

Malayan Dwarf Coconut Cultivars

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Coconut palms are broadly classified into two groups, viz., the tall and the dwarfs. The tall are most commonly grown for their nuts as well as for copra and oil. While, the dwarfs are planted for ornamental purpose and for their sweet refreshing tendernut water. Recently, the dwarf varieties have been planted on a large scale in

isolated seed gardens for the production of Dwarf x Tall hybrids. In comparison with the tall varieties, the dwarf varieties are more or less homozygous due to self-pollinating nature (autogamous). The dwarf varieties exhibit three different nut colours, viz., green, yellow and orange.

Malayan Dwarf Cultivars

Three dwarf types of Malaysia, viz., Malayan Yellow Dwarf, Malayan Orange Dwarf and Malayan Green Dwarf were introduced into India about 50 years ago at the New Ambady Estate, Kulasekaram in Tamil Nadu from Sri Lanka. In spite of their long

voyage from Malaysia to India via Sri Lanka, they have retained their original characteristics, as described in literature.

The characteristic features of the Malayan Dwarf cultivars are described here.

Malayan Yellow Dwarf (MYD): In this cultivar, the petiole, spadices and nuts are yellow in colour (*Fig. 1*). The palms commence flowering in about 3-4 years after planting. The yield of nut is about 60 per palm per year with a range of 40 to 90. The copra content in the nut is 129g and the oil content in the copra is 62 per cent.

The tendernut water is sweet



Fig.1 Malayan Yellow Dwarf



Fig.2 Malayan Orange Dwarf

with 6.2g of total sugars and 3.8 g of reducing sugars in 100 ml of water. The tender nut water contains 1.7 mg of free amino acids and 36 ppm of sodium and 1098 ppm of potassium. The quantity of tender nut water is about 320 ml/nut (*Table 1*).

In Malaysia, the tender nut of Malayan Yellow Dwarf are consumed in large quantities.

In India, a large scale direct introduction has been done during 1985 at the Seed Garden Complex, Munderi Farm, Nilambur, Kerala for utilizing as a parental material for large scale production of hybrids.

Kerala Agricultural University (KAU), has developed a hybrid (Kera Sree) involving MYD as male parent and WCT as female parent.

The world famous MAWA hybrid was developed at the Coconut Research Station, Ivory coast, in which the female parent is MYD and male parent is West African Tall. In this combination, the recovery of hybrids is very high i.e., almost 100 percent due to the homogeneity of both the parents.

Malayan Orange Dwarf (MOD): This cultivar is popularly known as Malayan Red Dwarf which has been introduced to most of the coconut growing countries of the world. The palms are very attractive with dark orange colour of nuts, spadices and leaf petioles (*Fig.2*) These palms resemble the indigenous Chowghat Orange Dwarf except that the leaf tips of inner whorl in MOD has a characteristic bending. The shape of the nuts in MOD is ovoid while that of COD is almost round. MOD palms commence flowering in about 3-4 years after planting. The palm gives a mean annual yield of 65 nuts with a range of 50 to 100. The copra content is 185g/ nut with 66 per cent oil in the copra.

Table 1 : Quantity and quality of tendernut water in three Malayan Dwarf Cultivars

Cultivars	Volume of water	Total (g/100ml)	Reducing sugars (g/100ml)	Amino acids (mg/100ml)	Na (ppm)	K (ppm)
MYD	320	6.2	3.8	1.7	36	1998
MOD	310	6.7	4.1	1.8	35	2142
MGD	290	3.4	2.3	1.5	19.5	2100

Table 2. Characteristics of Malayan Dwarf Cultivars

Sl. No.	MYD	MOD	MGD
1. Plant height (cm)	376.8	464.5	832.0
2. Girth (cm)	62.9	63.1	74.0
3. Number of functional leaves	31.0	28.3	31.6
4. Length of leaf (cm)	436.0	462.8	505.1
5. No. of leaflets	90.3	89.4	100.1
6. Time taken for flowering (months)	48	50	74
7. No. of inflorescence/year	10.0	10.6	12.0
8. No. of female flowers/inflorescence	22.5	16.6	25.8
9. Length of male phase (days)	16.6	16.3	17.6
10. Length of female phase (days)	5.6	6.6	5.2
11. Gap between male and female phase (days)	Nil	Nil	30
12. Intraspadix overlapping (days) (overlapping of male and female phase in the same inflorescence)	5.5	6.3	—
13. Intraspadix overlapping (days) (overlapping of male and female phase in succeeding inflorescence)	Nil	Nil	2.6
14. Setting percentage	36.0	25.1	34.0
15. No. of nuts/palm/year	60.0	65.0	120.0
16. Shape of fruit (g)	Round	Oval	Oval
17. Weight of fruit (g)	369.8	864.6	724.0
18. Weight of husked nut (g)	236.3	558.0	396.0
19. Weight of kernel (g)	142.3	289.9	183.0
20. Weight of shell (g)	92.17	122.91	119.0
21. Copra content/nut (g)	129.0	185.0	171.5
22. Copra/palm/year (kg)	7.7	12.02	20.58
23. Oil content (%)	62.0	66.0	67.0
24. Oil yield /ha (t)	0.83	1.39	2.41

This cultivar is mostly cultivated for ornamental purpose. However, in countries like Ivory Coast, MOD is being widely used as a parental material for the production of hybrids. The tender nut water of this cultivar is sweet with 6.7 g of total sugars and 4.1g reducing sugar in 100 ml of water. 1.8 mg amino acids concentration in 100 ml and with 35 ppm of sodium and 2142 ppm of potassium. The 7-month old nut of this cultivar contains about 310 ml of water (Table 1).

Malayan Green Dwarf (MGD): This is a semi-tall cultivar even though the name indicates a dwarf type (Fig.3). The height of the palm is about 8 metres and takes about 5 to 6 years for flowering like the tall

palms. This cultivar produces medium sized green nuts. The average yield of nuts is 120 per palm per year with a maximum yield potential of 280 nuts per

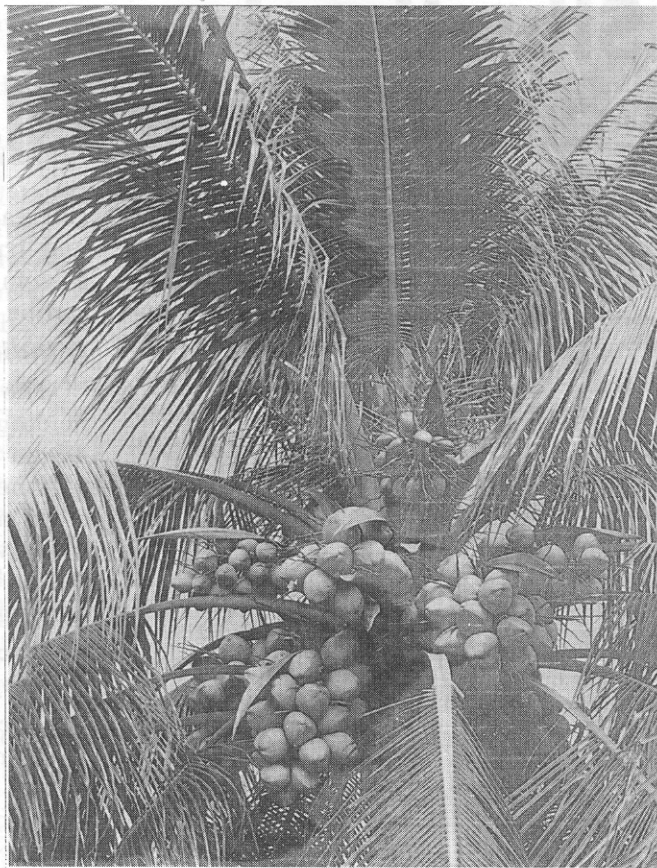


Fig.3 Malayan Green Dwarf

palm. Eventhough this cultivar gives higher yield, it shows a very distinct alternate bearing habit which is the characteristic of typical dwarf palms. The copra con-

tent is 171 g/nut and 67 per cent oil in the copra. This cultivar can be grown on a commercial scale because of its high yield potential. However, this cultivar is not becoming popular among the farmers due to the alternate bearing habit.

The tender nut water in MGD is not as sweet as that of MYD and MOD. The volume of tendernut water per nut varies from 210 ml to 400 ml with a mean of 290 ml. The total sugar content is 3.4g and reducing sugar content is 2.3g per 100 ml of water. Amino acid concentration is 1.5 mg/100 ml and sodium and potassium contents in tendernut water are 19.5 ppm and 2100 ppm respectively (Table 1.).

The important characteristics of MYD, MOD and MGD are presented in Table 2 .

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