. 6. Weeding between rows of pineapple in the early stages.

### *Weeding*

Three months after planting, the first weeding is done using a mamoty between rows (Fig. 6) and by hand within rows. A second weeding is done after the sixth month. The frequency of subsequent weedings would largely depend on the rainfall pattern. The cost of weeding between rows would be approximately seven cents for row length of one metre.

### *Application of Fertilizer and Mulching*

After the first weeding, the first application of fertilizer is done along the row on one side. The recommended pineapple fertilizer mixture is sprinkled at the rate of approximately 85 g per plant and forked in. About 875 kg of fertilizer are required per hectare. Once forking is completed, coir dust is laid as a mulch, generally 60 cm wide and 45 cm high. Manuring, forking and mulching one hectare can be done by 15 persons in a day, and the operation would cost approximately Rs. 150/- (Figs. 7 and 8).



Fig. 7. Application of fertilizer to pineapple after the weeding is over.

When the plants are six months old, and after the second weeding the next application of fertilizer is done on the other (unfertilized) side of the row and this is followed by the application of coir dust mulch.

#### *Use of Insecticides*

The plants are sprayed with a systemic insecticide such as Super Sumithion using a power sprayer. The first spraying is done immediately following the first weeding, manuring and mulching operation at three months and the second spraying after the weeding, manuring and mulching operation at six months. Three men can spray 4 hectares in three days. This treatment is necessary to prevent pineapple wilt disease which is caused by mealy bugs which feed on the plants. When these insects are in great abundance, wilting is widespread and additional spraying may be necessary.



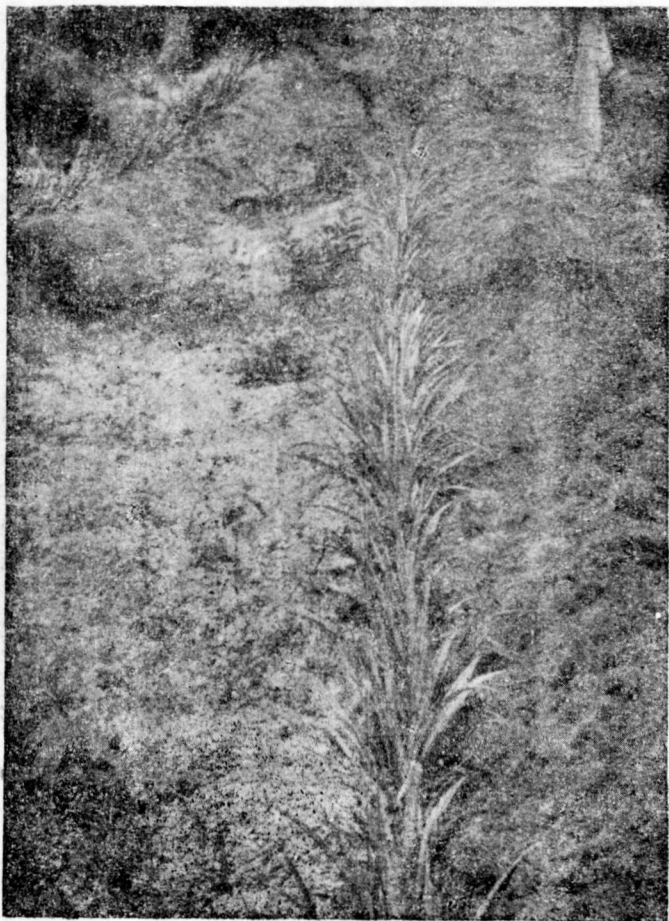


Fig. 8. Mulching of pineapple with coir dust after the application of fertilizer.

#### *Use of Chemical Fruiting Inducers*

The application of fruiting inducers such as Cellestion P,\* is now a standard practice in pineapple plantation management. Vigorous plants which are 11 to 12 months old and having about 21 leaves are subjected to this treatment. A stock solution of the chemical inducer is prepared by dissolving 225 g in 200 litres of water. Three hundred millilitres of this

---

\*The use of a trade name does not imply that the Coconut Research Institute recommends a particular product in preference to others that may be available in the market.

solution are poured into the bud region of each plant (Fig. 9). There should be at least six hours of dry weather after application of the inducer, and such applications are usually avoided during the rainy season. Two hundred and twenty-five grams of Cellestion P, costs Rs. 8/- and is sufficient for application to 4100 plants. The cost of application would be Rs. 100/- per hectare.



Fig. 9. Treatment of pineapple plant to induce fruit formation.

### *Harvesting of Crop*

The pineapple plants usually begin to flower five or six weeks after the application of fruiting inducer, and the fruits are ready for harvesting four or five months from the date of flowering (Fig. 10). Four persons could harvest 2,000 fruits per day. Each fruit may weigh between 700 g-2.25 kg. Although the normal fruiting season is April to May, off season fruits are produced virtually throughout the year with the use of chemical fruit inducers.

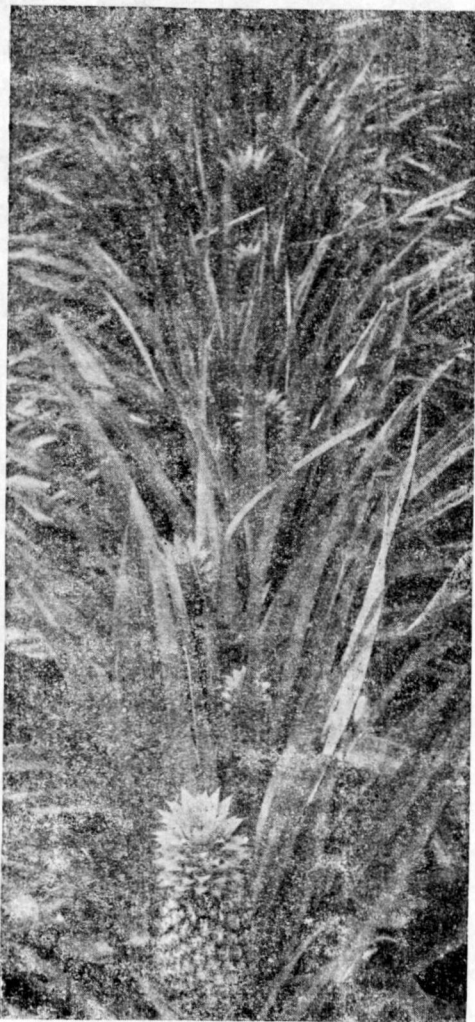


Fig. 10. Chemically treated pineapple plants showing uniform fruiting.

### *The Ratoon Crop*

The plants of the first season's growth become mother plants as they put out suckers which in turn produce fruits, and there could now be two or three suckers per clump. The yield gathered during the second harvest may be three times more than at the first harvest. Although there may be a reduction in the size of the fruit the third and fourth harvests could yield more fruits (Fig. 11). Depending on the efficiency of management, yields can be maintained for sometime, but by the sixth year a sharp decline is inevitable. It is now opportune to wind up this cultivation, a fact only too well known to the profit-conscious "Annāsi Mudalali". The coconut seedlings too would have grown during the five or six year period and as a result the land is no more attractive for pineapple cultivation.



Fig. 11. 3rd year crop. The yield is 3 to 4 times but the size of the fruit is reduced.

### *Marketing*

The harvested fruit is transported to either the Central Market in Colombo or to similar sale points in the bigger cities.

Graded fruits are sold to retailers, and current prices are indicated below :—

Grade 3 — weight less than 800 g—30-75 cents.

Grade 2 — weight approximately 800 g-1.35 kg—50 cts-Rs 1/50.

Grade 1 — weight approximately 1.5 kg-2.25 kg—80 cts-Rs 2/50.

Prices fluctuate according to supply and demand. Fruits are distributed to markets in the smaller cities and towns, and eventually they find their way to small wayside boutiques and fairs.

Pineapple is a nice and sweet fruit equally relished by children and adults. It is much sought after by tourists.

Furthermore, there is a tremendous potential for its use in the preparation of jams, cordials and for canning. There should be a ready market for pineapple for some time to come, and this may be an added incentive for prospective growers of this potential money-spinner.