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Banana varieties—their classification

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This Agfact explains the naming of bananas according to the scheme devised by Simmonds and Shepherd, in Jamaica, in the 1950s. The scheme is used internationally and shows how the varieties are related to one another. Locally used names have been matched with the "principal clone" names used by Simmonds and Shepherd.

In New South Wales

The banana industry in New South Wales has traditionally been based on two varieties, both of which belong to the Cavendish sub-group. Initially Dwarf Cavendish was the main variety, but this has been replaced by Williams (a taller member of the Cavendish sub-group). In 1982 the area planted to bananas in New South Wales was made up of 95.7 per cent Williams, 0.9 per cent Dwarf Cavendish and 3.4 per cent of other varieties.

Some 1 000 banana varieties have been named throughout the world. Many of these are synonyms—the same variety having a different name in different countries. Only about 30 to 40 are represented in New South Wales and about 50 to 60 in Australia as a whole.

Variety collection

There are good reasons for maintaining, in an arboretum*, a broad range of varieties in any horticultural industry. Of special relevance to bananas in New South Wales is the susceptibility of present varieties to new races of diseases (e.g. Panama disease), the development of new markets in Australia (e.g. ethnic consumer groups) and adaptation to subtropical climatic conditions.

It is therefore important to know what varieties we have, how they are related to one another and how they perform. (For performance characteristics see Agfact H6.2.5, *Banana varieties—their performance.*)

Naming varieties

Bananas are named according to their genus, genome* and variety (though only the last is used locally). For example:

Genus	Genome	Variety name
<i>Musa</i>	AAB group	Lady's Finger
or <i>Musa</i>	AAA group, Cavendish sub-group	Williams

All bananas belong to the genus *Musa*. Within the genus there are several groups which differ in their genetic makeup (or genomes). There are seven genomes altogether. These are:

diploids (2 sets of chromosomes)	triploids (3 sets of chromosomes)	tetraploids (4 sets of chromosomes)
AA	AAA	AAAA
AB	AAB	ABBB
	ABB	

The letters A and B have special meaning. The edible bananas are thought to have developed from two species—*Musa acuminata* (A) and *Musa balbisiana* (B). Some varieties show only *acuminata* features, and these belong to the genomes AA, AAA and AAAA. Others show both *acuminata* and *balbisiana* features and belong to the other genome groups.

Some distinguishing features of A and B plants are shown in figure 1. Other points of difference include the bunch stalk, which is hairy in A and smooth in B.

The genomic groups have varying numbers of chromosome sets in the nucleus of the cells. If they have two sets (e.g. AB and AA) they are called diploids, if three then triploids and if four then tetraploids.

* a botanical garden of trees.

* genetic composition

Principal clone names

Within the genomic groups further grouping takes place. For example, the AAA group is subdivided into three and the Cavendish sub-group further divided into four, as follows:

- AAA—Gros Michel
 - Cavendish sub-group
 - Dwarf Cavendish
 - Giant Cavendish
 - Robusta
 - Pisang masak hijau
 - Red, Green Red

In table 1 the names of the banana varieties used in New South Wales have been grouped according to the principal clone and genome. Since the industry in New South Wales is based on members of the Giant Cavendish group, our interest centres there. Many mutations occur within this group (for example, Williams, Mons Mari, Cavendish N, C and S, New Guinea Cavendish). Their performance is discussed in Agfact H6.2.5, *Banana varieties—their performance*.

Non-edible bananas

There are four species of bananas in New South Wales which are non-edible because they are full of seeds. The spread of these is not

encouraged since problems could arise with the control of bunchy top disease if they became established in the bush of the North Coast Region of New South Wales. They are:

Musa acuminata ssp., known as Nimbin seedling, a tall banana plant with narrow upright leaves and deep-set suckers.

Musa balbisiana, known as Burringbar seedling, shorter than Nimbin seedling and slower growing. The suckers lean outward from the parent.

Musa ornata, an ornamental species growing to 3 m in height. Bracts are pink and the bunch is upright.

Musa velutina, an ornamental species with red furry fruit and upright bunches. The plant is less than 2 m in height.

Two other members of the banana family (Musaceae) are grown as ornamentals in Sydney and Melbourne. Their distribution in the quarantine areas of the North Coast is discouraged because of potential problems with bunchy top disease. These plants belong to the genus *Ensete* and are frequently called Abyssinian banana. The pseudostem is loose and they do not produce suckers. One species has red midribs and the other green midribs. They grow slowly and produce a bunch every 4 to 7 years; the fruit is filled with large seeds.

Table 1. Banana varieties grouped according to genome, principle clone name and New South Wales variety name.

Genome	Principal clone	NSW variety name	Genome	Principal clone	NSW variety name
AA	Sucrier	Sucrier	AAA	Red	Red Dacca, Red Rajah, Agriswar
AB	Ney Poovan	Not known in NSW		Green Red	Dacca, Golden Gros Michel
AAA	Gros Michel	Gros Michel, Highgate	AAB	Plantain sub-group	
	Cavendish sub-group			French Plantain	Not known in NSW
	Dwarf Cavendish	Dwarf Parfitt (extra dwarf)		Corne Plantain	Corne Plantain
		Dwarf Cavendish		Horne Plantain	Horne Plantain
	Giant Cavendish	Cavendish S		Pisang kelat	Not known in NSW
		Chinese Cavendish		Pisang rajah	Pisang rajah
		Cavendish C		Mysore	Not known in NSW
		New Guinea Cavendish		Maia maoli	Not known in NSW
		Williams (p)		Silk	Sugar type Lady's Finger
		Cavendish N		Pome	Lady's Finger
		Hochuchu	ABB	Bluggoe	Plantain, River Plantain, Silver Bluggoe
		Hsien Jen Chiao		Pisang awak	Ducasse
		Williams		—	Blue Lubin, Blue Java
		Bennett	AAAA	Bred bananas	Bodles Altafort, 2390
		Viemama	ABBB	Klue teparod	Not known in NSW
		Mons Mari			
	Robusta	Robusta, Bungulan, Congo			
	Pisang masak hijau	Lacatan, Williams (Loader)			

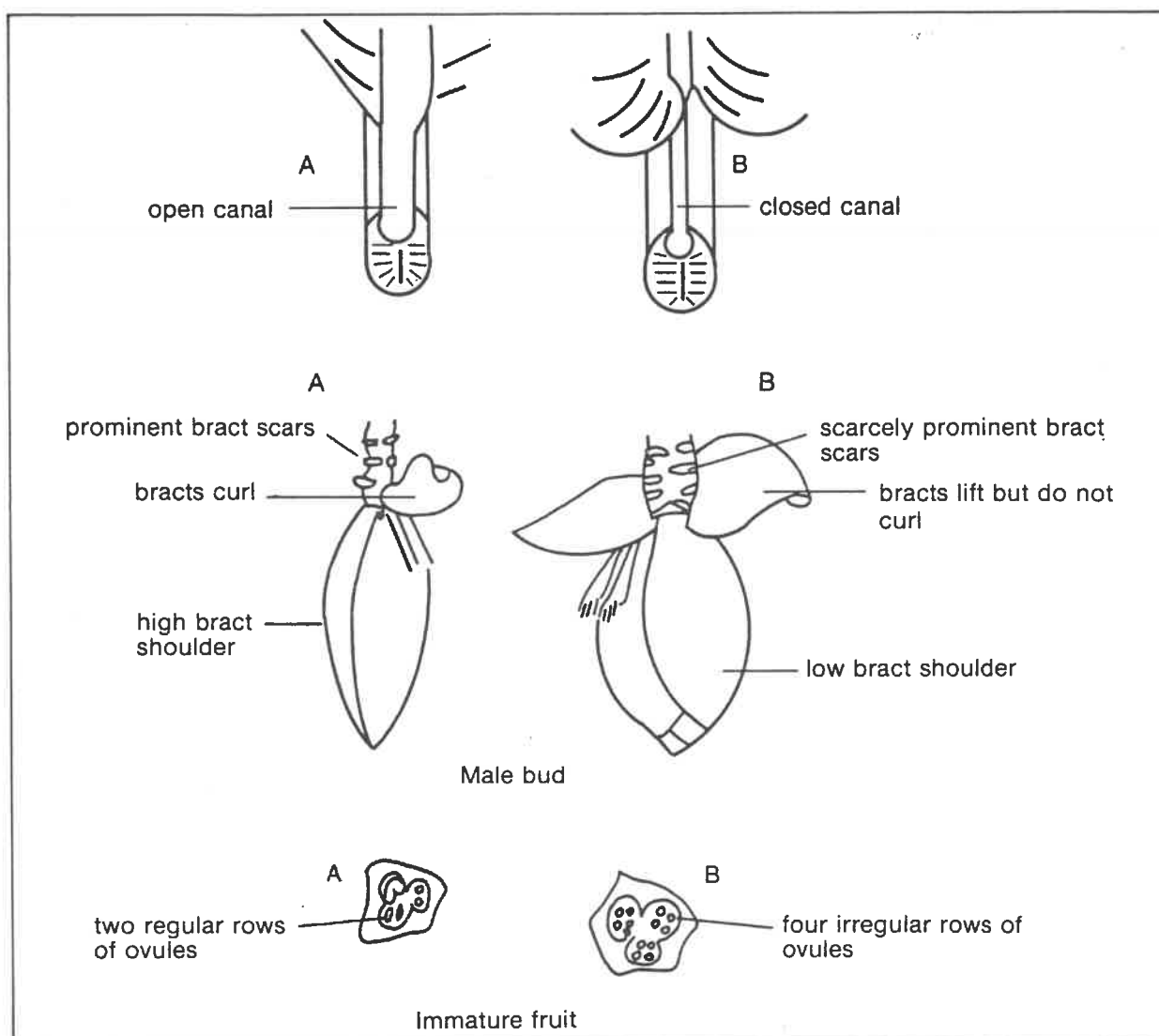


Figure 1. Some distinguishing features of *acuminata* (A) and *balbisiana* (B) genomes (after Simmonds and Shepherd, 1955).

Notes on edible varieties

Varieties are listed in alphabetical order.

Agriswar—see Red.

Bennett—a selection from Williams, with a more rapid crop cycle (bunch to bunch).

Blue Java—see Blue Lubin.

Blue Lubin—an undescribed member of the ABB group. It has small, waxy fruit and is susceptible to anthracnose when green. The plant is similar in appearance to Bluggoe.

Bluggoe—also called Plantain, but is not a true plantain. The fruit are large and angular and suitable for cooking.

Bodles Altafort—produced by the Banana Breeding Research Scheme, Jamaica, and released in the 1960s. It is a very tall banana which is susceptible to wind damage. It performs poorly in New South Wales.

Bungulan—see Robusta.

Cavendish C—along with Cavendish N and S, was produced by a plant selection program in Queensland. Similar in height to Chinese and New Guinea Cavendish but yields less.

Cavendish N—slightly taller than New Guinea Cavendish but yields less.

Cavendish S—shortest of the Queensland selections. It is semi-dwarf in stature, about halfway between Dwarf Cavendish and Chinese Cavendish.

Chinese Cavendish—a Cavendish sub-group mutation, origin uncertain, shortest of the Giant Cavendish group.

Congo—see Robusta.

Corne Plantain—a tall variety with a lot of black pigmentation on the pseudostem, petioles and midribs. The best cooking banana available in New South Wales.

Dacca—see Green Red.

Ducasse—see Pisang awak.

Dwarf Cavendish—yields well, more susceptible to bunchy top than Williams. Bunch emergence restricted during winter, producing “choked” bunches.

Dwarf Parfitt—an extreme dwarf of the Cavendish group. Bunches always choke in New South Wales.

Golden Gros Michel—see Green Red.

Green Red—also called Dacca or Golden Gros Michel. Belongs to the Red-Green Red group. Green Red occurs in populations of Red but the process is not reversible. The plants are large and vigorous but bunches are small.

Gros Michel—a big, vigorous plant that bears heavy bunches of large fruit. Susceptible to Panama disease. Performs better on warmer sites.

Highgate—a dwarf mutant of Gros Michel. It performs poorly in New South Wales. The leaves die prematurely with the onset of cool conditions and the fruit usually fails to mature satisfactorily.

Hochuchu—introduced from Taiwan in the 1940s where it is grown under the name Bei Jiao (North Banana). It is one of the main varieties in Taiwan.

Horne Plantain—recently introduced from North Queensland. A tall plant with large fruit. The bunch has no bell.

Hsien Jen Chiao—a major variety in Taiwan.

Lacatan—see Pisang masak hijau.

Lady's Finger—see Pome.

Mons Mari—originated as a sport in a Dwarf Cavendish plantation at Buderim Mountain, Queensland, in about 1908. It was named after the property on which it was discovered.

New Guinea Cavendish—a member of the Giant Cavendish group that is shorter than Williams but equally productive. May require propping.

Pisang awak—also called Ducasse. A relatively disease and drought resistant banana used as windbreaks for Williams plantations in New South Wales.

Pisang masak hijau—also called Lacatan or Williams (Loader). It was found as a sport in a Williams plantation at Coffs Harbour, New South Wales.

Pisang rajah—a vigorous plant with sweet fruit, but not a very attractive dessert banana. Allied to the plantain sub-group.

Plantain—two true plantains are present in New South Wales, these are Horne Plantain and Corne Plantain. The Bluggoe is also referred to as a plantain in popular usage.

Pome—also called Lady's Finger. Grown in New South Wales as a sweet dessert banana. Susceptible to Panama disease. Used as a windbreak for Williams plantations.

Red—also known as Red Dacca, Red Rajah or Agriswar. Characterised by its vigorous growth and red skinned fruit.

Red Dacca—see Red.

Red Rajah—see Red.

River Plantain—see Silver Bluggoe.

Robusta—also called Bungulan or Congo. A tall member of the Cavendish sub-group which suffers badly from wind damage in exposed situations.

Silk—also called Sugar type (Lady's Finger). The fruit skin splits when ripe. The flesh is dead white and the flavour is attractively sweet-acid. Shorter and less vigorous than Pome, with which it can be confused.

Silver Bluggoe—a waxy mutant of Bluggoe. It is also called River Plantain, but it is not a true plantain.

Sucrier—it can be distinguished from other banana varieties by the rich chocolate-brown coloration of the sheaths and by the yellowish, virtually waxless foliage. Bunches are small and yields are low.

Sugar type (Lady's Finger)—see Silk.

Viemama—a tall member of the Cavendish group originating in Fiji.

Williams—the most widely grown cultivar in New South Wales. It has heavy bunches of large fruit and is the most productive variety of the Giant Cavendish group in New South Wales.

Williams (Loader)—see Pisang masak hijau.

Williams (p)—a mutation from Williams which has furry fruit skin. It is slightly shorter and yields less than Williams.

FURTHER INFORMATION

Contact your local district horticulturist for further information.

The taxonomy and origins of the cultivated bananas. N. W. Simmonds and K. Shepherd. *J. Linn. Soc. Bot.*, 1955, **55**, 302-12.

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