Musa acuminata ssp. malaccensis

*Musa acuminata ssp. malaccensis* [1] is a subspecies of *Musa acuminata*, the wild species involved in the domestication of the vast majority of cultivated bananas. It is one of the main subspecies of *Musa acuminata* to have contributed to the genetics of edible bananas [2][3]. Parthenocarpic wild forms have been documented.

The DH Pahang genebank accession (the first *Musa* genome to be fully sequenced) is an haploid form of *Musa acuminata ssp. malaccensis* whose genome was doubled to obtain an homozygous diploid.

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#### Taxonomy

*Musa acuminata ssp. malaccensis* (Ridl.) Simmonds [1] is an accepted name [4]. Rudy E. Nasution described this taxon at the variety rank [5], but Markku Hakkinen and Henry Vare recommended to maintain it at the subspecies rank [6].

#### Distribution

Peninsular Malaysia: jungles of Malacca, Selangor, Perak [7]. Norman Simmonds notes that on the Malay peninsula, it is typically found at lower elevations, whereas *Musa acuminata* subsp. *microcarpa* grows at higher elevations, and they readily hybridize where they meet [7].

Thailand

Indonesia: Sumatera, Mentawai, Krakatau, West Java, on open places, along stream, or on slope of mountain, at 300-1750 m above sea level [5].
Main morphological characteristics

The description is from Rudy E. Nasution's taxonomic study[^5]. Big clump, up to 10 stems: pseudostems tall and big, 5-6m high, 17-18cm diameter, brown blotching without wax.

Leaf blades lanceolate, big, 2.5-3.25m long, 60-70cm wide, apex truncate, base cuneate with unequal lobes, green, thinly waxy. Petioles 45-55cm long, green or light pink with brown bars at base: their margins erect: mid-rib green. Leaves of young plants usually blotched with bars of purplish brown pigmentation around their mid-ribs.

Inflorescence horizontal then pendulous, up to 2.2m long, it’s peduncle thinly pubescent. First bract scar openly encircling. Fruits and flowers biseriate: 10-12 hands per bunch, 16-18 fruits per hand. Basal hands each bear 17-18 fruits, but on the apex 10-12 fruits.

Photos taken at the IITA field collection in Namulonge, Uganda.

Fruits medium, 8-9cm long, 1.5-1.8cm in diameter, pedicel 1.5-1.7 cm long, tip 0.9-1.2cm long. Pericarp thin, pulp yellow and slightly soft when ripe.

Seeds many, 60-70 per fruit, irregularly angular, depressed, smooth, 6-7mm in diameter, brown
when ripe.

Male bud ovoid, 9-16cm long, 5-8cm across, convolute, blunt tip, dark purple outside, purple inside, thinly waxy.

Basal flower female, 7.5-8.0cm long, 0.7-0.8cm across, yellowish green: style 3.0-3.1cm long, sub-terete: stigma capitate, slightly flat, 0.4-0.5cm in diameter, yellow. Staminode 0.9-1.0cm long, 1.4-1.5cm wide, white or sometimes pink as base but yellow at tip. Free tepal rounded 1.9-2.0cm long, 1.8-1.9cm wide, tip acuminate, translucent.

Male flowers small, 14-16 per hand: ovary 1.1-1.2cm long, 0.3-0.4cm wide, yellowish green: style 3.2-3.3cm long, yellowish: stigma capitate. Compound tepal 3.2-3.3cm long, 1.4-1.5cm wide, pink at base but bright yellow at tip. Free tepal obovate, 1.5-1.6 cm long, 0.9-1.0 cm wide, tip acuminate, translucent. Stamen 3.2-3.3cm long, 0.2 cm wide, white: anther 1.6-1.8cm long, 0.2 cm wide, pink: filament as long as anther. Pollen grains many and fertile.

Host reaction to pests and diseases

*Musa acuminata* ssp. *malaccensis* has been used as a source of resistance to black leaf streak.

Resistance to TR4 has been observed in segregated populations[8]. A gene isolated from a TR4-resistant *Musa acuminata* ssp. *malaccensis* was introduced to a Cavendish banana. One of the lines transformed with the RGA2 gene was disease-free after 3 year confined field trial.[9]

An accession from a collection in Hawaii showed promising resistance to bunchy top.

Vernacular names

'Pisang karok' (Transactions of the Linnean Society of London)

'Pisang Serun' (Rosales et al. 1999)

'Pisang Hutan', 'Cau kole', 'Cau kees', 'Pisang Surong' (Bahasa Indonesian)[5]. 'Pisang hutan' (forest banana) usually refers to any wild banana.

Synonyms

*Musa malaccensis* (Ridl.)[7]

*Musa acuminata* Colla, the Selangor form[10]

*Musa acuminata* Colla var. *malaccensis* (Ridl.) Nasution[5]

Variant

Simmonds speculated that *Musa acuminata* var. *flava* Nasution (previously *Musa flava* Ridl.) was simply a yellow bracted form of subsp. *malaccensis*.[6]

References

4. Musa acuminata subsp. malaccensis in the World Checklist of Selected Plant Families.

Also on this website

Musapedia pages on subspecies of Musa acuminata
Musa acuminata ssp. banksii
Musa acuminata ssp. burmannica
Musa acuminata ssp. malaccensis
Musa acuminata ssp. zebrina

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