Malayan Tall 3 Heads (MLT36)

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Conservation

The Malayan Tall '3 heads' (MLT) is a botanical curiosity. Visitors at the Marc Delorme Research Centre often ask to see this unusual palm. Coconut palms of this type may be of interest to botanical gardens or tourist sites. It has thus been decided in 2003 to harvest seednuts from the 'three heads' and rear them in the research centre nursery. However, it will take several years to know whether the extraordinary characteristic of the parent will be passed on to its progenies.

History

The Malayan Tall '3 heads', found on a plantation of around a thousand hectares with 150,000 palms, has a stem which has branched on two occasions. Normally, the coconut palm only has a single terminal bud which emits all the organs – bunches, fronds and stem. This single bud, which is well protected, functions continually in a system of vertical spirals. In general, 12-18 bunches and fronds are emitted each year. Over the same period, the coconut palm also produces from 20 to 160 cm of stem, depending on the age and variety.

Identification

It is very rare to find coconut palms with more than single leaf crowns. Such abnormalities are usually caused by boring insect attacks, or by large branches falling off and damaging the terminal bud of the coconut palm. In a few rare cases, the damaged bud is not totally destroyed, but its growth is disrupted. This sometimes leads to stem branching. In the case of the MLT, there are no scarring indicating insect attacks, or an accident that might have disrupted the bud and caused branching. Moreover, this branching has occurred twice and at least a year apart. It is likely that the cause of branching was accidental, even though signs of the accident are not visible. However, the fact that the palm has branched twice indicates that it possesses at least a genetic predisposition to branching.

Yield and production

In Côte d'Ivoire, Malayan Talls, on average, flower 5.5 years after planting. Fruit production varies from 30-80 fruits per palm per year when mature, depending on the area. In this respect, it is clear that the palm with three heads has somewhat of an advantage - a rapid count revealed that this palm was carrying a total of more than 150 fruits, each measuring larger than a fist. The large inflorescence is long with numerous spikelets. The fruits in the photograph did not come only from the three headed palm, but from the entire Malayan Tall population preserved in Côte d'Ivoire. These fruits are large, round to slightly oblong, and are sometimes wider than tall, with thin husk and a heavy but quite thin kernel. On the average, these fruits weigh 1550 to 1650g depending on the location, with a nut weighing around 1070g and a kernel of around 485g. Some fruits may germinate while still on the palm. The fruits on the three headed palm are all green, round and relatively small compared to the average fruits of the MLT.

Other information

Malayan Talls were introduced from various countries, notably to test their resistance to coconut diseases. They are susceptible to foliar decay in Vanuatu, and to lethal yellowing in Jamaica, Tanzania and Ghana. However, in Côte d'Ivoire, they are tolerant to bud rot caused by the fungi of the genus *Phytophthora*.

Reference

Ohler JG. 1984. Coconut: Tree of life. FAO plant production and protection paper No. 57. FAO, Rome, Italy.

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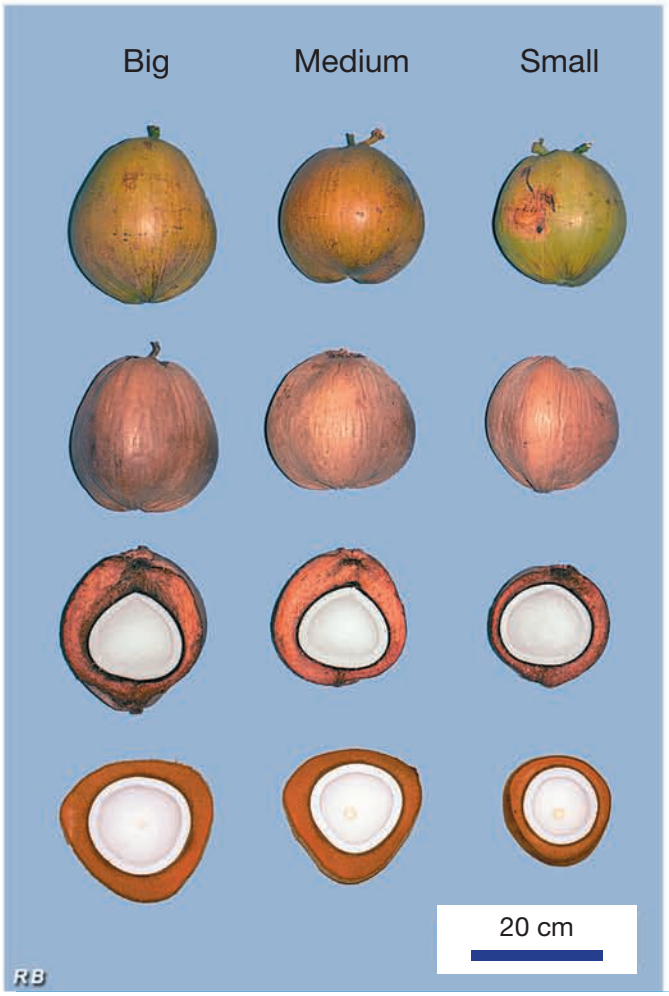

Malayan Yellow Dwarf (MYD)

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Conservation

Malayan Yellow Dwarf (MYD) is conserved in the coconut germplasm centres represented by at least 28 accessions, totalling more than 16 000 palms. MYD can be found in 15 countries: Benin, Brazil, Côte d'Ivoire, Fiji, India, Indonesia, Jamaica, Mexico, Papua New Guinea, Philippines, Tanzania, Thailand, Vanuatu, VietNam and Malaysia.

History

The Malayan Yellow Dwarf is probably the most widely diffused Dwarf coconut in the world. According to Gangolly et al. (1957), the Dwarf palms were introduced into Malaysia between 1890 and 1900 by planters from a place called Kryon or Krion, said to be in Indonesia.

Identification

Pale yellow is the colour of the seedling sprouts, the leaf stalks, the inflorescence and the immature fruits. When the fruits are young (6 to 9 months), their colour is often a pale yellow-green. Many other Yellow Dwarfs (YD) look similar to the MYD, such as the Sri Lanka YD, Nias YD in Indonesia, Chowgat YD in India, Pemba YD in Tanzania, and others. The Samoa YD produces fruits of paler yellow colour and is more tolerant to cyclonic winds in Vanuatu. Using RFLP DNA molecular techniques, Lebrun et al. (1998) confirmed that the Malayan YD and the Ghana YD are identical. On the other hand, all the 'Malayan Yellow Dwarfs' in the world may not be exactly of the same genotype. The youngest leaves at the top of the palm are not erect but are slightly bending downwards. The upper canopy appears like an untidy hair, which can be observed more clearly in MYD than in the Malayan Red or Green Dwarf. Because of its short peduncle, the bunch is well supported by the leaf petioles. MYD produces generally medium-sized, oblong fruits weighting 700 to 800g. But the fruit weight is very variable, with the mean value ranging from 370g (in India) to 1752g (in Vanuatu) depending on environmental factors. Inside the fruits, the nuts are almost spherical and generally weigh 350-450g each.

Yield and production

Under good field conditions, the Malayan Yellow Dwarf starts flowering two years after planting and it may produce 80-100 fruits per year per palm (at a planting density of 205 palms per ha and without irrigation). Water from young nuts is sweet, but not as sweet and tasty as some of the other Green Dwarf cultivars. The kernel is thin and gives rubbery copra, but has a good final oil content of about 69%. MYD is sensitive to dry and unfavourable environmental conditions. It is subject to alternate bearing.

Other information

The Malayan Yellow Dwarf is tolerant to the lethal yellowing disease (LYD) of Jamaica but sensitive to the LYD found in Tanzania and Ghana. MYD is the most utilized cultivar worldwide in coconut breeding. COGENT recommends systematically its use as a genetic control for field experimentation when comparing Dwarf cultivars. MYD is also quite often chosen for developing new technologies such as in vitro culture of zygotic embryos.

References

Gangolly SR, Satyabalan K, Pandalai KM. 1957. Varieties of the coconut. Indian Coconut Journal 10:3-28.

de Nucé de Lamothe M, Rognon F. 1977. Les cocotiers nains à Port Bouët (Côte d'Ivoire). I. Nain Jaune Ghana, Nain Rouge Malaisie, Nain Vert Guinée Equatoriale et Nain Rouge Cameroun. Oléagineux 32:367- 375.

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