PROMISING CULTIVARS AND IMPROVED VARIETIES OF ARECANUT (*Areca catechu* L)

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The arecanut palm (*Areca catechu* L.) is one of the important commercial crops of India. The crop is mainly grown in the states of Karnataka, Assam, Kerala, West Bengal, Meghalaya, Maharastra, Tamil Nadu and Andaman & Nicobar group of Islands. The economic produce is the fruit called betelnut or supari which is used mainly for masticatory purpose. The area under arecanut in India was 1.06 lakh hectares during 1955-56 which increased to 2.64 lakh hectares during 1996-97 recording an increase of 149 per cent over a period of 40 years. The production for the corresponding period has increased from 0.81 lakh tonnes to 3.13 lakh tonnes (286 percent increase). The productivity increased from 8.50 kg per hectare in 1957-58 to 1186 kg per hectare during 1996-97. Thus the increase in production was not only due to increased area under cultivation but also increased productivity contributed by superior varieties, supply of quality planting materials, better agro-techniques and plant protection.

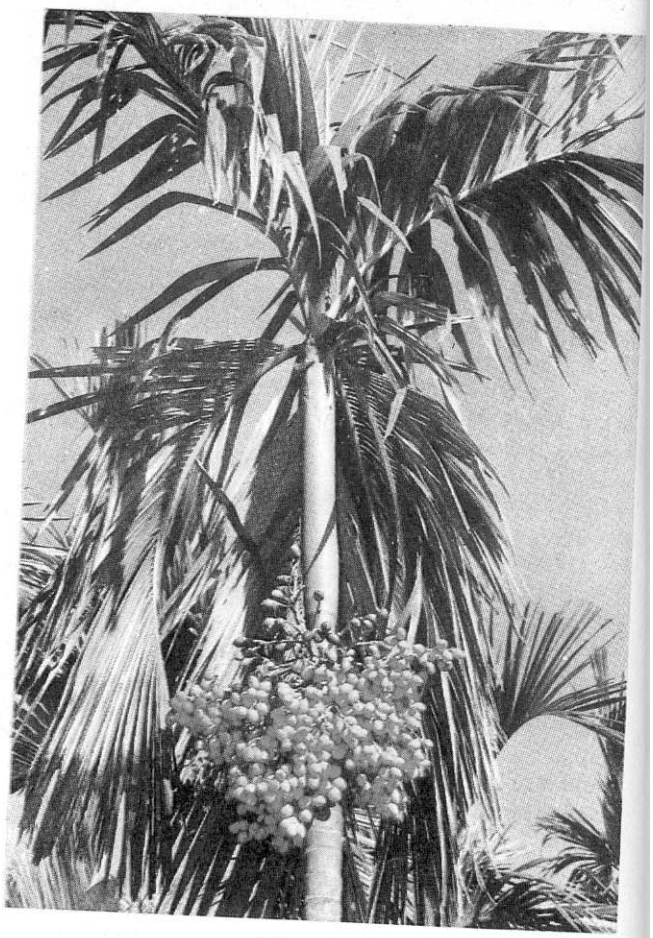
India is the largest producer and consumer of arecanut and it continues to dominate world in area under cultivation and production and productivity. The national policy on arecanut is not to increase any more area since we have achieved self sufficiency. Though arecanut is not an export oriented crop, the internal demand is very high. About 8 million people are depending upon this crop for their livelihood. However, efforts are on to minimise the cultivation cost per unit area so that net return for the farmer is increased. Also, due to yellow leaf disease the productivity of arecanut has come down in some parts of Kerala and Karnataka which needs immediate planting with genetically superior planting materials. Besides, old and unthrifty plantation have also resulted in decreased productivity which also require replanting with elite planting materials. With the results, there is a high demand for seeds and seedlings of areca from the growers, state departments and extension agencies. Areca growers now realised that the production can be enhanced considerably by planting quality planting materials of high yielding varieties released and promising cultivars identified by CPCRI and other agencies.

Systematic evaluation of exotic and indigenous accessions and selection for high yield and its component characters have resulted in release of high yielding varieties and also identifying some of the promising cultivars for different agroclimatic conditions of the country.

Important characteristics of the released arecanut varieties

Mangala (VTL-3)

Among the exotic collection, under evolutions for yield and its component traits, cultivar VTL-3 introduced from China was found to have number of desirable characters such as earliness in bearing, more number of female



Mangala

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flowers per inflorescence, higher nutset, higher yield, quicker stabilization of production and lesser height in comparison with local south kanara variety. The cultivar was released for coastal areas of Karnataka and Kerala upto an altitude of about 800 meters above MSL in 1972 for commercial cultivation under the name 'Mangala' which is characterized by partially drooping crown with well spread leaves and having more number of leaflets as compared to south kanara local. The leaf lets are dark green in colour with characteristic crinkling at the tip.

Sumangala (VTL-11) and Sreemangala (VTL-17)

Critical observations recorded on the exotic and local (South Kanara) showed that the cultivars introduced from Indonesia (VTL-11) and Singapore (VTL-17) had a number of desirable characters as compared to local south kanara. There was an increase in yield of 63 per cent and 48 per cent, respectively in VTL-11 and VTL-17 over local control. In view of the significant yield increase in VTL-11 and VTL-17, these two varieties were released for all the areca growing areas in general and Dakshina Kannada (Karnataka) in particular as Sumangala and Sreemangala in 1985. These varieties have an yield increase 62.89 and 47.59 per cent over SK local and 53.33 and 38.93 per cent over Mangala.

Sumangala : It is a tall type with partially drooping crown.

Sumangala

Under good management palms flowers in 4-5 years. The colour of the ripe nuts is deep yellow to orange and oblong to round in shape. The variety recorded an average yield of 17.25 kg of ripe nuts per palm per year at the age of ten years.

Sreemangala

Sreemangala : The palm is tall with partially drooping crown with longer internodes and sturdy stem. It starts flowering in 4-5 years. It is high yielder with an average yield of 15.63 kg ripe nuts per palm per year. Ripe nuts are usually oblong to round in shape with deep yellow colour.

Mohit nagar

Mohitnagar, an indigenous (Mohitnagar, West Bengal) arecanut variety with a high yield potential has been recommended for release during 1991. The important features of this variety is its greater uniformity. The bunches are well placed and nuts are loosely arranged on spikes which help in their uniform development and also enable efficient plant protection measures. Early stabilization of yield as compared to Sumangala and Sreemangala was also noticed. The variety is consistent high yielder with an average yield of 15.08 kg ripenuts per palm per year. This variety has been released for cultivation in West Bengal and Coastal areas of Karnataka and Kerala.

Mohit nagar

Calicut-17

The variety Calicut-17 (indigenous to Andaman and Nicobar islands) is tall in nature with longer internodes crown as compared to Mangala. The striking features of cultivar is its consistent high yielding potential (Ave yield of 18.89 kg ripenuts per palm per year with a kerne of 4.34kg per palm per year) and well placed bunches round and bold nuts. This cultivar has been released commercial cultivation in Andaman and Nicobar grou Islands during 1995 where it exhibited as best performer c pared to 'Mangala' and other cultivars.

Calicut-17

SAS-1

This variety is characterized by tall palm with comp canopy. Nuts are round and even sized and closely arran on compact bunches. This variety is a regular bearer a has higher procuring percentage. It is also suitable for b

SAS-1

tender and ripe nut processing. It has got the potential to yield about 4.60 kg chali per palm per year. The variety has been recommended for traditional arecanut growing valleys of Sirsi hill zone of Karnataka.

Promising cultivars of arecanut

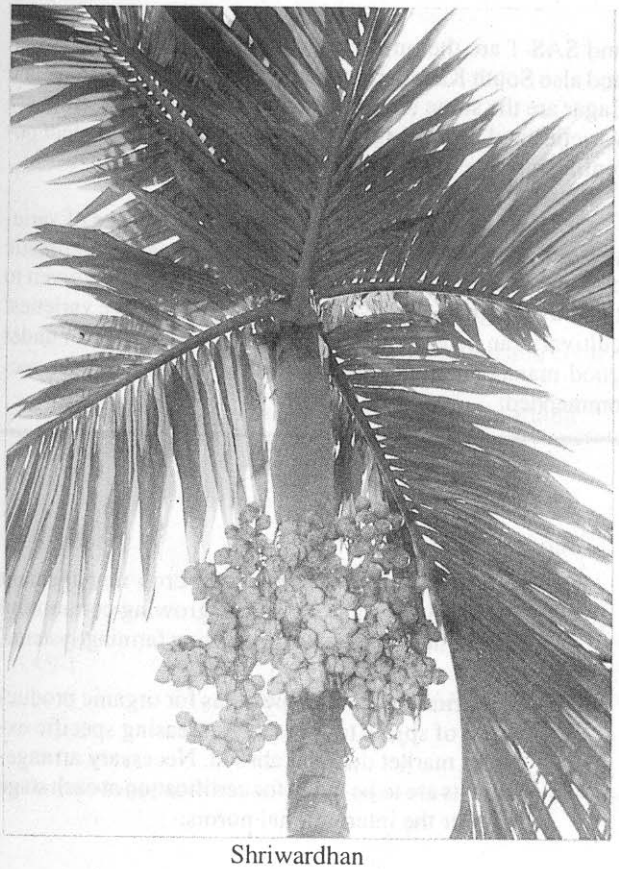
South Kanara Local/Kasaragod Local

It is largely grown in Dakshina Kannada district of Karnataka and Kasaragod district of Kerala. It is characterised by large sized nuts with uniform bearing and the average chali yield is about 2.0 kg/palm/year. Ripe nut of this cultivar is mainly used for making chali.

South Kanara Local/Kasaragod Local

Shriwardhan

It is grown widely in the Raigad and Rathnagiri districts of Maharashtra and Coastal Karnataka. The nuts of this variety are oval in shape and the yield is comparable to 'South Kanara'. Average yield recorded is about 2.20 kg chali/palm/year. Because of the larger proportion of its endosperm it is tastier than other varieties. Due to its shape and marbled appearance of the kernel when cut, it fetches premium price in the market.



Shriwardhan

Thirthahalli

It is grown extensively in Malnad areas of Chikmagalur and Shimoga districts of Karnataka and ripe nuts of this cultivar are preferred for tender nut processing. The size of the nuts are smaller and oblong in shape. Its yield is about 12 kg ripe/nut/palm/year.

Thirthahalli

Sagar

It is mainly grown in Uttara Kannada and Shimoga districts of Karnataka. It is a tall type and having sturdy stem with erect bunches. The nuts are smaller in size and round in shape. Average yield 2.25 kg chali/palm/year. Nuts are used for making both chali and tender nut processing.

Sagar

Hirehalli Local

Hirehalli Local

It is a tall type and mainly cultivated in maidan parts of Karnataka. The nuts are medium sized, round to oval shape. Nuts of this cultivar is used both for tendernut processing and making chali. Average yield is 3.20 kg chali/palm/year.

Research and developmental efforts in arecanut have contributed immensely to the remarkable increase in the production and productivity of arecanut in our country. Among the various achievements in the field of arecanut research, the release of high yielding varieties and also identifying promising cultivars of arecanut assumes great significance. Mangala, Sumangala, Sreemangala, Mohitnagar, Calicut-17 and SAS-1 are the improved varieties released in arecanut and also South Kanara Local, Shriwardhan, Thirthahalli and Sagar are the some identified promising cultivars. All these varieties and promising cultivars are having high yield potential and other desirable characters.

It is important to note that the performance of varieties and cultivars will vary depending upon agro-climatic conditions where they are grown and the attention given to them by the grower. The potentiality of the above varieties/cultivars can be exploited only when they are grown under good management conditions following the practices recommended.

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Development programmes envisaged for the future

The following programmes are envisaged during next 10 years to improve the production efficiency and withstand global competition in the field cost competitiveness and export.

1. Standardization of nursery techniques involving biocontrol agents and mycorrhiza for prevention against possible infestation of *Phytophthora foot rot* of pepper in the initial stages. Popularization of the technology among the nursery agencies is to be done.
2. Popularization of integrated crop management technologies among spices growing community without jeopardizing the existing farming systems.
3. Identification of suitable areas for organic production of spices to meet the increasing specific export market demand abroad. Necessary arrangements are to be made for certification at each stage as per the international norms.

Table : Distinguishing characters of promising cultivars and released varieties of arecanut

Cultivar/ variety	Growth habit	Shape&Size of nut	Yield Chali (kg/palm)	Year of release	Recommended agro-climatic area
Promising cultivars					
SK Local/ Kasaragod	Tall	round and bold	2.00	-	Northern Kerala and DK, Karnataka
Thirthahalli	Tall	small and elongated	2.60	-	Malnad areas of Karnataka
Sagar	Tall	small and round	2.25	-	Shimoga and Uttara Kannada of Karnataka
Shriwardhan	Semi-tall	round and medium sized	2.00	-	Coastal Maharashtra and Karnataka
Hirehalli local	Tall	round to oval & medium sized	3.20	-	Maidan parts of Karnataka
Released varieties					
Mangala	Semi tall early bearing	Round & small	3.0	1972	Costal Karnataka and Kerala
Sumangala	Tall	Oval & medium	3.28	1985	Karnataka and Kerala
Sreemangala	Tall	Round and Oval	3.18	1985	-do-
Mohitnagar	Tall Homogeneous	Oval to round medium	3.67	1991	West Bengal Karnataka and Kerala
Calicut-17	Tall Sturdy	Elongated and bold	4.37	1995	Andaman & Nicobar Islands
SAS-1	Tall compact canopy	Round and medium	4.60	1995	Only valleys of Sirsi, Karnataka