KNOW YOUR NUTS

Coconut Varieties in Sri Lanka

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The medley of coconut varieties found growing in Sri Lanka has led to some confusion so that we are often confronted with strange requests for planting material, even non-existent ones such as dwarf king coconuts (**kundira thembili**), **bimpol** and even grafted or budded coconuts! We, therefore, list here the coconut varieties and forms found in Sri Lanka together with a brief description of their outstanding features as may be observed by an average person. This should aid in the recognition of these forms in the field.

Distinct classification of coconut is difficult as there is considerable variability even within a single form of a variety. This is because the coconut palm is predominantly cross-pollinated and heterozygous (derived from crossing parents of dissimilar genetic constitution) and does not usually breed true to type. The most recent identification and description of varieties and forms in Sri Lanka is that by Dr.D.V. Liyanage in 1958 who lists three varieties and a total of 13 forms and describes their salient characters. Further information on their comparative flowering behaviour is given by W.B.Fernando in 1976.

There are two main varieties of coconut, *typica* and *nana,* which are fairly easily distinguished from each other and a third variety, *aurantiaca*, which is intermediate. Each of these varieties has different forms.

Typica - TALL in habit with mean HEIGHT about 18 m (60 ft.) TRUNK stout, mean girths 82 cm or 33 in. Base of trunk expanded into BOLE. FRONDS long, approx. 5.4 m (18.0ft). LATE FLOWERING, approx. 6-8 years from planting. Flower production CONTINUOUS. Male and female flowers do not become functional at the same time. Predominantly CROSS–POLLINATING. FEWER NUTS per bunch. Average NUMBER of NUTS per palm per year 40.NUT SIZE medium to large with COPRA PER UNIT about 220g. COPRA OUTTURN HIGH, about 4000- 5200 nuts to a MT.COPRA hard and of good quality. Nuts sprout within 12 - 20 weeks of laying in nursery PRODUCTIVE LIFE about 60 years. Tolerates a variety of SOIL TYPES and CLIMATIC CONDITIONS including DROUGHT. More tolerant to PESTS and DISEASES. Used for COMMERCIAL purposes.

Nana- DWARF in habit with mean HEIGHT ABOUT 10.5 m (35 ft.) TRUNK slender, mean girth≈55 cm(22 in). No BOLE at base of trunk. FRONDS short, approx. 4 m (13.3ft.) with narrower blades and closely spaced leaf scars. EARLY FLOWERING, approx. 3 -4 years from planting. Flower production SEASONAL. Generally male and female flowers become functional about the same time. Often SELF POLLINATING. MORE NUTS per bunch average NUMBER OF NUTS per palm per year greater than 100. NUT SIZE small with COPRA PER UNIT about 85 – 113 g. COPRA OUTTUTN LOW, about 9000– 12000 nuts to a MT. COPRA LEATHERY and of poor quality and more difficult to manufacture than in the tall variety. Nuts sprout within 12–16 weeks from laying in nurseries. PRODUCTIVE LIFE about 40 years. Requires suitable SOILS and well-distributed RAINFALL. Generally susceptible to PESTS and DISEASES. Used for BREEDING purposes and is of no commercial value.

Aurantiaca - INTERMEDIATE in habit with mean HEIGHT about 12 m (40 ft.). TRUNK medium, mean girth≈70 cm(28 in). FRONDS short, approx 4.5 m (14 ft). LATE FLO–

WERING, approx. 6 - 8 years from planting. Flower production SEASONAL. Generally male and female flowers become functional at about the same time. Often self-pollinating. Average NUMBER OF NUTS per palm per year greater than 100. NUT SIZE medium, COPRA OUTTURN medium low, about 8 000 nuts to a MT of copra. ENDOSPERM thin and of little value in copra production, PRODUCTIVE LIFE about 40 years. Requires SOILS with a high WATER TABLE and well distributed RAINFALL. Generally susceptible to PESTS and DISEASES.

Forms of the variety typica - There are eight forms of which only the first, *typica,* is used for commercial planting.

(1) typica - The outer covering of the fruit may range from shades of green through orange green (bronze) to brownish red (russet)

(ii) navasi - Outer covering of the fruit green. Fibrous portion (mesocarp) of immature fruit somewhat sweet and edible with a nutty flavour. Husk soft. Nut water insipid, of no commercial value.

Similar to *tamisan. taban, cayamis* in the Philippines, *kalapa tebu* in Indonesia, *Kaithathali i*n India.

(iii) gon thembili - Outer covering of the fruit and rachis of leaf ivory yellow. Water of tender nut usually insipid. Nuts fairly large, outturn low. Oil content relatively high, 69.2%.

Similar to *garing* in Phillippines and *klapa kuning* in Malaya.

(iv) ran thembili - Immature fruits 2 - 3 months old have a distinctive bright pink (carmine) coloration in the region around the point of attachment. The outer covering of the fruit at this region and the mesocarp (fibrous portion) and endocarp of the nut are also pink in colour. At 4-6 months old the epicarp is green but the mesocarp in the basal portion of the fruit is pink in colour. Husk soft. Oil said to be of medicinal value.

(v) porapol - Trees have a characteristic appearance with somewhat tapering trunks and sparse crowns and look as if they lack vigour. The husked nuts are small and elongated with an exceptionally hard and very thick (about 6 mm, shel). Oil content high, 69.7%. The nuts are used for traditional sport, "Pora Pol" in the Southern parts of the country.

(Similar to *tutupaen* in Philippines).

(vi) bodiri - Prolific bearing palms. Fruits very small requiring about 20 000 nuts to a MT of copra. Each bunch carries 50-100 nuts. Oil content relatively high, 69.6%. There is some degree of overlap of male and female flowering phases.

(Similar to *mapraw puong* in Thailand).

(vii) kamandala - Nuts large, approximately 1½ times the size of the nut of the form *typica,* similar to *San Ramon* nuts of the Philippines but not so globose. Requires 2 700 nuts per ton of copra. Few nuts per bunch. Distribution restricted to the Southern Province of Sri Lanka.

(Similar to *lupisan* in Philippines, *kappadaam* in India and Markan in New Guinea).

(viii) dikiri pol - Instead of a cavity lined with the hard kernel and containing nut water, a light but firm jelly-like tissue fills the interior of the nut. This soft meat is considered a delicacy. Two to three nuts in each bunch are of this type and will not germinate while the other nuts are of the usual type but may give rise to trees of the **dikiri** type when planted.

(Similar to *makapuno* in Phillippines and *thairu thengai in* India).

Forms of the variety nana

(1) **pumila** - (green) Outer covering of the fruit and rachis of fronds green. Inflorescence yellowish green. Fruits have characteristic longitudinal wrinkling at the distal end and one or two transverse contrictions.

(ii) **eburnea** - (yellow) Outer covering of the fruit and rachis of fronds ivory yellow. Young fruits often have a greenish tinge. Inflorescence a paler yellow. Palms may or may not have trunk expanded at base to form a bole. Flowering phases may or may not overlap.

(iii) **regia** - (red) Outer covering of the fruit and rachis of fronds orange red. Inflorescence orange. Nut water not as sweet as in the king coconut. Oil content very low, 65.2 per cent.

(Dwarf palms are referred to as *pugai, lincoranay* in Philippines. *Nu'leka in* Fiji, *cay dua xiem* in Vietnam, *klapa puyoh* or Quails coconut in Malaya.

Forms of the variety aurantiaca

(i) **thembili (rath thembili or King coconut)** - Outer covering of fruit and rachis of frond orange red. Inflorescence orange in colour. Sucrose content of tender nut-water relatively high (5 to 6%) providing a popular refreshing drink. Oil said to be of medicinal value and has a higher melting point than ordinary coconut oil.

(ii) **navasi thembili** - As navasi but with the outer covering of the fruit, rachis of frond and inflorescence orange in colour.

Improved varieties

(a) Tall

(i) **CRIC 60 or Ambakelle tall** - Tall in habit, flowering commences at 5-8 years. Produces 100 nuts/palm/year, on the average. Copra per nut about 220 g. Hardy palms, generally tolerant to pests, diseases and drought. Suitable for planting in all coconut growing areas. Produced on a large scale at the Isolated Seed Garden, Ambakelle, Rajakadaluwa.

(ii) **Ambakelle special** - As Ambakelle tall but has greater stability of production with less fluctuation of yields in favourable as well as in unfavourable years. Available only in limited quantities, presently reserved for planting in new seed gardens.

(iii) **Moorock tall** - Tall in habit. Produces an average of about 70 nuts/palm/year with copra per nut about 250 g. Available only in limited quantities.

(iv) **San Ramon** - Three colour forms, green, orange green (bronze) and brownish red (russet) are seen. Majestic trees, very tall and straight, nuts large and rounded, high copra content of 350 - 400 g. per nut. Produces as much as 35 - 60 kg copra per palm per year.

(b) Hybrids

(i) **CRIC 65 or dwarf green x tall** - Tall in habit. Flowering commences at 3-4 years. Produces about 120 nuts/palm/year. Copra per nut about 210-215 g. Sensitive to environmental changes, especially moisture stress. Requires well-distributed rainfall without prolonged dry spells and with minimum rainfall intensity of 1500 mm (60 in) annually. Also required well-drained soils of good texture and sufficient depth. Recommended for planting in home gardens and in suitable soil types in areas without prolonged dry spells. Performs especially well where the water-table is high. Produced on a large scale at the Isolated Seed Garden at Ambakelle, Rajakadaluwa.

(ii) **Dwarf yellow x tall** - Similar to *dwarf* green x tall but presently undergoing evaluation. Produced at the Isolated Seed Garden at Ambakelle, Rajakadaluwa.