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Stem Breaking Disease of Areca Palm.

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CONTENTS.

Consolidated Report with experimental details and result on Stem-breaking Disease of Areca Palm in S. Kanara.	.. 3
Farm News Releases — I. C. A. R.	.. 8
Some New Insects and Mites on Areca Palm in Mysore-II.	.. 9
Sales Tax on Arecanuts — Tribunal's Finding.	.. 10
News & Notes.	.. 12
Review of Prices of Arecanut in different markets.	.. 12

[The Editor is not responsible for the views expressed by contributors.]



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CONSOLIDATED REPORT

WITH EXPERIMENTAL DETAILS AND RESULTS

on Stem-breaking Disease of Areca Palm in South Kanara.

INTRODUCTION

The scheme was conducted under the technical supervision of the Mycologist to the Government of Madras, and the scheme is jointly financed by the Indian Central Arecanut Committee and the Government of Madras.

In many parts of South Kanara, the areca growers were reporting casualties of the palms due to the breakage of the stem in the upper half during heavy winds. In some gardens the incidence of this phenomenon is reported to be high and a large number of bearing trees have been lost. There is a feeling among some of the growers that this has been the result of the continued use of Bordeaux Mixture for the control of koleroga. In order to establish the factors contributing to the occurrence of stem-breaking, it was considered necessary to study the problem in detail so that suitable control measures may be evolved to counteract this. For this purpose, an Arecanut Research Station was started at Vittal partly financed by the Indian Central Arecanut Committee.

OBJECT

The object of the scheme is to investigate the factors leading to the incidence of stem breaking disease of arecanuts in South India and to evolve suitable control measures. A survey of areca gardens in Mysore, South Kanara, North Kanara, Malabar, Travancore and Cochin is to be carried out with various environmental factors like aspect, exposure to sun, spacing, soil etc., if any, on the incidence of stem breaking. It is also intended to conduct experiments to find out the results of various prophylactic treatments, provisions of shade and spraying solutions of minor elements on the incidence of stem breaking.

TECHNICAL PROGRAMME

Survey of arecanut gardens in the Districts of Malabar and South Kanara in Madras, Coorg, Mysore State, Travancore - Cochin and North Kanara in Bombay to make detailed observations of the incidence of the disease in relation to aspect, situation, nature of soil, manurial practices, spacing of trees, exposure to sun, drainage, prevalence of koleroga and methods adopted to control it.

2. Etiology.

Isolation of organisms will be made both from the stem and the roots of the affected palms and pathogenicity trials with these organisms singly and in combination with each other will be carried out. If any of them prove pathogenic detailed study of the morphology and physiology of the organisms will be made.

3. The effect of Bordeaux Mixture on the incidence of disease.

In order to find out if the application of Bordeaux mixture influences the incidence of disease, spraying trials with acid, neutral and alkaline bordeaux mixture will be carried out. The effect of method of application of Bordeaux mixture, viz. mist or jet on the incidence of disease will be observed.

4. The effect of sun scald on the incidence of disease.

Observational studies will be made to see if the disease is associated with sun scald. The following trials will be made.

(1) Protection of the younger portions of the stem by covering the same with leaf sheath.

(2) Painting younger portions of the stem with non-corrosive white paint.

DETAILED REPORT

INVESTIGATIONS

(i) *Survey of areca gardens.* Fifty-six gardens situated in Kasaragod, Puttur, Karkal, Udipi and Coondapur taluks of South Kanara and 27 gardens distributed in North and South Malabar Districts were surveyed during the period under report and detailed information on the incidence of stem breaking in these gardens were gathered. The owners of these gardens stated that the stem breaking disease had been in existence in their gardens long before the use of Bordeaux Mixture for the control of koleroga or fruit rot, came into vogue. Breaking of the stem was preceded by deep cracks and fissures which were located invariably on the Southern and South Western sides of the stem and were found generally on the middle or upper portions of the stems. It was also observed that in some gardens in Malabar and Kasaragod where coconuts and arecanuts were grown together the incidence of stem breaking was comparatively less than in pure arecanut gardens. Further, it may be stated that such fissures have been observed in some gardens at Mettupalayam on the trees growing on the Western or South Western side. Bordeaux mixture has never been used at Mettupalayam. The above information gathered go to show that exposure of the areca palms to the South Westerly sun is the cause of the scorching symptoms.

(ii) *Etiology.* The affected palms in the Station were carefully examined and isolation of organisms present in the drying tissues was made. More than 25 isolates of fungi have been obtained among which are several pathogenic fungi which are known to cause rotting of wood. The more important of them consist of *Ceratostomella paradoxa*; *Canoderma lucidum*; *Lenzites sp*; *Polyporus sp*; *Polystictus sp*; *Nigrospora sp*; *Acrothecium sp*; *Pestalotia palmarum* and *Fusarium sp*; From the roots of affected palms *Fusarium sp*; *Diplodia sp*; *Pythium sp*; and *Ceratostomella paradoxa* have been isolated. Repeated inoculations carried out on the stems of young palms with *Lenzites sp*; *Ceratostomella*

paradoxa; *Ganoderma lucidum* and *Polyporus sp*; have shown that all the four isolates were capable of causing infection to the stems of young palms to varying degrees, when inoculated through wounds. This evidence goes to show that in nature, the several *Basidiomycetous fungi* and *Ceratostomella paradoxa* may gain entry through the damaged tissue on the side affected by sun scorch and be responsible for development of fissures and splits.

Fungi isolated from the roots of wilted palms were inoculated on the roots of young areca palms and they failed to show the symptoms of wilting.

(iii) *Temperature and exposure studies in relation to stem breaking disease.*

(a) Temperature of exposed and un-exposed portions of the trees were recorded for selected trees as also the number of hours of exposure to sun light to see if there is any correlation between temperature and period of exposure and stem-breaking.

DETAILS OF THE EXPERIMENT

Fifteen healthy young palms were selected at random whose stems were exposed to the western sun. Out of these, 5 palms were painted with zinc white, 5 were painted with tar for a length of 3' from the top and the other 5 were left as untreated controls. Temperatures were recorded on the South Western and North Eastern sides of these palms daily at 8 A. M., 11 A. M., 1 P. M., and 3 P. M. The time of exposure of each tree to sun was also recorded. It was observed that temperature on the South Western side (side exposed to the afternoon sun) on the same tree ranged from 71°F. in the morning to 110°F. in the afternoon thereby showing a wide fluctuation of 39°F on the same side during the same day. A difference of upto 18°F between the South Western and North Eastern sides was observed on the same tree at the same time, i. e. at 1 P. M. and 3 P. M., the South Western side showing the highest temperature. The tar coated trees recorded the maximum temperature of 112°F while zinc white coated trees recorded 109°F and control trees 110°F. The maximum temperature was recorded at 1 and 3 P. M. in all cases. There was no appreciable difference between tree to tree regarding the duration of exposure though all the trees are exposed to the western sun to a longer period during the day. The

tar coated surface was completely scorched with disintegration of tissue on the western side only to the entire length of the painted portion, whereas, zinc white painted and control trees remained unaffected. Thus, it was concluded that scorching and splitting of stem is caused by excessive absorption of sun's heat. The above are the observations of the experiment conducted in 1953-54.

The same experiment was repeated in the year 1954-55 but with two more treatments viz. coating the stems of 5 trees with 2% bordeaux mixture added with resin and soda and coating another set of 5 trees with 1% bordeaux mixture. The experimental details and recording of temperature was exactly similar as was done in the previous year. The results more or less agreed with the previous year's findings. It was found that the temperature on the South Western side on the same tree ranged from 77°F in the morning to 109°F in the evening, thereby showing a wide fluctuation of 32°F on the same side, during the course of the day. A difference of upto 17.5°F between South Western and North Eastern sides was observed on the same tree at the same time at 1 and 3 P. M. the South Western side showing the higher temperature. Four trees out of 5 coated with tar developed scorch symptoms and 2 trees out of 5 painted with 2% bordeaux mixture with resin and soda developed mild symptoms of scorch and the rest of the trees continued to be healthy. The damaged surfaces were seen on the South Western aspects of trees only.

The above experiment conducted twice during the period of the report has consistently shown that absorption of sun's heat is the primary cause of stem breaking.

(b) In order to find out if the stem-breaking is correlated with the duration of exposure to sun, 10 healthy trees and 10 trees with patches were selected at random in A block of the garden and the duration of their exposure to sun was recorded daily during the summer months of 1953-54. No appreciable difference was noticed between the healthy trees and the trees with patches regarding their duration of exposure, though all the trees were exposed to the Western sun to a greater number of hours during the day than to the eastern sun. This gives an indication that the healthy trees might be having the inherent capacity to withstand sun scorch.

(c) With the object of finding out if the position of trees in the garden has any bearing on the temperature of the stems and their exposure to sun, 15 trees were selected in A block, 5 in eastern border, 5 in the middle and 5 in the western border. Temperature was recorded on the surface of stem on the exposed and the shaded sides daily at 8 A. M., 11 A. M., 1 P. M. and 3 P. M. and also duration of exposure to sun during the summer months, of 1953-54. It was observed that the intensity of sun's rays as indicated by the surface temperature as well as the duration of exposure was more or less the same for the above trees irrespective of their situation in the garden.

(d) *Correlation of the disease with factors such as girth, height etc. of stem.*

In order to determine the correlation, if any, between incidence of disease and factors such as aspect, growth, status of trunk and height of palms, observation on the dimensions of diseased patches were recorded for 183 trees at 3" intervals. Fifty trees out of these were selected for recording periodical observations to find out the rate and mode of spread of scorch. The observations indicated that there is no correlation between the girth of the stem and the incidence of splits and cracks. On fifty per cent of the trees the splits originate between 15 and 30 feet from the ground level. In about 14% the splits are found below a height of 15 feet and in the rest (i.e. 35%) the incidence of splitting is above 30 feet. The splitting increases more quickly towards the top of the trees than the base, in over sixty percent of the cases, but in others the splitting extends equally in both the directions. During the hot month of May the cracks extended more rapidly.

(4) *Effect of Bordeaux Mixture on the incidence of the disease.*

1. There is a feeling among some of the growers of South Kanara that the continued use of Bordeaux mixture for the control of Koleroga may be responsible for the incidence of stem breaking. In order to find out if it is so, an experiment was carried out by spraying acid (5:2:50), neutral (5:5:50) and alkaline (5:10:50) Bordeaux mixture on 10 feet length of tender portions of the stem of 10 trees each. The experiment was commenced on May, 1953, and every year two sprayings were given during the months of May and July. The cumulative effect of the mixtures after six sprayings is tabulated below:—

S. No.	Strength of Bordeaux Mixture	No. of trees sprayed.	No. of trees affected by sun scorch on the S. W. sides.
1	5 : 2 : 50 (acid)	10	7
2	5 : 5 : 50 (neutral)	10	6
3	5 : 10 : 50 (alkaline)	10	4
4	Control (unsprayed)	10	4

The above observation shows that scorching was prevalent in all series including the unsprayed control series. The experiment was repeated to confirm the results during May 1955 on a fresh set of healthy trees but taking only five trees for each treatment. The trees have received only two sprayings and have not developed any scorch symptoms so far.

Along with these trials the comparative efficacy of different fungicides primarily for the control of koleroga and secondarily to note their effects on stem breaking was under test. The various treatments included were 1% bordeaux mixture, 1% bordeaux mixture plus zinc sulphate, cupravit, wetcol, coppesan, fungimar, shell copper fungicide, perenox, copper sandoz, zinc copper, blitox and Yellow cuprocide along with tying Kotte and thatch grass dipped in Bordeaux mixture and tying alkathene sheets over the bunches.

There was no incidence of Koleroga in the garden during all the three years and hence the relative merits of the different methods and fungicides could not be properly judged. No adverse effects which can be attributed to the fungicides in causing the stem breaking were also noticed. Bunches of all non-experimental trees were protected from koleroga by spraying 1% bordeaux mixture.

5. Experiments for the prevention of sunscald.

In order to protect the tender portions of the stem of the adult tree from scorching effect of sun, they were coated with a covering of either zinc white or lime wash. In another set of trees these portions were covered up by tying areca leaf sheath all round the stem and a set of equal number of trees was left unprotected as control. This experiment has been continuing from November, 1952. The final observations made after 2½ years revealed that sun scorch has occurred on 4 trees out of 10 trees in each of the lime washed leaf sheath tied and control series where as on one tree in

zinc white painted series. The indications are that zinc white alone is of some use in preventing sun scorch.

Zinc white was also tried as a protectant over the stems of young areca palms whose stems were below 6 feet in height, and whose stems were still green. It was found that painting of such palms attracted insect borers which were harmful to the trees. Hence painting of young palms with zinc white was found to be undesirable.

6. Prophylactic treatments

(a) In order to see if further extension of the diseased patch can be prevented by prophylactic fungicidal treatments an experiment was commenced on 30-10-1952 with the following treatments after scooping out the dead tissues and recording the dimensions of the exposed patches.

1. Washing the exposed portion with 1% Potassium Permanganate solution and painting with Bordeaux paste.
2. Washing the exposed portion with 1% Potassium Permanganate solution and painting with cement paste.
3. Washing the exposed portion with 0.1% mercuric chloride solution and painting with Bordeaux paste.
4. Washing the exposed portion with 0.1% mercuric chloride solution and plastering with cement paste.
5. Washing the exposed portion with 1% Potassium permanganate solution and painting with zinc white.
6. Control (No treatment).

Ten trees were used for each treatment and periodical observations were recorded upto March 1954. Extension of patches was noticed in all the treatments alike.

(b) During 1954 another experiment with a proprietary fungicide was conducted with the same object of preventing further extension of patches. After removal of the dead tissue the exposed portions were painted with 'Creosant' (a proprietary fungicide) and over that 5 trees were painted with zinc white and

another five trees were covered with areca leaf sheaths. A set of 5 trees without painting creosant was left as control. Periodical observations were recorded on the dimensions of the patches and at the end of one year it revealed that patches extended both in the treated series, and in the untreated control series.

Thus, prophylactic treatments carried out did not prove to be effective presumably due to the fact that the mycelium of wood rotting fungi penetrate too far deep into the tissue than it is possible to be effectively scooped out before disinfecting the surface.

7. Foliage spray with minor elements (Boron, Magnesium, copper, zinc).

Some of the trees in the garden exhibited yellowing of the leaves and 'Band' symptoms. In order to find out how those trees respond to spraying solution of magnesium sulphate, zinc sulphate, and Boric acid, these were sprayed separately and in combination on the leaves twice during a year commencing from September 1953. Periodical observations were recorded and the following are the findings at the end of two years :-

Treatments	No. of trees (including the two trees under 'Band') sprayed.	Number of trees which turned green after spraying	Remarks.
Zinc sulphate.	10	3	Both the trees with 'Band' symptoms recovered.
Boric acid.	10	6	Both the trees with 'Band' symptoms recovered.
Magnesium sulphate.	10	5	One tree out of 2 trees with 'Band' symptoms recovered and one wilted.
Combination of Zinc plus Mg. plus Boric acid.	10	5	Both the trees with 'Band' symptoms recovered.
Control (Unsprayed).	10	Nil.	One tree wilted and none recovered.

8. Foliage spray with Urea.

In order to find out whether the areca palms respond to the application of urea and to find out its effects on the stem-breaking, 20 trees exhibiting initial sun scorch symptoms on the stem were selected and their foliage were sprayed with 1% urea solution and another similar set of 20 trees were left unsprayed as control. Spraying was done twice a year in the months of September and March beginning from September 1953. The dimensions of the patches recorded before the experiment and at periodical intervals after the experiment revealed that urea spraying has no beneficial effect as far as stem-breaking is concerned.

9. Shade trees.

In order to provide shade in the long run to the garden from the South and Western sides, large number of shade tree plants like *Veterla indica*, *Cassia siamea*, *Holigarna arnottiana*, *Indigofera teysmanni* and *Casuarina* have been planted on the western hillock of the garden. The young forest plants that were found on the hillock were also allowed to grow.

10. Prolonging the life of areca trees with cavities.

In order to prolong the life of the trees which exhibited advanced stage of splitting of stems and deep fissures, the affected portions of some trees were reinforced by tying split pieces of areca stem round the trees. In certain trees, cavities were filled with cement sand mixture and it was found to adhere well in the beginning but later on these developed horizontal cracks on account of their too much rigidity when the trees swayed in heavy winds and dropped off in big pieces. The trees tied with areca stem splits were better able to withstand the heavy winds than trees which have not been so tied.

11. Miscellaneous.

(a) *Nut splitting of arecanuts.* Preliminary trials were made to control the shedding of nuts due to splitting. Three longitudinal slits if made at the base of spadix were found to be helpful in preventing shedding of nuts by "Nut splitting".

(b) *'Band' disease:—Transmission tests.* 'Band' is another form of disease found in the garden and about

5 % of the population, irrespective of their age show the symptoms of the disease. Transmission tests with the juice of affected palms were carried out during November 1954 to see if virus is the casual factor, but so far the transmission tests were not successful.

(c) *History sheets of areca palms.* Periodical recordings of the physical features, viz. height, girth, number of leaves, number of bunches, dates of leaf fall and appearance of spadices, yields of fruits, etc of all individual palms were maintained.

(d) *Rooting trials.* In order to see if cavities at the base of areca trees could be filled up by inducing root formation and thereby provide a firmer hold for the trees, cincturing was tried on five trees with cavities at their bases. The trees were under observation for over 2 years and there was no root formation.

(e) *Manuring.* Manuring of the garden was usually done in the month of August of each year. The dosage of manures adopted was 20 Lb. each of green leaf and farm yard manure or compost, 1½ Lb. of wood ash and ½ Lb. of super phosphate per tree. The manure was applied in trenches dug round the trees 2 feet away from the base and covered over with soil, instead of the usual local practice of applying the manure on the surface at the base of trees.

(f) *Green manures and cover crops.* In order to make the garden self sufficient in green manures, all the available vacant spaces in the garden were planted with either *Gliricidia maculata* or *Indigofera teysmanni* and a species of *Cassia* and all of them were found to come up well in the margins of the areca garden. Several cover crops, viz. *Pueraria javanica*, *Calopogonium-mucunoides* and *Centrosema pubescens* have also been raised in the intervening spaces between the rows of areca trees and all of them have been found to be very effective as cover crops for the areca garden.

(g) *Mulch.* The husk obtained after the husking of whole dried arecanuts was made use of for providing mulch cover to the garden to conserve moisture. The plots spread with husk have improved and this appears to be a better use for the husk rather than the usual practice of burning it.

Indian Council of Agricultural Research

Farm News Release No. 181/56.

UREA-A NITROGENOUS FERTILIZER.

New Delhi: Very shortly a new nitrogenous fertilizer will be manufactured in India. It is called urea.

Urea contains 45 to 46 per cent nitrogen. This means that 100 pounds of urea will give about twice as much nitrogen as the same quantity of ammonium sulphate.

Urea is soluble in water. It can be used wherever nitrogen fertilization is needed. Urea should not be applied when the soil contains free water or is likely to remain wet for three or four days after urea application.

Urea may be applied either at sowing time or as a top-dressing. When applied at sowing time, it should not come in contact with the seed. Because it is highly concentrated, it should be mixed with earth or sand before application.

Urea is suitable for application to all crops and soils.

Farm News Release No. 183/56.

NEW SWEET POTATOES OUTYIELD LOCAL VARIETIES

New Delhi: Two new sweet potato varieties recently evolved, have been found to be outstanding in yield, quality and nutritive value at the Indian Agricultural Research Institute, New Delhi.

The two varieties go by the name of *Pusa Suffald* and *Pusa Sunheri*.

Pusa Suffald is a high-yielding table variety. It has given yields of 250 to 400 maunds per acre in Delhi. The tubers are somewhat elongated with a white skin and flesh. The tubers store well.

Pusa Sunheri is a yellow-fleshed variety. Though not as good as *Pusa Suffald* in yield, it yields higher than local varieties. It has proved to be the best amongst the yellow or orange-fleshed varieties.

Both the varieties are highly palatable when cooked.

Farm News Release No. 185/56.

HIGHEST YIELD IN PADDY HOW "KRISHI PANDIT" RAISED PRIZE CROP

New Delhi: Recently, Shri Narayanlal Ujaone of Pardy village in Bhandara district of Madhya Pradesh was awarded the "Krishi Pandit" title for obtaining the highest paddy yield in the crop competitions in the 1954-55 season.

The farmer produced 102 maunds 7 seers 9 *chhataks* of paddy per acre.

When interviewed, farmer Ujaone attributed this high yield to the Japanese system of paddy cultivation which he followed. He used 5 pounds of seed per bed of 33 feet X 4 feet of the nursery. The variety he grew was the *Burma Cross*. Seedlings were planted nine inches both ways. The crop was transplanted during the middle of July, 1954.

The main field was given six ploughings. It was manured with compost at 33 cartloads per acre in June, 1954. In May and June, 2,560 sheep and 1,500 cattle were folded per acre.

Ujaone made good use of fertilisers for the crop. He applied 200 pounds of bonemeal per acre in the 1st week of July. He applied ammonium sulphate in three doses of 100 pounds each; the first at the time of planting, the second a fortnight later and the third after 15 more days. He applied 400 pounds of super-phosphate per acre in the last week of July, muriate of potash at 100 pounds per acre in the third week of August and 200 pounds of fertilizer mixture in the middle of the month.

The crop received three hoeings during its growing period. The crop was sprayed with five per cent BHC against the jassid pest and with 'perenox' to check the attack of blast.

The crop was harvested on the 14th of December, 1954.

Some New Insects and Mites on Areca Palm in Mysore-II

M. Puttarudriah and G. P. Channa Basavanna,

Division of Entomology, Department of Agriculture,
Bangalore

The authors (1953) had given a list of insects seen on areca palm in Mysore State. Here it is intended to give a brief account of the further collection of insects and mites on this palm. It is hoped that these preliminary contributions will serve as a basis for further detailed work on insect and mite pests of areca.

Rhipiphorothrips cruentatus Hood (Thysanoptera). The species has been reported from several places in South India (Ayyar, 1928) on grape leaves and *Eugenia jambolana*, and is even said to cause appreciable injury to tender grape leaves in certain parts of South India. The adults are dark brown in colour and live in small colonies along with the young ones, which are pinkish in colour, on the lower surface of the leaves. The area occupied by these colonies appears as a pale silvery blotch and such blotches may run together if the thrips population is sufficiently heavy, and the entire leaf gets blotched. Thrips injury may be seen on plants of all ages. The insects were seen in small numbers here and there in the areca gardens around Tharikere and also on a few plants (areca) around Bangalore.

In addition to the thrips, several species of scale insects were noticed in small numbers at different times and in different localities, particularly around Tharikere. None of them were seen to be in a pest form at any time, excepting one instance of the scale, *Aonidiella orientalis* (Newst.), of world wide distribution, becoming a serious pest on a few young areca seedlings near

Bangalore. The transplanted seedlings presented a sickly appearance, the lower surface of the leaves being completely covered with scale insects, and had a stunted growth. The other scale insects noted in small numbers are *Phenacaspis dilatata* (Green), around Tharikere during November 1953; *Parlatoria* sp. *Mytilaspiformis* Green, round about Tharikere during November, 1953; *Coccus acutissimus* (Green), collected in the same locality during the same time; and the soft brown scale *Coccus hesperidum* L., around Tharikere during April 1953.

The red mite, *Raoiella indica* (Hirst), was noted on areca seedlings at Hebbal (Bangalore) during April-May 1954. During the same period mite-infestations were seen on areca palms in various gardens around Tharikere, but the infestation was mild. A number of Coleopterous predators were also collected from amongst the mite colonies on areca palms near Tharikere. They are 1) *Apsectus indicus* Arrow (Dermestidae), 2) *Cybocephalus semipictus* Champ. var. (Nitidulidae), 3) *Stethorus parcepunctatus* Kapur (Coccinellidae), 4) *S. tetranych* Kapur (Coccinellidae), 5) *Juaravia soror* (Wse.) (Coccinellidae) and 6) *Spilocaria bissetata* (Muls.) (Coccinellidae). These predators, particularly the species of *Stethorus* which are usually seen in large numbers during the summer months, undoubtedly keep the mite populations in check.

In addition to the red mite another pale yellow coloured mite, *Oligonychus indicus* (Hirst), which lives under a web of silk particularly on the lower surface of the leaves and sometimes extending even on to the leaf stalk, was noticed attacking young areca seedlings at Hebbal during May, 1954. The same species is a serious pest, at times, of sorghum in Chitaldrug and Bellary districts of Mysore State. On a few areca seedlings at Hebbal the mite population was quite heavy and the leaves had become paler and curled back in a few cases. A few specimens of an allied species of mite, *Oligonychus biharensis* (Hirst), were also collected from areca palm at Lingadahalli (near Tharikere).

An unidentified dark brown Cockchafer beetle (Scarabaeidae) has also been reported to do damage to the roots of the palm in Sagar and Thirthahalli areas.

The writers are thankful to Dr. A. Earl Pritchard of the University of California, Berkeley, for the

Sales Tax on Arecanuts

TRIBUNAL'S FINDING UPHELD

Madras, April 17.

"Where any agricultural or horticultural produce has to be subjected to minimum processing before that produce can be marketed at all, it will still retain its character as agricultural or horticultural produce despite the minimum processing", observed Their Lordships, Mr. Justice P. Rajagopalan and Mr. Justice N. Rajagopala Iyengar, dismissing yesterday a tax revision case filed by the Government in the Madras High Court.

The Deputy Commercial Tax Officer assessed R. Saravana Pillai of Mettupalayam, to sales tax, on the turnover of cured arecanuts sold by him. The assessee claimed exemption on the ground that what he

determination of the mite species; and to the Director, Commonwealth Institute of Entomology, London, for the determination of the Coccids recorded here.

REFERENCES

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A Contribution to our knowledge of the Thysanoptera of India — Mem. Dept. Agric. India, Ent. Series, X (VII): 217 — 316.
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Some new insects and mite pests of areca palm in Mysore — Monthly Bull., Indian Central Arecanut Committee Calicut, IV (5): 71 — 74.

sold was horticultural produce within the meaning of the proviso to Section 2 (i) of the Madras General Sales Tax Act and that he had interest in the land in which the produce was grown. An appeal to the Commercial Tax Officer failed; but on further appeal, the Sales Tax Appellate Tribunal accepted the assessee's contention. The correctness of this finding of the Tribunal was challenged by the Government in the present proceedings.

Referring to the method adopted for marketing, arecanuts in Coimbatore District, Their Lordships said that the practice was to gather arecanuts while they were still raw and to peel them. The peeled kernels were sliced, boiled and then dried. It was only after they were dried that they were fit to be marketed. The contention of the Government was that the arecanuts were subjected to manufacturing process and what was sold had ceased to be horticultural produce as such, before it was sold.

Their Lordships pointed out that the proviso to Section 2 (i) of the Sales Tax Act was obviously conceived in the interest of agriculturists. It excluded from tax liability under the Act, the sale of agricultural and horticultural produce, the primary condition to be satisfied being that it must be produce of the land which either belonged to the seller or of the land in which he had an interest, as specified in the section. To restrict that concession to sale of arecanuts in the State in which they were immediately on being gathered from the trees, would render the statutory exclusion meaningless. The person who grew that produce could not sell it in that form. That what was horticultural produce ceased to be that, when it was subjected to a manufacturing process and what was sold was manufactured product, did not admit of any doubt. In the present case, it could hardly be said that the marketed commodity was the product of a manufacturing process to which the arecanuts, as horticultural produce had been subjected. No doubt arecanuts gathered had to be processed before they could be sold at all; but that processing fell far short of what was normally understood as manufacturing process.

Their Lordships were of opinion that where any agricultural or horticultural produce had to be subjected to minimum processing before that produce could be marketed at all, it would still retain its character as

Indian Central Arecanut Committee, Kozhikode

The Director of Agriculture, Madras and Shri E. A. R. Banerjee, Joint Director of Agriculture, West Bengal have been renominated to the Indian Central Arecanut Committee by the Governments of Madras and West Bengal respectively.

Shri N. Channappa from Mettupalayam in Madras State, Shri V. R. Krishnan Ezhuthassan from Ollur and Shri M. T. Joseph from Mundur in Travancore-Cochin State have also been renominated by the respective State Governments to represent the interests of areca growers.

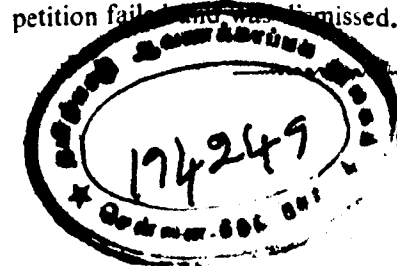
Another renomination is that of Shri K. T. Shamiah Gowda, who represents the interests of trade in arecanut in Mysore State.

To the vacancy caused by the retirement of Shri M. N. Chouta from Mangalore, Shri M. S. Padival Kallamundkur, has been nominated to represent the interests of areca growers in Madras State.

In the place of Shri Upendra Chandra Das whose term expired in March 1956 Shri Gauri Kanta Talukdar from Gauhati has been nominated as a representative of areca growers in Assam.

All the above renominations and nominations have been approved by the Government of India for a term of three years from 1st April 1956.

agricultural or horticultural produce, despite that minimum processing. The processing to which the arecanuts were subjected, as described above, did not really change the character of the produce. What was sold still retained its character as horticultural produce within the meaning of section 2 (i) of the Act. Therefore, the view taken by the Tribunal was correct. The petition failed and was dismissed.



News & Notes

1. Co-ordination of Coconut and Arecanut Committees.

The special sub-committee set up by the President of the Indian Central Arecanut Committee and the Indian Central Coconut Committee, to examine the question of co-ordination of the activities of both the Committees, met at New Delhi on 29th May 1956 and after detailed discussions, decided that since the problems of arecanut and coconut are not similar, co-ordination either in research or administration is not desirable. The proposal was therefore decided to be dropped. The Vice-President and the Secretary represented the Indian Central Arecanut Committee on the special sub-committee.

2. Distribution of seedlings.

The President of the Indian Central Arecanut Committee has sanctioned the distribution of 3,300 seedlings free of cost to the Nediyruppu Harijan Colony, South Malabar, from the Committee's nursery at Kunnoth. Distribution of seedlings from the various arecanut nurseries so far are shown below:—

Name of the nursery.	No. of seedlings distributed.
North Malabar Nursery, Kunnoth.	35,000
Arecanut Nursery in Assam.	30,000
Arecanut Nursery in Nadia, W. Bengal.	43,000
Addl. Arecanut Nurseries in W. Bengal.	41,000
Arecanut Nursery at Trichur.	16,000

3. Secretary's Tour.

The officiating Secretary, who went to New Delhi to attend the special sub-committee meeting convened by the Secretary of the Indian Central Coconut Committee on the 29th May to examine the possibilities of co-ordination of the activities of both the Arecanut and the Coconut Committees returned to Calicut on the 3rd June after attending the meeting.

Review of the Prices of Arecanut in different assembling markets in India for the period January to May 1956

A general review of the market prices during the period shows that prices of arecanut remained fairly steady and were consistently higher than the prices for the corresponding period of last year, namely 1955, in all the markets except Bombay. In Bombay, however, the prices were less than the corresponding prices of last year for the representative varieties, but here again the difference in prices was not large. A brief note on the relative prices of arecanut during 1956 as compared with the corresponding period of 1955 in the different markets is given below. The prices mentioned are all per maund of 82.2/7 lbs.

Mangalore.

The monthly average prices per maund for the period under review for 'choll' (old arecanut), 'Navi' (new supari) and 'koka' (inferior nuts) were Rs. 134 6, 109/8 and 71/5 as against Rs. 121/3, 106/10 and 70/10

4. On the onset of the monsoon, the planting season has just commenced and the Technical Assistant of the Committee has been deputed to distribute the seedlings raised in the arecanut nursery at Kunnoth near Tellicherry in North Malabar. It is hoped to distribute about 25,000 seedlings during this season from the nursery.

respectively for the corresponding period of 1955. The choll nuts were available in this market till the first week of March and the highest price fetched by this variety was Rs. 135/15 per maund during the last week of February. The prices of all the three varieties were fairly steady during the period and were consistently higher than their corresponding prices last year. The monthly average prices of arecanut during 1956 are given below:—

Month.	Koka.	Choll.	New Supari.
January 1956.	Rs. 74/15	135/13	108/13
February „	71/10	132/4	111/12
March „	70/15	134/7	109/12
April „	67/15	N. S.	108/3
May „	71/10	N. S.	109/2

According to the statistics furnished by the South Kanara Market Committee, Mangalore, about 1,54,600 cwts. of arecanut were received there for disposal during the 5 month period.

Palghat

The average monthly prices for the quarter ending March 1956 in this market for "Choor" and "Choor-kottai" were Rs. 128/13 and 90/10 respectively. The price reports for the months of April and May 1956 are not available. There were no reports for the period January to March 1955 also. The monthly average prices during 1956 were as below.

Month.	Choor.	Choor-kottai.
January 1956.	Rs. 132/1	88/5
February „	117/-	92/9
March „	137/7	91/1
April „	N. R.	N. R.
May „	N. R.	N. R.

Alleppey.

The prices in this market for both Garbled and Assorted nuts showed a tendency to rise during the period and were consistently higher than the corresponding prices during last year for the 5 month period. The monthly average prices during 1956 for Assorted and Garbled nuts were Rs. 99/8 and 110/11 as compared

with Rs. 88/- and 93/4 respectively for the corresponding period last year. A statement of the monthly average prices during 1956 is given below:—

Month.	Assorted.	Garbled.
January 1956.	Rs. 73/8	84/6
February „	91/14	104/12
March „	108/12	119/4
April „	111/2	121/4
May „	112/2	123/11

Trichur.

The prices of 'Erasal' (thinly sliced boiled nuts), 'Iylon' (sliced sundried nuts) and 'Choor', the important varieties dealt with in this market registered a fall in February 1956 but increased continuously thereafter till May. The monthly average prices of Erasal, Iylon and Choor during 1956 were Rs. 161/5, 176/1 and Rs. 152/4 respectively as against Rs. 157/10, 171/2 and 158/5 for the corresponding period of 1955. The monthly averages of the different varieties in 1956 were as under:—

Month.	Iylon.	Erasal.	Choor.
January 1956.	Rs. 144/-	166/10	138/15
February „	138/-	157/14	133/11
March „	166/8	175/3	151/2
April „	177/15	187/3	159/13
May „	180/-	193/6	177/12

Shimoga.

The prices of the most important varieties in this market namely "Deshavaram", "Rajalu" and "Vanti Bette" were more or less uniform during the period. The monthly average prices for the period for the above varieties worked out to Rs. 151/12, 150/9 and 108/13 in 1956 as against Rs. 141/9, 134/7 and 109/4 respectively in 1955 for the corresponding period. The average monthly prices during 1956 are given below:—

Month.	Deshavaram.	Rajalu.	Vanti Bette
January 1956.	Rs. 149/15	136/-	106/4
February „	150/6	138/1	108/5
March „	152/11	141/3	109/8
April „	N. A.	143/-	109/14
May „	153/14	144/-	110/4

According to the statistics received from the Regulated Market Committee at Shimoga, about 1,04,700 maunds of arecanut were received for disposal at the market during the first five months of 1956 as against about 93,470 maunds for the corresponding period of 1955.

Bombay Market.

Bombay Market for whole boiled nuts.

The average monthly prices of 'Sirsi Safed' and 'Sirsi Dhappapi' were Rs. 105/9 and 108/2 respectively during the period under review as against Rs. 110/4 and Rs. 110/5 respectively for the corresponding period last year. The monthly average prices during 1956 were as under:

Month.	Sirsi Safed.	Sirsi Dhappapi.
January 1956.	Rs. 92/8	103/5
February	108/2	105/6
March	107/8	110/13
April	108/10	111/12
May	111/-	109/6

Tezpur and Silchar markets in Assam State.

The prices of 'Poka Tamol' (ripe nuts with husk) and 'Bura Tamol' (specially treated nuts with husk) at Tezpur market remained fairly stationery throughout the period at Rs. 18/- and Rs. 25/- respectively. The prices of Poka Tamol were the same for the corresponding period last year while Bura Tamol was reported to be not available during the first five months of 1955. The prices of dry nuts in Silchar market were also fairly stationery during 1956 at Rs. 121/- per maund while those of raw nuts varied from Rs. 1/4 to Rs. 1/12 per hundred. During the period January to May 1956 the prices of dry nuts were fluctuating between Rs. 80/- and Rs. 82/- per maund and those of raw nuts between 12 annas and Re. 1 per 100 numbers.

Prices of imported nuts in Madras, Bombay and Calcutta Markets.

Since arecanuts are imported from foreign countries such as Ceylon, Singapore and Federated Malay States the prices of these nuts at the importing centres are given below.

Madras, Bombay and Calcutta generally influence the prices of indigenous nuts at these centres. The monthly average prices of Ceylon and Singapore nuts at the importing centres of Madras, Bombay and Calcutta during 1956 are given below.

CEYLON NUTS.

Month	Madras	Bombay	Calcutta.
January 56.	Rs. 115/3	110/-	112/-
February „	115/3	122/-	120/-
March „	115/3	105/-	116/6
April „	115/3	107/14	120/11
May „	N. A.	108/12	121/-

SINGAPORE NUTS.

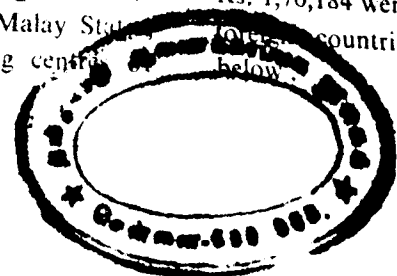
Month	Madras	Bombay	Calcutta
January 56.	Rs. 111/14	105/-	104/-
February „	111/14	109/6	108/8
March „	111/14	108/-	105/-
April „	111/14	110/-	111/5
May „	N. A.	110/-	116/-

The slight differences in the prices among the Madras, Bombay and Calcutta markets in respect of the imported nuts may be attributed to variations in landed cost and the demand and supply position in the concerned markets.

Import of arecanuts into India.

From May 1955 onwards, an import duty of 12½ annas per lb. (standard) and 12 annas per lb. (preferential) is being levied on arecanuts imported into India from foreign countries. The import policy has also been liberalised and licences are issued for reasonable amounts to intending importers. During the period January to March, 1956, 1,87,037 cwt. of arecanuts valued at Rs. 99,84,601 were imported into India from Ceylon, Singapore and Federated Malay States. During the same period 836 cwt. of arecanut valued at Rs. 1,70,184 were exported from Bombay port to some foreign countries. The detailed statistics are given below.

ARECANUT



Statistics of export of arecanuts to foreign countries from Bombay Port during the period January to March 1956.

Destination.	Quantity. (cwt.s.)	Value. (Rs.)	Destination.	Quantity. (cwt.s.)	Value. Rs.
Aden.	22	4,963	Saudi Arabia.	70	15,948
Behrein Islands.	54	4,647	Singapore.	167	31,774
Federation of Malaya.	18	4,683	Tanganyika.	11	1,313
Fiji Islands.	40	8,794	Uganda.	8	1,245
French Somaliland.	2	485	United Kingdom.	3	455
Mozambique.	18	4,150	West Pakistan.	16	2,160
Muscat & Coman.	6	1,092	Kenya.	362	79,434
Nyasaland.	25	5,236			
Rhodesia North.	12	3,469	Total.	836	1,70,184
Rhodesia South.	2	336			

Import of arecanuts into India during the period January to March 1956.

Port to which imported.	Places from which imported.									
	Ceylon		Singapore		Federated Malay State		Others		Total	
	Quantity (cwt.s.)	Value (Rs.)	Quantity (cwt.s.)	Value (Rs.)	Quantity (cwt.s.)	Value (Rs.)	Quantity (cwt.s.)	Value (Rs.)	Quantity (cwt.s.)	Value (Rs.)
Bombay.	1615	96330	4440	257851	42673	2407892	70	2663	48798	2764736
Calcutta.	3622	223547	99457	4051156	2256	112041	200*	15534	105535	5302278
Madras.	13373	1028438	6160	364963	12867	505945	..	..	32400	1899346
Saurashtra.	..	..	304	18241	..	..	..	..	304	18241
Total.	18610	1348315	110361	5592211	57796	3025878	270	18197	187037	9984601

*Includes 199 cwt.s. of arecanuts valued at Rs. 15,436 imported by land into W. Bengal from East Pakistan.

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