**Kinabuhutan Tall (KNT)**

*Lengkey HG, Mangindaan HF*

**Conservation**

Kinabuhutan Tall (KNT) is conserved at the Mapanget Experimental Garden of the Research Institute for Coconut and Palmae in North Sulawesi, Indonesia. The accession has a total of 55 palms.

**History**

This variety was collected from the Kinabuhutan Estate in Talise Island, North Sulawesi.

**Identification**

The Kinabuhutan Tall stem has a girth of 174 cm at 20 cm above the ground and 114 cm at 1.5 m above the ground. The palm has a large-sized bole. The length of the stem with 11 leaf scars is 130 cm. The crown is spherical. The leaves have a petiole length of 164.2 cm and petiole width of 7.7 cm; the petiole thickness is 3.1 cm. The rachis is 482 cm long, with 111.3 leaflets (counted on one side of the leaf) which are 134 cm long. The inflorescence has the following features: length of central axis: 35.9 cm; length of stalk: 42.5 cm; number of female flowers per inflorescence: 16; number of spikelets: 44. The fruits are predominantly green in colour although a small number may be yellowish green or red in colour. Kinabuhutan Tall has a medium-sized fruit that is oblong in shape.

**Yield and production**

Flowering begins five to seven years after planting. Adult palms produce 12-14 bunches per palm per year, with the number of fruit varying from 5 to 8 fruits per bunch. The potential yield of Kinabuhutan Tall may reach 2.5 tons of copra per hectare per year. Whole fruit weight is 1600g, weight of meat, 451g; weight of husk, 334g; and weight of shell, 384g.

**Other information**

Kinabuhutan Tall fruit production is adversely affected by drought. However, it is tolerant to *Phytophthora* sp. Like other Talls, this variety has a good potential as source of planting materials. Its potential for use in breeding programme is currently being evaluated.

**References**


Mamuaya Tall (MAMT)
*Mangindaan HF, Miftahorrachman*

**Conservation**
Mamuaya Tall (MAMT) is only conserved at the Research Institute for Coconut and Palmae (RICP) in Mapanget, North Sulawesi, Indonesia.

**History**
Mamuaya Tall was collected from a small farm in Wasian Bahasa, Dimembe District, Minahasa Regency, North Sulawesi in 1997. Mamuaya, the family name of the owner was given to the cultivar to honour local people. About 100 seednuts were planted in Coconut Research Station at Mapanget, North Sulawesi, which is situated 80 m above sea level, with alluvial soil and annual rainfall of 3500 mm.

**Identification**
Mamuaya Tall is typical of the local Tall coconut varieties. The stem is rather thick and begins with a bole that is thinner. The leaves are normal-sized with a high number of leaflets. Inflorescences are medium-sized. Mamuaya Tall is similar to Mapanget Tall in fruit shape and colour, but this cultivar is unique in the pointed shape of its fruit. Mamuaya Tall produces medium-sized, round-shaped fruits. The nuts inside the fruits are almost round and quite big. Water from young nuts is sweet, but not as sweet as the water of Sagerat Orange Dwarf or Raja Brown Dwarf. The endosperm is thick with a thin husk.

**Yield and production**
Flowering generally begins in this variety from five to six years after planting. Mature palms produce 16-18 bunches per palm with 10 to 14 fruits per bunch. This variety may produce 100-140 fruits per palm year. Whole fruit weight is 1515g; weight of nut, 1190g; weight of split nut, 841g; weight of shell, 240g; weight of meat, 600g; and copra weight, 300g. The endosperm is 1.4 cm thick. The Mamuaya Tall, whose yield may reach 5.8 t of copra per hectare per year, is one of the cultivars recommended by RICP.

**Other information**
Mamuaya Tall has good production potential. Mamuaya Tall has not yet been used as a breeding material, but in the future, it will be used as parent material in the Indonesian hybridization programme.

**Reference**
Mapanget Tall (MPT)

Tampake H, Tenda E

Conservation
At least 5 accessions of various strains of Mapanget Tall are conserved at the Mapanget Experimental Garden of the Research Institute for Coconut and Palmae in North Sulawesi, Indonesia, for a total of more than 200 palms. As a commercial variety, MPT has been planted in almost all coconut areas of the central region in Indonesia.

History
In the 1930s, open-pollinated seeds from high producing palms were collected and the resulting seedlings planted in a 48.4-ha farm at Mapanget which was used by the Department of Agriculture as a demonstration centre. Earlier, the Department selected 100 high-yielding Tall variety palms around Mapanget. Open pollinated seeds from 43 out of the 100 selected palms were planted at Mapanget. These palms were subjected to two trials: a planting distance trial and a performance trial.

Identification
The leaf crown of Mapanget Tall varies from almost spherical to semi-spherical. The stem is normal for a Tall with a girth of 179 cm at 20 cm above ground level and 117 cm at 1.5 m above the ground. MPT also has normal leaf with rachis length of 493 cm and 115 leaflets counted on one side of the leaf. The inflorescence length is 79 cm with about 25 flowers depending on environmental factors and cultural practices. MPT can be recognized by its reddish-brown coloured fruits. Fruit colour is mostly reddish-brown but can be greenish-yellow and green. The shape of fruits in polar view ranges from almost round to egg-shaped. The shape of fruits in equatorial view is almost round to angular. The coconut inside is flat with a thick kernel.

Yield and production
Fruit production generally begins 5-7 years after planting. At the adult stage, Mapanget Tall produces bunches numbers ranging from 12 to 16 per palm per year and fruit numbers ranging from 70 to 100 per palm per year depending on environmental factors and cultural practices. The fruit weight is 1740g; meat weight: 552g (32%); husk weight: 454g (26%); water weight: 461g (26%); and shell weight: 274g (16%). The dry matter content is high (around 55-62%).

Other information
Mapanget Tall is tolerant to drought and to Phytophthora diseases. MPT has a high yield of fruit and good quality copra that is suitable for cooking oil or for the oleochemical industry. MPT also has sweet water that is good for making ‘nata de coco’ or coconut water drink. MPT is used as a parental material in Indonesia’s coconut breeding programme. Its hybrid with Raja Dwarf showed good yield performance and is tolerant to bud rot and nut fall diseases. The hybrid is now under further multilocation tests before it is recommended as a superior coconut hybrid.

References
Mapanget Tall (MPT)

Big  Medium  Small

20 cm