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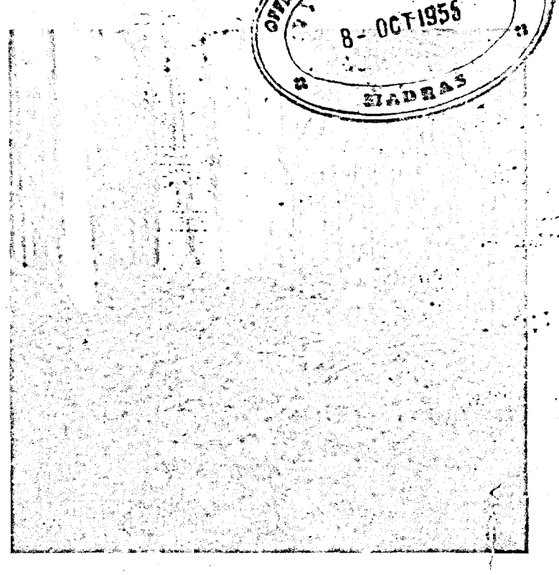

Green manure crop in arecanut garden.

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ISSUED BY

THE INDIAN CENTRAL ARECANUT COMMITTEE,
(Under the Ministry of Food & Agriculture, Government of India)
KOZHIKODE, (Malabar.)

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THE INDIAN CENTRAL ARECANUT COMMITTEE

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(The Editor is not responsible for the views expressed by contributors)

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Present Manurial Practice and the Possibility of Introducing Green Manuring in Areca Gardens of North Kanara.

(V. S. Sonde, B. Sc., (Agri.), Sirsi, North Kanara, Bombay).

Present practice of manuring.

Areca garden in Kanara receives the leafmould manure in alternate years, with the dry loppings of fresh leaves covered over the leaf mould manure at the base of the palm. For this purpose every gardener has divided his Betta-Forest into two parts and he cuts the leaves with twigs from each section in alternate years. These leaves with twigs cut from 4½ acres of Betta-forest, for each acre of garden, can satisfy only the need of covering of leafmould manure spread at the base of the palm. In certain areas, even that cannot be satisfied properly because of insufficient leafy growth in hilly bettas. So, to prepare leafmold manure to the extent of thirty cart loads per acre, it is a problem with gardeners. It is satisfied to some extent from the under growths in the Bettas. The need of leagy growth in composting is a well known fact and the covering of dry leaf with twigs cut specially for the purpose, is an essential part of the operation.

The cultivators give special importance to the leaves that they are using for composting as well as for covering the compost manure. It is because of the special properties of the leaves from the trees that is used.

The relative manurial value of the leaves of a number of trees had been investigated by Mollison and that has proved best, the reason why the cultivator goes in for the costly elaborate preparation and use of leaf compost manure to be cover over by the fresh leaf twigs cut from the trees.

Investigation by Mollison and the analysis of the same by Leather, of the leaves of a number of trees will speak for itself for the peculiar properties.

ANALYSIS OF THE LEAVES INVESTIGATED BY T. LEATHER.

In Percentage.

	Tannin.	Acidity.	Dry matter in leaves	Organic matter	Nitrogen	Mineral matter	Silica	Potash	Phosphoric acid.	Ammonia produced after one week.	Ammonia produced after three weeks.
First Class Leaves.											
1. Honal, Terminalia paniculata.	10·6	13·0	24·9	94·1	1·7	5·9	0·48	1·6	0·4	0·102	0·124
2. Matti, Terminalia tomentosa.	8·1	21·0	18·1	92·3	1·3	7·7	0·38	0·8	0·4	0·110	0·113
3. Karekai, Strychnosnuxvomica.	0·6	14·3			2·07					0·100	0·101
4. Rakta-honne, Pterocarpus-marsupium.	1·4	9·6	21·2	92·5	2·5	7·5	0·57	2·5	0·4	0·160	0·225
5. Hirda, Terminalia chebula.	11·0	29·8	22·2	94·1	1·8	5·9	0·18	1·35	0·35	0·060	0·077
6. Jambhi, Xylia dolabriformis.	2·8	22·4	26·7	94·5	2·3	5·5	0·41	1·61	0·3	0·348	0·407
7. Kaval, Careya arbosea.	20·6	31·8	19·3	93·2	1·6	6·8	0·41	2·2	0·4	0·104	0·116
8. Nirala, Eugenia jambolana.	6·6	20·1			1·11					0·046	0·053
9. Nellikai, Phyllanthus emblica.	7·6	39·9			1·39					0·125	0·116
Second Class Leaves.											
1. Tari, Terminalia belerica.	9·8	19·8			1·66					0·266	0·301
2. Mash, Cinamon-tamala.	0·5	8·1			1·15					0·024	0·024
3. Archakal, Olia diolica.	0·5	8·1			1·14					0·036	0·042
4. Sakke, Aporosa lindleyana.	0·5	8·6			1·14					0·089	0·095
5. Nandi, Lagerstraemia-microsarpa.	8·2	19·6			1·05					0·070	0·090
6. Kangal, Dillenia pentagynaa.	4·3	10·6	12·9	90·5	1·34	9·5	0·62	3·2	0·5	0·136	0·136
Third Class Leaves.											
1. Nirukulu, Buchanania latifolia	3·0	22·4			1·55					0·049	0·077
2. Ippi, Bassia latifolia.	3·5	12·1	21·0	93·3	2·00	6·7	0·48	2·0	0·5	0·077	0·084
Average figures.											
1st Class leaves.				93·4	1·9	6·6	0·4	1·7	0·4		0·148
2nd Class leaves.				90·5	1·9	9·5	0·6	3·2	0·5		0·115
3rd Class leaves.				93·3	2·0	6·7	0·5	2·0	0·5		0·080

The above table clearly shows us the relative values given to the various leaves by the cultivators. The leaves which are considered best for manurial purposes are found to be superior when (1) the nitrogen content, (2) the ready availability of nitrogen, (3) the astringency as indicated by the percentage of tannin and (4) the acidity are taken into account. The leaves preferred of higher value indicates that it is not merely leafmold that is needed, but, leafmold of a peculiar type. The peculiarity is not simply connected with its value as a source of plant food, but includes other characteristics which at present cannot be obtained from other sources.

The dry leaf twigs with leafmold apart from giving manurial effects, it acts as a protector of leafmold manure from surface wash and from heavy rainfall in monsoon. Thus, it prevents to break the force of heavy downpour in rain and afterwards allow the rainfall to percolate through the manure to feed the plants.

The astringency and acidity of leaves are considered specially valuable, because, the manure produced from them destroys insects and grubs which would be harmful to the plants in the garden.

The fertility of soil depends upon its tilth, or physical condition, moisture content, bacterial activity and the chemical composition. Cultivators attempt to influence these by suitable cultural operations. For, Kanara gardeners the fresh leaves received from betta forest has been the only solace in fulfilling the above needs.

The soil that is renewed once in eight years from the hill cutting is prepared best for plant life by the humus prepared in the elaborate process of manuring. If it was not, the above type of judicious manuring with leafmold compost of high manurial value, these soils of poor organic matter would have left the rich age-old gardens completely depleted of plant nutrients and to a state of desert and barrenness. The shrewdness experience and zeal of garden cultivators in adopting the above practice of manuring has lead us today to find the gardens in such state of health and vigour.

Other methods of manuring followed.

Apart from the dose of leafmold manure and the dry leaf twigs covered in alternate years, the other methods along with above routine cultivation followed are (1) the spreading of dead leaves called "Daraku" locally and (2) the green leaves with twigs spreading in rains. These methods are followed in specific cases.

Dead leaves (Daraku).

It is never used as a direct manure in well established gardens. It is used in the preliminary stage of establishment of a garden to check the enormous growth of weeds in the Bharans and thus side by side add and prepare the soil for the ensuing plantation. This is particularly done from the first year of plantation to its fourth or fifth year by which the area becomes well developed in weed control and spread of banana leaves from the banana crop planted takes place, acting as a shade barrier to the land below in checking weeds and protecting areca and cardamom seedlings. The other use of dead leaves is in the manure pit. This is a common practice in all gardens. Dead leaves are available in abundance in betta-forest in summer. By then, the manuring of the gardens by leafmold manure is over and the empty manure pit is filled with dead leaves to its depth of 12 to 15 feet, on which latter alternate layers of green leaves and cow dung is built up. In an established garden the use of dead leaves has the following harmful effects:—(1) the roots of the palm come out of the soil.; (2) Moisture content in the soil is reduced to a great extent and thereby deficiency of the same is felt for the crops of cardamoms and pepper. (3) Pepper crop does not favour well in its application; and (4) Insect trouble to the root zone of the palm is increased.

It is suggested that the requirement of garden cultivators could be met if they gathered dead leaves from the forests to supplement the supply of green leaves and twigs from assigned bettas. It is also urged that the dead leaves would not be less valuable for manure than green leaves and twigs. Leaves as they become prepected dry up and become fibrous and a good deal of the plant food, both mineral and organic which they contained when green and growing, passes from them and is utilised in increasing the size of the stem or branches and in perfecting the fruit. There can be no question at all, therefore, as regards the superiority for manurial purposes of the green leaves of a particular

tree over the dead leaves from the same tree. The dead leaves fall, moreover at a particular season and have to be collected at that particular season, otherwise they soon become incorporated with the soil and disappear. Even the leafmold prepared only from the dead leaves have inferior manurial value to the manure now used.

Green manuring with fresh leaves.

Although no green manure crop is tried in Kanara Areca Gardens, which has its own drawbacks in accepting it in the cultivation, green manuring from the fresh leaves of trees is a common practice in rains and people have realised the effects of the same in building soil fertility, immediate effects on the health of palms and the yield. The process is done in the part of the garden in rains, which was not manured in the season before in the month of July-August which will help in forming carbonic acid and nitrates. Plant nutrients are made available from the inorganic nutrients contained in the new soil of hill-cutting used for the garden. It is to the experience of the cultivators that early maturity of the crop is benefitted by this procedure. But it has not been possible for all cultivators to adopt it as a regular operation in alternate years because of non-availability of leafy growth in bettas, the leaves of which are purely reserved for manurial purposes in January.

This procedure of green manuring does bad effects for the pepper vines trained on areca palm because of the rottening of leaves in the Bharans. So, maximum care is taken to leave space round each palm while spreading green leaves with twigs.

Possibility of growing green manure crop in situ.

It is now an established fact that manuring with a green manurial crop grown in situ bestows many beneficial effects on the soil and thereby enhances soil fertility and crop production. This system of manuring has become fairly popular in the cultivation of crops like rice, sugarcane, coconut and wheat. With regard to arecanut however, the growers cannot take advantages of the benefits of this technique, particularly at the place where arecanut is grown with other subsidiary crops like cardamoms, pepper and banana as it is in the upper ghat region of North Kanara.

Apart from the subsidiary crops, the complex type of cultivation required for the crop, the natural environment, the soil and the benefits got from the leaves of the particular trees of the area after age-old experience, do not favour the method of green manuring by growing same in situ. This can be understood from the detailed study of each operation in cultivation and examination of the same, a part of which has been made above.

In the mixed cropping area to grow a crop for green manuring purposes is impossible. For the sake of checking soil erosion the whole area in the garden is kept covered either with leaves or grass (karad) and banana leaves before the starting of monsoon. Cardamom and pepper the delicate subsidiary crops do not permit any operation of digging ect., to be done frequently in the garden. It is a common experience to find that all the four crops of the garden viz., Arecanut, Pepper, Cardamoms and Bananas, do not do well when all are tried do be balanced in an acre of garden. Banana does harmful effects in the growth of cardamoms and pepper. Pepper crop does not do good in the presence of a good crop of cardamoms. It is also worth to note that the only operation of digging (Agate) done once in eight years, does enormous harm to the crops of cardamoms and pepper. To some years it was a practice to remove cardamom bushes from their established places every eighth year before soil renewal work was to start, as by then most of the cardamom bushes used to get diseased by katte. And in such case once in eighth year prior to the process of digging, a benefit from the green manure crop could have been tried by accepting this operation at least once in eight years. But, the control of virus disease of Katte on cordamoms has brought to us to find the cardamom bushes to survive well and be asset even on eighth year and the years to follow. So, these days, we find gardeners leaving a foot space round each bush and also the base of the palm on which is trained pepper vines, so as not to harm while the digging is done once in eight years in soil renewal process.

Recommendation.

Although artificial manures both organic and inorganic have been tried on most of the cultivated crops and a definite data

showing the effects of the same in different soils is available today, it is strange to find that no data is available regarding its effect on arecanut. We find the use of groundnut cake, fish meal, Guano and superphosphate made use of by some progressive cultivators in South Kanara, Cochin and South Malabar. But, no definite data useful for the common cultivator is there, today to introduce the same in his operations. Even the work of experiments with artificial manures for arecanut at the Martur Farm (now defunct) of Govt. of Mysore from 1920 to 1936 could not give definite advice to the cultivators regarding the additional requirements of N, P, K and other elements in course of cultivation of the palm.

So, the policy now seems to be of the Govt. of Bombay through its Forest Department to take back the assigned betta forests from the garden cultivators. Asking them to go in for the green manuring technique by growing the crops like Sesbania in situ would be premature and be a tragedy in itself, if a drastic step is taken in over interest and enthusiasm of the protection of the forest, when no definite data regarding the requirement of the crop is known and at the same time growing Sesbania with crops of pepper and cardamoms in the garden is impossible.

The leafmold manure that is given in alternate years is not sufficient for the crop for its growth and production for two years. The cultivator is awaiting to introduce an artificial manure found effective and harmless to introduce the same in alternate years that is the year palms did not receive the manure. This the cultivator thinks whould benefit him in balancing in getting steady and better yields. These years, we are finding alternate good yields in the year following manuring of leafmold manure. Introduction of artificial manures, we may hope, would help in satisfying to some extent the deficit production of the country and at the same time reducing the cost of production.

To fulfil the above needs of cultivation, a regional areca station is required here to conduct research on agronomic, manurial and economic problems facing the cultivators today, where the problem now put forth by the Forest Dept. in advocating to go in for green manuring of the crops like Sesbania in situ can be very well tried and results can be known.

Today, we find artificial manures like Ammonium sulphate, Superphosphate being used without considering the effects those would leave on the soil in future, particularly in our tract of heavy rainfall and the soil being acidic. So, as an alternate method, common cultivators, I hope, can go in today for the composting method of application wherein phosphatic fertilisers like Steamed Bonemeal, Raw Bonemeal, Rock phosphate, Single superphosphate, Ammonium Phosphate, Tripple Super Phosphate, Basic Slag, Bird Guano, Meatmeal and Fishmeal be used by composting the same with alternate layers of green leaves with twigs and cow dung. It is important to note that the use of it made at the Indian Agricultural Research Institute, New Delhi, has shown that the crop takes up a great quantity of phosphorous and yields higher than when phosphate is applied with an equal quantity of cattle shed compost, without fermenting together. This does not leave any harmful effects on the soil for which cultivators are afraid of.

References.

1. J. W. Mollison (1900) Cultivation of betel palm, Cardamom and Pepper in Kanara District of Bombay Presidency with notes on manures used in specific gardens. Agri. Dept. Bulletin No. 20 (1900).
2. D. L. Sahasrabuddhe (1917) The Spice Garden of Sirsi in Kanara. Bulletin No. 83 of 1917 of Dept. of Agriculture. Bombay.
3. P. A. Shrinivasan (1951). Manuring in betelnut gardens. Indian Central Arecanut Committee, Calicut II No. 8.
4. T. J. John (1952) Green Manuring in Areca Gardens. Indian Central Arecanut Committee, Calicut, III No. 1.
5. .....(1954) Compost Your Phosphatic fertilisers. The Indian Farming. Nov. 1954 Vol. IV No. 8.

Grading of Sliced and Boiled Arecanuts.

(Continued)

ARAKALGUD MARKET.

Arakalgud in Hassan District is another arecanut growing region in Mysore State. Here tender raw nuts are harvested for the preparation of both single cut nuts called 'Battalu (cup shaped) and 'Chur' nuts (cut into eight or ten pieces breadth-wise and lengthwise). A very small percentage of whole boiled nuts are also sometimes prepared when the rates for whole boiled nuts are found to be quite advantageous. The 'Chur' nuts prepared here are the most popular ones which are intended for catering to the demands of the Bangalore and Mysore markets. The method of processing etc. are the same as in cut boiled and whole boiled nuts. Grading as a technique has not developed in this market. The producer himself grades the nuts on the basis of their shape and stage of maturity. The system in vogue here is that many of the growers do not undertake harvesting and processing of arecanuts. They sell away the standing corps for cash to petty merchants called 'chenidars'. It is these 'chenidars' that harvest the crop and process the nuts. After husking the nuts, over-matured ones are picked out from the lot and are cut and boiled separately. No grading is done after boiling and drying. After drying the two lots separately, they are sold in as such in Arakalgud market. The merchants who buy these lots do some grading in their godowns as (1) "Hasagarju", (2) "Hasa", (3) "Bette", (4) "Gotu" etc. on the basis of their maturity. The only distinguishing feature between one grade and another is their stage of maturity.

"Hasagarju". These are prepared out of very tender (undermatured) nuts. A shall percentage of nuts in a bunch will be undermature and the nuts prepared out of this, are called "Hasagarju" nuts. Sometimes while harvesting it may be possible to pluck a few immature bunches also. Like the 'Nuli' nuts of Shimoga market, these can easily be made out by their shrivelled shape and brittleness.

"Hasan Battu". These are tender single cut nuts cut into two equal bits breadthwise. They are called "Battalu" because of their cup shape appearance. These resemble the Shimoga "Deshavar Hasa" nuts. But they are considered in the market as being inferior to Shimoga Deshavar nuts, as they do not possess that fine lustrous colour and crispness, They are marketted in the same places as Shimoga Deshavaram nuts.

"Hasan Chur". These are prepared out of tender nuts cut into nine to twelve bits lengthwise. The bigger nuts are cut into twelve bits while the normal sized ones are cut into nine pieces only. This is the most popular variety prepared in this market.

"Bette Chur". These are prepared out of more matured nuts. In shape etc. this resembles the Hasan Chur nuts. The only distinguishing feature between Hasan Chur and Bette Chur nuts is their stage of maturity. Hasan Chur being prepared from tender nuts are more brittle and crisp while Bette Chur nuts are softer and woody in taste. Being cheaper in value they cater to the demands of the poorer people.

"Gotu Chur". As already described earlier, over-matured raw nuts are picked out from the heap, of husked nuts and separately cut, boiled and dried. These nuts can easily be made out from their epicarp still encircling the nut. They are hard to bite. They are not brittle or like Hasan Chur.

Standard packing. Arecanuts are packed in single or double gunny bags depending upon the mode of transport used. If railway transport is resorted to, double gunny bags are used. Each bag contains five maunds of 28 lbs. each.

The proportion of Hasa or superior quality nuts to medium (Bette) and inferior (Gotu) quality nuts when harvested under favourable conditions is said to be roughly 65:25:10 respectively.

KYATHASANDRA AND TUMKUR MARKETS.

Arecanut cultivation is done in Tumkur District which is a Maidan region under irrigated conditions. The method of processing in this region is the same as in the Malnad regions of Mysore State. The most popular variety prepared in this region is Chur, i.e., tender

nuts cut into small bits. They are cut into 16, 24, 32 and 48 bits both lengthwise and breadthwise. Grading is done on the basis of maturity before the nuts are cut and boiled. Harvesting is done at frequent intervals of three to four weeks so that the nuts may not overmature. Hence it is said that the percentage of Bette nuts prepared in this region is very small compared to other regions. No grading is done after the nuts are boiled and dried. Overmatured nuts, if any, are picked out from the raw nuts after they are husked and separately cut and boiled. The following are the important grades available in this region.

KYATHASANDRA MARKET.

'Podi'. These are tender (just matured) nuts cut into small bits both length and breadthwise. They have a triangular shape. As already mentioned, grading has not developed as a technique in this market with the result that even slightly overmatured nuts are mixed with tender boiled Chur nuts.

'Kesari Chur'. These are prepared out of tender nuts which are cut into thin bits lengthwise. It requires some expert labour to cut into such thin bits. Each nut is said to be cut into 32 to 48 bits lengthwise. It is very brittle and its brightness and crispness are its quality determining factors.

'Sanna Chur'. This is prepared in the same way as 'Kesarichur' but not cut into such thin bits. Each nut is cut into about 16 to 20 bits lengthwise. Each bit is therefore thicker than Kesarichur.

'Rasi Chur'. These are slightly thicker than Sannachur as the number of cuttings is less than it is in Sannachur. Even slightly overmatured nuts are used in the Preparation of this variety. The size of each bit and its overmaturity are the two distinguishing features or Rasichur.

'Arebagadi'. Overmatured nuts are used in the preparation of this variety. They resemble chur nuts in appearance. While 'Hasachur' nuts are prepared out of tender and just matured nuts, Arebagadi is prepared out of overmatured nuts. There is no uniformity in the number of cuttings as it varies from 8 to 12.

TUMKUR MARKET.

'Podi' (Modagattalu). The method of preparation of nuts for Tumkur market is not very different from the method in the preparation of nuts for Kyathasandra market. This is a mixture of Chur (cut into both length and breadthwise) nuts prepared out of both tender and overmatured nuts. Since the nuts are artificially dried over fire owing to monsoon conditions they have a darkish appearance and are therefore inferior in quality. Its distinguishing features are its dark colour and mixture of overmatured nuts.

'Podi Hassan'. Unlike Podi (Modagattalu) described above, this has a reddish bright appearance and is prepared out of just matured nuts. In view of its bright colour and apt maturity it is considered to be superior in quality.

Chur. This resembles the Rasichur mentioned above. A small percentage of slightly overmatured nuts are also mixed in this grade, which go to show that grading has not developed here as a technique as in Shimoga and Sirsi markets.

'Hasan Chur'. This resembles Sannachur nuts of Kyathasandra market. There is also a very small percentage of overgrown nuts. It has a bright chocolate colour.

'Bette Chur'. These are prepared out of overmatured nuts. They are rougher and have a leathery taste. They are not as brittle as Chur nuts, being overmatured. While the Hasa Chur prepared out of tender nuts melt very soon these remain in the mouth for a longer time. Being inferior in quality they are cheaper in price and cater to the demands of poorer consumers.

The markets for all the above mentioned nuts are Kolar, Bangalore, Mysore and Tumkur Districts in Mysore State. A small quantity is also exported to the neighbouring market outside Mysore State in Anantapur District. As already mentioned, grading has not developed in these markets and overmatured inferior nuts are generally mixed with superior tender nuts.

Packing. The nuts are packed in gunny bags and each bag contains about 132 lbs. to 140 lbs.

BANGALORE MARKET.

Bangalore is a distributing market of considerable importance for arecanut in Mysore State. Large quantities of "Chur" arecanuts produced in Malabar and Travancore-Cochin State come to this market for sale. The single cut boiled nut, especially "Rajalu"

produced in Mysore State also come to this market. It is said that the arecanut produced in Malabar and Travancore-Cochin State being lighter than those produced within the Mysore State, they have a better demand in Bangalore market. No garding of arecanut is undertaken in this market. The merchants in Bangalore generally handle the goods on commission basis. The purchasers are retail dealers in and around Bangalore. The consignors who send arecanuts to this market are petty merchants or curers who have purchased either directly or indirectly from the growers. As large quantities of arecanut produced in Malabar and Travancore-Cochin State come to this market for sale, samples of these nuts have been collected. The following gives a brief description of the samples in this market.

"*Chalakkudi Vellavi Edachur*". These are tender boiled nuts cut into about 8 to 10 pieces lengthwise. They are dried on fire. Owing to their tenderness they are very brittle and break easily.

"*Pazhanji Kali Podi*". Tender raw arecanuts are cut lengthwise first and then cut breadthwise. They have a tringular shape. About 16 to 20 bits are made in a nut. They are then boiled and dried in sun. While drying, Kali solution is mixed, (Kali is concentrated extract got after boiling the nuts), so as to give it a thin coating of dark brown colour.

"*Vellavi Podi*". The cutting of the nut is the same as Pazhanji Kali Podi. While Kali Podi is coloured by giving it a thin coating of Kali solution while drying in sun, Vellavi Podi is dried on fire like Vellavi Edachur, without giving any such colouring. Besides, in Kali Podi, there will be a small percentage of slightly overmatured nuts also, which owing to mixing of Kali solution do not look conspicuous. As Kali Podi is mixed with Kali solution and contains a small percentage of overgrown nuts it is heavier than Vellavi Podi, and is inferior in quality.

"*Tirur Vellavichur*". The cutting etc. is similar to Chalakkudi Vellavi Edachur. But in this a small percentage of overgrown nuts are allowed to remain in the bulk as a result of which it is considered inferior in quality. The method of preparation etc. are said to be the same as Vellavi Edachur.

"*Pazhanji Vellavi Edachur*". This is inferior to Tirur Vellavi Chur as there is a greater percentage of overmatured nuts. The cutting and the method of preparation etc. are the same as it is for Vellavi Chur nuts. This is also not coloured.

"*Pazhanji Payachur*". This is similar to Vellavi Chur and Pazhanji Edachur in cutting etc. But the nuts after they are cut are boiled and given a thick coating of Kali colour. A large percentage of slightly overmatured nuts are also allowed to remain in the bulk. Owing to thick coating of Kali colour, it has a very bright chocolate colour.

"*Pazhanji Mukkalu Chur*". Tender raw nuts are cut into six pieces lengthwise. They are bigger in size than Payachur. They are then boiled, coloured with Kali solution and dried in the sun. They also contain a small percentage of overgrown nuts.

"*Alwaye Mukkaluchur*". Tender raw nuts are cut into six to eight pieces lengthwise and boiled and dried on fire (smoke drying). The nuts are also given a coating of Kali solution before drying. Only tender nuts are used in the preparation of this variety. Owing perhaps to the soil conditions around Alwaye, these nuts get a fine lustrous colour. No overmatured nuts are mixed. They are lighter in weight than other nuts similarly prepared and are considered to be superior.

"*Calicut Mukkalu Chur*". This is prepared in certain portions around Calicut in Malabar District like Feroke, Nanmanda, Balussery, Quilandy, Kunnamangalam etc. Tender raw nuts are cut into 6 to 8 pieces lengthwise and boiled and dried on fire. The nuts used in the preparation of this veriety are said to be slightly more matured than Alwaye Mukkalu Chur. The nuts are also given a coating of Kali solution while drying them. This is said to be inferior in quality to Alwaye Mukkalu Chur, in view of the fact that the nuts used are slightly more matured. It is heavier than Alwaye Mukkalu Chur.

'*Iylon*'. Raw nuts of both tender and slightly overmatured stage are cut into thin slices breadthwise and dried in sun. Bangalore is not an important market for this variety. This is more popular in Madura, Panruti, Virudhunagar etc. in the South.

'*Kuthuparamba Chur*'. This is a sample of arecanut prepared in North Malabar. This may be called an unassorted variety where one can see neither uniformity in shape nor in the stage of maturity of the nuts used. Nuts are cut

both lengthwise and breadthwise into about ten bits and boiled and dried. A fair percentage of overmatured nuts are also found in the bulk.

'*Birur Chur*' (Mysore State). Tender raw nuts are cut into about 8 to 10 pieces lengthwise like the Hasa Chur nuts as described earlier and boiled and dried. Owing to soil conditions and expertness of preparation Birur Chur are famous and known for their superior quality. They are generally sold in the Bangalore market at a premium.

'*Amruthur Deshavaram*' (*Batalu*). These nuts are prepared in the maidan parts of Mysore State in Amruthur firka in Tumkur District. They are single cut nuts simulating the Deshavaram nuts produced in the Malnad parts of Shimoga and Chikmagalur Districts. Unlike the practice prevailing in Shimoga where they are graded into several sub-grades like Nuli, Rajalu, Pheeton, Ventibette and etc. no grading is done in regard to this. They are generally sold as such in bulk after picking out the overmatured nuts like Bette Gotu.

Standard packing The Chur arecanuts coming from Malabar and Travancore-Cochin State are first packed in date palm mats which are again put in a gunny bag. The standard weight of each bundle is said to be 100 lbs. net or 104 lbs. inclusive of the weight of the gunny bag. The single cut nuts coming from Shimoga side are packed in double gunny bags and the standard net weight is 132 lbs. The Chur nuts of Birur weight 120 lbs. net. No grading is done in Bangalore market and the nuts are sold in the same form as they come, to the retail merchants.

METTUPALAYAM.

Mettupalayam in Coimbatore District has about 1,500 acres of land under arecanut cultivation. The garden lands are situated about four miles from Mettupalayam town under the foothills of Nilgiris. They are mostly irrigated by the Kallar and Coonoor rivers by natural gravitational force. Gardens situated away from these two rivers are maintained by irrigation from wells.

Owing to high prices that prevailed for Chali (sundried whole arecanuts) during the past three years and also owing to high cost of technical labour required for processing the nuts, it is understood that many of the growers have begun to prepare Chali nuts now. Some of the educated and enlightened growers have established direct contact with some of the North Indian markets like Delhi for sale of their produce. However sliced boiled nuts are also being prepared in large quantities in this region. The most important grades among sliced boiled nuts prepared here are (1) 'Thoppakuranal' (2) 'Kalipak' and (3) 'Kottaipak'. For preparation of Kalipak, tender nuts are harvested, husked and cut into two equal bits breadthwise and boiled and dried like the Deshavaram nuts that come to the Shimoga market. Sometimes they are also given a thin coating of Kali Solution to make them look more attractive. Kalipak is the most common variety prepared in this region. In the process of cutting the raw nuts, overmatured nuts are sorted out and boiled and dried separately. The following gives a brief description of the three main varieties of sliced boiled nuts prepared here.

(1) '*Thoppakuranai*'. These are prepared out of very tender or immature nuts. Owing to immaturity of the nuts, the raw nuts cannot be separated from the husk. While attempting to remove the husk the nuts are broken in different shapes. They are therefore boiled as they are with husk in tact. The nuts are scooped out from the husk after boiling. They are of irregular shape and being very tender, are very brittle. They resemble the 'Nuli' that cometo the Shimoga market.

(2) '*Kalipak*'. The preparation of 'Kalipak' has already been described. Just matured nuts are used in the preparation of Kalipak. The method of preparation is the same as adopted in the Malnad of Mysore State in the preparation of Deshavaram nuts (single cut boiled nuts). The nuts in this region appear to be smaller in size

(3) '*Kottaipak*'. As described earlier, overmatured nuts are picked out from the heap of raw nuts during the process of cutting. They are sliced into four or five round slices and boiled and dried separately. Owing to overmaturity they are harder than Kalipak and have a woody taste. Kottaipak can easily be made out from Kalipak as the latter have a somewhat shrivelled appearance after boiling and drying them. It is said that as harvesting is done at regular intervals and much attention is bestowed on the selection

The following have been extracted from a work known as *"Brihat Sarangadhara"*

1. Mixed with earth variety of fragrant flowers; use the mixture as manure to a tree of scentless flowers; pour at the roots the juice of Dhava and Khadira; smear over the tree sandal paste, and expore the tree to smoke of ghee; its scentless flowers will become fragrant.

2. Use as manure to the roots of the cotton the leaves of barley sesamum and of turmeric, and pour at the roots water prepared with a mixture of these leaves. The plants will yield cotton throughout the year bright and red as fire.

3. Mix with water the juice of the sugarcane and the root of the Vidari; heat the mixture and rub it over the roots of any flowering tree; and pour at the roots the juice of the sugarcane. The trees will yield flowers at unusual seasons.

4. Make cakes of a mixture of Madhuyashti, Sugar, Koshta and Madhupushpa, and cover with the cakes the roots of furit trees and throw earth over the parts. The fruits will grow without bones.

5. Kill a goat and immediately tie its shoulder skin over the branches of fruit trees. The fruits will remain unripe.

6. Pound in a stone mortar the bone of the monkey mixed with the juice of the elephant in the rut, rub the preparation over the roots of fruit trees. The fruits will remain unripe for a year.

7. Tie over the branches of fruit trees the skin of an animal and grass; rub over the branches a mixture of Vidanga, honey and milk, pour at the roots a mixture of milk and water. The ripe fruits will stick to the tree for a very long time.

8. Mix with milk the serum of marrow (of flesh) of the fish and the hog as well as the flesh of the two creatures. Soak any seed in the mixture, dry it and expose it to the smoke of ghee. The seed when sown will grow in an unusual and wonderfull manner.

9 If the seed of the pomegranate be soaked in the blood of the cock 21 times dried and each time, it will, the moment it is put into the ground, grow and bear fruits in a most wonderful manner.

10. Thrust into the root of the Kumuda (the esculent white water lily) a variety of colours, soak the root in urine, rub over it ghee and honey, and then sow it in the soil, it will grow and bear flowers of the several colours originally put into the root.

11. Mix together the buffalo's dung and urine; rub the mixture over the seed of the fruit of the Kumuda for seven days drying the seed each time. If the seed be then sown into the ground, it will grow as a Karavira plant.

12. Soak the seed of the pumpkin or of the brinjal, or of the serpant cucumber and the like in the serum or marrow (of flesh) of the fish or hog and dry the seed. If the seed be then sown in good soil and watered it will bear fruits of very large size and without bones.

13. Soak the seed of the castor oil plant in the blood and serum (of flesh) of the hog and dry it; soak it again the oil of the Ankola and dry it. If the seed be now sown in the soil, it will grow and bear the fruits of Karavalli.

14. Use as manure to the root of the plantain the excrement of the ass and the horse; burn dry twigs over the root; the plantain will then yield fruits as big as the trunk of the elephant, and the fruits will appear as if to tear out the tree.

15. If the root of the plantain be drenched with the blood or serum (of flesh) of the hog or with the decoction of the fruit of the Ankola, it will bear pomegranate fruits.

16. If the Rambha (plantain) be watered with a liquid mixture consisting of the flesh, serum and blood of man and the powdered tooth of the elephant and water, the tree will yield mango fruits.

17. Mix together the shining decoction of the fruits of Ankola, human flesh, the milk of the goat and oil cakes. Use the mixture as manure to the seed of the mango put into the soil. The seed will grow out as a spreading creeper like the vine and will bear fruits at all times.

18. Form a mixture of Krimiripu, of barley, of Madhuyashti and of jaggery; rub it over any tree yielding bitter fruit, after slitghtly grazing out the bark with a knife, pour at the root a mixture of milk and water; the tree will henceforth yield sweet fruits.

19. Soak any seed many times in human flesh and in the oil of the Ankola, drying the seed each time. Take a quantity of earth in the hand, bury the seed in it and pour water over it; the seed will grow that instant.

20. Dig a pit, burn in it the bones and the dung of the cow and the hog; remove the ashes, fill the pit with earth. Plant in it the root of the Moolaka, the root will grow to the size of the pit.

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of bunches of apt maturity there will be a small percentage of (undermatured) 'thoppakuranai' and (overmatured) 'Kottapak' nuts in this region. Garding is done by the curer on the basis of maturity and no garding is generally done during sale at the market.

Markets. The nuts produced in this region are hardly enough to meet the local demand. Large quantities of nuts prepared in Travancore-Cochin State and Malabar come to Coimbatore. However Mettupalayam nuts are sold in Coimbatore, Nilgiris and Salem Districts also.

Indian Council of Agricultural Research

Farm News Release No. 46.

EARLY BLIGHT OF POTATOES

Timely Spraying Recommended

New Delhi: In the plains of northern India, where the bulk of potato is cultivated blight disease makes its appearance from time to time. The disease occurs late in the season so that the early planted main crop is not affected.

Affected plants show brown spots with concentric rings on the leaves. The spots enlarge and merge together, killing the entire leaf. Yields get reduced whenever there is blight disease attack.

Timely spraying with Bordeaux mixture, 'Perenox' or 'Dithane-D-14' has been found to effectively control the disease and is being recommended to all potato growers.

Farm News Release No. 47.

PLANTING CARDAMOMS.

Higher yields with longer Rhizomes

New Delhi: Using longer rhizomes for planting increases cardamom yields, experiments at the Cardamom Research Station at Singampatti have shown.

Planting generally do not use sufficiently long rhizomes for planting.

For the experiments, the planting of mother rhizomes eight inches long was compared with the planting of short ones of an inch in length. With the same care given to both, it was found that where long rhizomes were planted, the crop began bearing about six months earlier and gave an increase in yield of cardamom.

Farm News Release No. 48.

DOUBLE ROWS FOR POTATOES

New system of Planting

New Delhi: Planting pototo tubers at one inch depth from the soil surface in two rows six inches apart on the ridge is getting popular with farmers in the Punjab.

The system, recently evolved, consists of growing two rows of potatoes on ridges 2¼ ft. to 2½ ft. apart, instead of a single row on ridges 1½ ft. to 2 ft. apart as is the practice. The bigger spacing makes cultural practices easier, economises irrigation water and cuts labour costs for interculture and harvest.

After planting the seed tubers in double rows on the ridge, it is recommended that fertilizer is applied in a band in the middle of the rows, an inch deeper than the seed. Similarly, fertilizer is also applied in bands two inches away from each row on the outer sides of the ridge. The seed and the fertilizer are later covered with

xo to three inches of earth taken rom the outer side of the ridge to nake one ridge over the two rows of seed potatoes.

The new system, it is claimed, increases the returns from the potato crop.

Farm News Release No. 49.

VITAMIN-RICH MILK

Giving Shark Liver Oil to Cows

New Delhi: Milch cows and buffaloes produce milk rich in vitamin A, if shark liver oil is included in the daily feed, research has shown.

Cows get vitamin A in the form of carotene through green fodder, To assure that vitamin A rich milk be produced even in the season when green fodder is not available, feeding shark liver oil is recommended.

Cows and buffaloes fed with ten grams of shark liver oil per day per head along with dry roughage during the dry fodder per gave milk rich in vitamin A content, experiment showed. The flavour of the oil was not noticed in the milk produced.

Farm News Release No. 50.

CONTROLLING THE SUGARCANE ROOT BORER

Method of Harvest Helps

New Delhi: The practic of harvesting sugarcane by digging it out has not only been found to add to the total yield, but also found to keep down the root borer attack to a great great extent.

The root borer, a common sugarcane pest, severely damages the cane crop in the early stages. The central shoot dries up and shows a greyish white colour. When damage is serious, the crop is lost.

Where digging out the cane crop is not practicable, the cane should be harvested by cutting it as close to the ground as possible. The stubbles left in the field should be removed and destroyed so as to kill the borer hiding in them.

Wherever the pest is serious, agricultural experts also advise that farmers discontinue raising the ratoon crop.

Farm News Release No. 51.

COMPOST IS A GOOD MANURE

Supplement it with Fertilizers for good Results

New Delhi: Compost, whether produced on the farm or brought in from town depots, is a good organic manure, and is best applied to the soil at the time of preparatory cultivation.

The dose of the manure to be applied to the fields varies with the intensity of cultivation, but, generally, ten to twenty cartloads (one cartload is equal to about 1,000 lb. of manure) are found to be adequate per acre of irrigated land. Where rainfall is between 20 and 50 in., four to eight cartloads per acre have been prescribed, and when it is less than 20 in., two cartlods have been found sufficient.

Compost manure is rich organic matter, but is poor in nitrogen, phosphoric acid and potash. Farmers are advised to supplement it, wherever necessary, with nitrogenous and phosphatic fertilizers.

Where intensively cultivated crops like vegetables, potatoes, rice or sugarcane are grown, it is profitable to use nitrogenous supplements, such as ammonium sulphate or oil cake.

Compost manure supplemented with extra nitrogen, phosphate and potash gives good results for such fruits as banana, citrus and mango.

Farm News Release No. 52.

FEEDING CHICKENS

Protein-rich Food Essential

New Delhi: Proteins are essential for young growing chickens. Poultry specialists point out that unless chickens are fed with protein-rich food they do not make satisfactory growth. As cereals are somewhat deficient in proteins, special foods rich in proteins should be given.

Separated milk or buttermilk solves this problem. If chickens are given either of these in place of water, there would be no need to look for other protein foods. Meat offal (intestines of animals from the slaughter-house) also gives excellent results. The meat offal should be chopped and cooked for an hour before it is fed with the mash.

Feed chickens with ample cut green food every day from one week onwards, and also limestone grit or oyster-shell from two days onwards for getting good results

Self-Sufficiency in Arecanut Aimed.

SECOND FIVE YEAR PLAN PROGRAMME.

India is expected to be self-sufficient in arecanut by 1966–67, it is learnt. In order to achieve this object, a comprehensive programme of work for the intensive cultivation of arecanut has been drawn up for the Second Five Year Plan (1956–61).

The salient features of this programme are:

1. Development of arecanut industry in Andaman & Nicobar Islands.

2 Establishment of a Central Technological Laboratory.

3. Grant of subsidy for wells for irrigating arecanut.

4. Grant of subsidy for co-operative societies.

5. Setting up of Regional Research Stations.

6. Setting up of arecanut nurseries.

7. Grants to Universities and Research Stations for advanced studies on arecanut.

Arecanut is an important cash crop of the country and its present annual production is about 22 lakh maunds, grown mostly in the States of Madras, West Bengal, Assam, Travancore-Cochin and Coorg.

The Indian Central Arecanut Committee, Post Box No. 14, Kozhikode (Calicut), South India, has started an arecanut nursery at Kunnoth in North Malabar. This nursery is in a position to supply about 50,000 good quality arecanut seedlings at two annas each.

The following other steps have also been taken in order to increase the production of arecanut :—

1. With a view to bringing larger areas under arecanut cultivation in India, a reconnaisance survey was conducted by the Indian Central Arecanut Committee in 1954 to gauge the extent of wastelands available in the different States, which can be brought profitably under arecanut cultivation. The possibility of utilizing these lands for arecanut cultivation is being examined.

2. Arecanut nurseries have been established in Assam and West Bengal and in Malabar to raise and distribute quality seedlings to arecanut cultivators.

3. Research Stations have been established in Madras, Mysore, Bombay and Travancore-Cochin to investigate problems of local importance in these States, such as control of arecanut diseases and also conducting manurial and cultural experiments. The Indian Central Arecanut Committee is also establishing a Central Research Station for advanced researches on various problems of arecanut and for co-ordination of the work done in the Regional Research Stations.

4. The establishment of co-operative marketing societies for arecanut is being encouraged in the producing areas so that the growers may be able to get a fair price for their produce.

5. Investigations have also been undertaken to find uses for the arecanut by-products.

6. The existence of an import duty of Re. 1 (recently reduced to 12 annas) per lb. on imported nuts, coupled with the adjustments that are made from time to time regulate imports, has enabled Indian growers to get a fair price for their produce for some time past and this is acting as an incentive to them to produce more arecanuts.

(Agricultural Newsletter issued by the Directorate of Extension Ministry of Food & Agriculture, New Delhi. Vol. 1-No. 5—July 55).

NEWS AND NOTES.

1. When Shri P. A. Gopalakrishnan, I. C. S., Joint Secretary to the Government of India, and President of the Indian Central Arecanut Committee, proceedcd abroad on deputation for about a month from the 24th June 1955, the Government of India appointed Shri K. R. Damle, I. C. S., Vice-President of the Indian Council of Agricultural Research and Ex-Officio Additional Secretary to the Government of India, as the President of this Committee. Now Shri Gopalakrishnan has returned from abroad and has assumed charge as the President of the Committee with effect from 25—7—1955.

2. The Secretary of the Committee visited Ponnani Taluk Arecanut Processing & Marketing

Co-operative Society Ltd., Kumaranellur and also attended the opening function of the market yard for arecanut established by the Malabar Market Committee at Kuttipuram in South Malabar. The market yard was opened by Shri M. Bhaktavatsalam, Minister for Agriculture in Madras State. The Secretary also visited, during July, the arecanut nursery run by the Committee at Kunnoth in North Malabar and the site acquired for the Central Arecanut Research Station at Vittal.

3. Shri K. Shamanna, Co-operative Marketing Officer under the Committee visited some of the important markets in South India and collected samples of different varieties of sliced and boiled arecanut for analysis with a view to drawing up of grade specifications.

MARKET REPORTS

Average Weekly Prices of Arecanut during the month of JULY 1955.
(Price in rupees per standard maund of 82-2/7 lbs.)

1. At SHIMOGA Market in MYSORE STATE.

Name of quality	WEEK ENDING				
	2nd	9th	16th	23rd	30th
	Rs.	Rs.	Rs.	Rs.	Rs.
Pheeton	145 10	145 10	145 10	147 5	148 2
Desavaram	143 3	144 0	144 7	144 13	146 1
Rajalu	137 7	136 10	137 1	138 4	138 11
Vanti Bette	111 2	109 14	109 14	111 2	111 2
Gorabalu	68 11	67 2	67 8	70 12	70 12

II. At BOMBAY Market in BOMBAY STATE.

Name of quality	WEEK ENDING				
	2nd	9th	16th	23rd	30th
	Rs.	Rs.	Rs.	Rs.	Rs.
Mangalore Navi Vachar Best	125 0	130 0	130 0	132 8	125 0
Sirsi Toanchi	225 0	262 8	225 0	222 8	210 0
Sirsi Safed	113 0	120 0	119 0	117 8	112 8
Ceylon Nuts	108 0	108 0	105 0	107 8	105 0
Singapore Nuts	111 8	112 8	107 8	112 8	107 8

III. At CALCUTTA Market in WEST BENGAL STATE.

Name of quality	WEEK ENDING				
	2nd	9th	16th	23rd	30th
	Rs.	Rs.	Rs.	Rs.	Rs.
Sundried (sliced)	100 0	100 0	100 0	100 0	
Ceylon nuts	109 0	109 0	118 0	112 0	
Singapore nuts	107 0	107 0	116 0	108 0	
Penang Nuts	100 0	100 0	110 0	106 0	

IV. In TRAVANCORE—COCHIN STATE.

Name of market	Name of quality	WEEK ENDING				
		2nd	9th	16th	23rd	30th
		Rs.	Rs.	Rs.	Rs.	Rs.
Trichur	Erasal.	166 2	118 11	118 2	135 5	128 [illegible]
	Iylon.	125 7	102 14	102 14	110 12	110 12
	Choor.	146 6	118 11	126 10	130 15	124 4
Alleppey	Assorted.	117 10	110 3	102 14	102 14	95 8
	Garbled.	121 4	117 9	113 14	110 3	102 14

V. In HINDUPUR Market in ANDHRA STATE.

Name of quality	WEEK ENDING			
	1st	8th	15th	22nd
	Rs.	Rs.	Rs.	Rs.
Billa	140 9	143 2		
Churu	130 5	133 11		
Podi	66 14	68 9		

VI. AVERAGE WEEKLY PRICES OF ARECANUT DURING MAY 1955 IN MADRAS STATE.

Name of market	Name of quality	WEEK ENDING			
		7th	14th	21st	28th
		Rs.	Rs.	Rs.	Rs.
Mangalore	Supari New	115 12	115 12	115 12	115 12
	Supari Old	120 7	120 7	120 7	No stock
	Koka	N. Q.	N. Q.	N. Q.	N. Q.
Madras	Singapore Nuts	115 3	115 3	115 3	115 3
	Colombo nuts	115 3	115 3	115 3	115 3
Palghat	Choor	171 2	171 2	171 2	171 2
	Choorkottai	N. Q.	N. Q.	N. Q.	N. Q.
	Iylon	N. Q.	N. Q.	N. Q.	N. Q.
	Iylonkottai	115 3	N. Q.	N. Q.	N. Q.
	Ottavettu	N. Q.	N. Q.	N. Q.	N. Q.
	Ottavettukottai	N. Q.	N. Q.	N. Q.	N. Q.

Report on arrivals of arecanut in the different markets in India during June 1955.

	Name of market.	Quantity.
1.	Shimoga.	777 bags. (1 bag — 132 lbs.)
2.	Mangalore.	440 cwts.
3.	Kozhikode.	800 bags (1 bag — 100 lbs.)

FOREIGN MARKETS.

I. Average weekly prices of arecanut in COLOMBO market in Ceylon during JULY 1955.

(Prices in Indian Rupees per maund of 82-2/7 lbs.)

Name of quality	WEEK ENDING 2nd	9th	16th	23rd	30th
	Rs.	Rs.	Rs.	Rs.	
Whole Arecanuts.					
Average quality	22 1	22 1	22 1	22 1	
Whole No. 5	26 7	26 7	26 7	26 7	
Whole No. 6	24 2	24 4	24 4	24 4	
Whole No. 7	19 2	20 9	19 2	19 2	
Vedial	1 13	1 13	1 13	1 13	
Split Arecanuts.					
1st Grade					
2nd grade					
3rd grade					
Vettai 4 A					
Vettai 4 B					

II. Fortnightly prices of arecanut in SINGAPORE during MAY 1955.

Name of variety :—Split Bukit Batu.

Date	*Price in dollars per picul.*
1—5—1955.	24·00
15—5—1955.	32·00
31—5—1955.	29·00

(1 picul = 133 ⅓ lbs. and 1 dollar = 1·54 Indian Rupees)

III. Malayan Import and export of arecanut during the month of JANUARY 1955.

During January 1955, 1027 tons of arecanut valued at 2,65,818 Malayan dollars were imported into Malaya of which imports from Indonesia accounted for 1024 tons valued at 2,51,204 dollars and Malaya's exports of arecanuts during the same month were as follows :—

	Quantity (tons)	Value (Malayan dollars)
(a) to India	2,380	9,39,126
(b) to Indo-China	358	2,16,051

Average weekly wholesale prices of arecanut in EAST PAKISTAN during March, April and May 1955.

Week ending date.	Price per maund in Indian Rupees at Dacca.	Narayanganj.
5—3—1955	93 10	87 13
12—3—1955	92 3	72 0
19—3—1955	92 3	79 3
26—3—1955	93 10	86 6
2—4—1955	93 10	86 6
9—4—1955	79 3	86 6
16—4—1955	89 4	86 6
23—4—1955	89 4	86 6
30—4—1955	89 4	86 6
7—5—1955	100 13	86 6
14—5—1955	100 13	86 6
21—5—1955	93 10	87 13
28—5—1955	93 10	87 13

Statement showing quantities of arecanut exported to foreign countries from Bombay port and their value during JUNE 1955.

Destination	Quantity (lbs.)	Value Rs.
Aden	16	3662
A. E. Sudan	1	435
Fiji Islands	3	566
Ceylon	1	153
Kenya	66	17841
Mozambique	12	2218
Seychelles	1	186
Rhodesia South	4	1316
Rhodesia North	2	535
Saudi Arabia	20	5319
Singapore	22	4265
Tanganika	5	1131
United States of America	1	105
Total	154	37,699

Statement showing the quantities of arecanut (betelnut) imported into different ports in India and their value during the month of JUNE 1955.

Ports to which imported	Places from which imported — CEYLON. Quantity (cwts)	Value (Rs.)	SINGAPORE. Quantity (cwts)	Value (cwts)	FEDERATION OF MALAYA. Quantity (cwts)	Value (Rs.)	TOTAL. Quantity (cwts)	Value (Rs.)
Bombay	10,839	4,85,472	173	7,385	2,004	92,093	13,016	5,84,950
Calcutta	3,444	1,66,587	35,425	15,72,027	1,150	45,745	40,019	17,84,359
Madras	1,541	76,339	5,411	2,51,909	1,735	1,29,574	8,687	4,57,822
Total	15,824	7,28,398	41,009	18,31,321	4,889	2,67,412	61,722	28,27,131

Average fortnightly prices of arecanut during the months of June and July 1955 in Madurai Market.

Fortnight ending	Colombo Arecanuts.			Palai arecanuts.		Trichur arecanuts.		
	Sithanam	Uduthanam	Vettai	Whole	Sithanam	Uduthanam	Vettai	
15—6—55	156 6	117 9	94 0	N. S.	134 5	117 9	105 12	134 15
30—6—55	131 11	115 0	111 10	N. S.	134 5	109 2	99 14	134 15
15—7—55	127 9	114 3	108 12	N. S.	134 5	109 2	99 14	131 11

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SECRETARY,
INDIAN CENTRAL ARECANUT COMMITTEE,
P. B. No. 14, KOZHIKODE—1.

ARECANUT CROP IN INDIAN UNION

By Sri. K. Kunhikannan Nambiar, B. Sc. (ag.)

Secretary, Indian Central Arecanut Committee, Calicut.

Price Re. 1/-, Postage As. 9/- extra.

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—The Mail, Madras.

Printed at the Navodayam Press, Kozhikode and Published by Shri K. Kunhikannan Nambiar, B.Sc. (Ag.) Secretary, Indian Central Arecanut Committee, Kozhikode-1.