

Betelvine Cultivation in Areca Gardens and its Benefits

G V. B. NAIDU, B Sc. (Hons),

Research Officer,
Regional Arecanut Research Station, Hirehalli.

Betel leaves form one of the three ingredients of the almost universal habit of 'Pan' chewing. "Along with arecanut it is a symbol of auspiciousness" and is "credited with many properties such as a digestive, a sweetener of the breath and as a material wherewith to colour the lips". The vines are cultivated as a pure crop in many parts of the country using "*Sesbania*



grandiflora" or "*Erythrina*" as the standard on which the vines are trailed. But in parts of Periapatna, Hunsur, Arkalgud, Mysore, Tumkur, Koratagere, Jagalur and Chitaldurg taluks, betel vines are grown as

an intercrop in arecanut gardens, either using the areca palms as the standards or on separate standards in 2 rows in between the rows of arecanut palms; and it is noted to pay up to Rs. 500/- nett. an acre per year. The former method is usual where betel vines are raised in old gardens of above 30 years, while the latter in gardens below 10-15 years. In all cases, betel vine is raised as an intercrop to pay through the initial year of establishing an areca garden and they are later on thinned and trailed on to the areca palm. Though the vines are cultivated only as a subsidiary source of income to the areca garden owner, it was observed that its cultivation had many indirect benefits to the arecanut palm as well. Hence a study of the advisability and utility of its cultivation in arecanut gardens was undertaken. 12 gardens in all, in Tumkur, Periapatnas Koratagere, Arkalgud and Chitaldurg Districts, were studied in this regard.

Betel vine cultivation in areca gardens as a subsidiary income crop is found in all parts of India. The cultivation as an intercrop using areca palms as the standards has been noted by Shri Yagnanarayana Iyer (1944), who also notes that the manure applied to the betel clumps at the base helps the areca palms also. Shri K. K. Nambiar (1949) has reported its cultivation in Malabar, Travancore, Cochin, Assam, Bengal, Mysore and North Kanara areas. Shri Ahmad Bavappa (1951) has recommended its cultivation as an important subsidiary cash crop. Hence its utility as an intercrop which gives a good side-income to the ryot is established and in the present article, the advantages of its cultivation to the areca palms only is noted.

Cultivation of betel vines in areca gardens varies with the age of the garden. In case, where its cultivation is taken up in fairly well established gardens of above 20 to 25 years, pits of about $1\frac{1}{2}$ ' square and 8" to 10" depth are dug up about 1' away from the base of the areca palm. These pits are well manured and after the first showers in May, 4 to 5 vine cuttings of about 18" length are planted coiled in the pit with the free ends trailing towards the areca palm. Next year, they are released and the lower portion upto 2 to 3' is again coiled and buried in the pit, and the rest allowed to trail on to the palm. Subsequent "lowering" is usually not done till they are 4 or 5 years old. In case of young areca gardens, vines are planted in rows, between the rows of areca palms, about $1\frac{1}{2}$ ' to 2' away from their base. Separate standards are raised and



the vines are trailed on to them. When the areca palms are about 6 years old, only those vines near to their base are released from the standards, the lower portion upto 2' to 3' is coiled and buried and they are trailed on to the palm. The rest along with the standards are completely removed and the interspace left free for cultivation and picking. There is also another method practised in parts of Korategere, where even in older gardens betel vines are grown in two rows on separate rows of standards raised in between the arecanut palms and it is continued as such for an indefinite period.

When once betel vine cultivation is taken up, special attention towards cultural practices and manuring becomes a necessity as the cultivation should be of a very intensive type involving in continued attention and care. Drains are dug up and kept in a perfect condition and the entire garden is dug up and kept weed free. The idea of cleanliness is also linked with the superstitious belief that it is akin to "Laxmi" (probably because it is a cash crop) and makes them refuse admission to visitors wearing shoes or sandals. This helps in avoiding the incidence or spread of diseases to a very great extent. Moreover, its cultivation involves in heavier localised manuring to the clumps at the base in addition to the general spread to the garden and it indirectly benefits the palms.

	No. of gardens studied.	Average No. of plants per acre.	Incidence of scorch.	Incidence of diseases
Tumkur Taluk	3	605	1	1
Periapatna	3	580	Nil	Nil
Arkalgud	2	400	Nil	Nil
Chitaldurg	4	400	Nil	Nil

Its effect on areca palms:—1. In spite of all the cultural practices enumerated above, which the betel vine cultivation involves there does not appear to be any appreciable increase in yield per acre. Either the crop is the same normal, year after year, or in some cases as in Periapatna and Arkalgud, a lower yield than a pure areca garden without intercrop is obtained. Only in Jagalur area in some gardens, where intensive manuring is done, higher arecanut yield per acre is noticed. This is evidently due to the fact that though there is increase in application of manure from 8 to 10 cartloads per acre to 10 to 15 cartloads, the excess is insufficient to meet the demands on it, of both the betel and areca crops. Application of compost mixed with fertilizers in an increased dose is reported to have given 8 maunds of arecanut more with increased leaf yield of betel per acre. Detailed statistics are, however, wanting. Only in one garden, a ryot was of the opinion that the reduction in yield of areca was probably due to trimming up of the roots of the palm to some extent, while digging the pits for planting or lowering of the vines. This has to be studied. Anyhow, in all the gardens studied, it was observed that the average yield per acre has been constant and in no case was a gradual decrease year by year reported.

2. In all the 14 gardens studied, it is found that the incidence of diseases are almost nil, whereas they were present in the adjoining gardens. Only one plant was found affected by Hidimundige at Tumkur area, while upto 0.2 per cent incidence of 'Anabe' and 'Hidimundige' were present in general in surrounding gardens.

3. In addition to this, only one palm which was insufficiently covered by the vines showed traces of sun-scorching. 12 palms exposed to the Western sun but covered thickly by these vines were free from sun scorch. This evidently acts as a leafy cushion to protect the stems from the direct sun rays and prevents sun scorching. To young gardens, this is really a great help.

4. Its cultivation necessitates even at a later stage the keeping up the space between the rows of areca free from all intercrops in order to give sufficient space for the tall harvesting step ladder to operate, with the result the underplantings are regularised and population in a garden kept to the normal. Thus, compulsory



systematisation results. In no garden with vine cultivation do we find more than 600 palms, while upto 1150 is commonly noted in Kyatsandra area. The yield per acre compared to these over-populated gardens is even better giving about 30 to 35 maunds on an average.

Summary and Conclusions:—Studies of 14 gardens, spread over four Districts, were taken up with a view to assess the benefit of betel-vine cultivation in arecanut gardens using areca palms as standards to trail the vine.

1. It was found that its cultivation augments the income of the ryot upto Rs. 500/- per acre and also results in the following benefits:—

2. That when betel vines are cultivated as intercrop, it involves in very clean cultivation of the entire garden and maintenance of good drainage, as the vines respond only to very clean and intensive cultivation.

3. There is also consequential increase in manuring and this increase though inadequate to help increase of production of both betel leaves and arecanuts, has, however, helped the areca palms to maintain its normal output without any decrease, thus giving it a negative benefit.

4. The resultant cultivation and drainage helps greatly in prevention of the incidence and spread of diseases like "Anabe" and "Hidimundige" prevalent in other gardens, where such cultivation is not practised.

5. The vines with their clinging root system and mass of leaves cover the stem and protect it from the scorching effect so that not a single tree so covered, though exposed to the West for want of adequate shade trees, showed signs of sun scorching.

Hence, it is seen that cultivation of betel vines in arecanut garden have many indirect benefits in addition to increasing the income of the ryot. If adequate manuring is taken up based on the actual requirements of both betel vines and areca palms, there will be increase in the yield of both leaf and nut output. Since the betel leaves and arecanuts are linked in their utility, it is but poetic justice that their cultivation together should be linked, and of mutual benefit. Hence, in all new gardens, cultivation of betel vine as an intercrop should be taken up.

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