

# **Gourd, squash, pumpkin, melon: What's the difference?**

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## ABSTRACT

This article is an introduction, with pictures, of plants of the gourd family (Cucurbitaceae) which you are likely to find cultivated in Indonesia. Along the way we also touch on a few other plants which are unmistakably *not* gourds, but which through ignorance have sometimes been confused with gourds.

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## VERSION HISTORY

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# Gourd, squash, pumpkin, melon: What's the difference?

by  
David Mead and Michael Martens

This article is concerned with plants of the gourd family (Cucurbitaceae) that are found in Indonesia. In particular, we concentrate on species which are likely to be cultivated, either because the fruit is edible or because it has some other use. Along the way we also touch on a few other plants which are unmistakably *not* gourds, but which through ignorance have sometimes been confused with gourds.

In most cases we have identified plants at the species level, and also supply the common name(s) in English<sup>1</sup> and Indonesian. Below the species level, a number of the plants discussed in this guide have multiple varieties—technically, cultivar groups or simply cultivars—which are not only distinguished scientifically but which may also be separately identified in the language where you work. Compare for example winter melon, which has long-, oblong- and round-fruited varieties:

*Benincasa hispida* (Thunb.) Cogn. (Longa Group)

*Benincasa hispida* (Thunb.) Cogn. (Oblongata Group)

*Benincasa hispida* (Thunb.) Cogn. (Rotundata Group)

In the discussions below we indicate where cultivar groups exist, and in a few cases have even included succinct descriptions of the features which distinguish one variety from another. If you need to pursue cultivar groups in greater depth than we cover here, a useful site is the University of Melbourne's Multilingual Multiscript Plant Name Database (M.M.P.N.D.) at [http://www.plantnames.unimelb.edu.au/Sorting/List\\_bot.html](http://www.plantnames.unimelb.edu.au/Sorting/List_bot.html). From the home page, follow links to list of names, and choose the relevant genus name. This will take you to where you can find an up-to-date list of cultivar groups for any of the plant species mentioned in this article.

This article is arranged as a series of questions. If you already know the answer, feel free to skip to the next section. ☺

## What is a gourd?

Gourds are Old World plants, and one of the earliest plants grown by man, having been cultivated since at least 6000 BC. The English word 'gourd' comes from French *gourde*, which in turn derives from Latin *cucurbita*, which by almost all accounts referred to the

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<sup>1</sup> Because of our own backgrounds, here 'English' primarily means American English. We apologize to those who speak British, Australian, or other varieties of English which have different terms, or which use the same terms but with different reference.

bottle gourd. In a number of respects, the bottle gourd may be considered the prototypical gourd, so we begin with its description.

Bottle gourds, *Lagenaria siceraria* (Molina) Standl., are thought to have originated in Africa, but attained worldwide distribution many thousands of years ago, either through the assistance of man and/or because the naturally buoyant dried fruits were distributed by sea currents.

The name ‘bottle gourd’ (also ‘calabash gourd,’ Indonesian *labu kendi*, *labu botol*, *labu air*, *labu putih*) derives from the fact that the dried shells of the fruit of this plant make good containers. For that matter, though, the shells have been put to many other uses in various cultures, including as bowls, measuring cups, ladles, spoons, baskets, floats, pipes, bird houses, musical instruments, and (in parts of New Guinea) even penis sheaths. Perhaps encouraging their various uses, bottle gourds come in a wide variety of shapes, so much so that at one time botanists distinguished several different species. Today, however, modern scholarship has decided that there is only one species worldwide,<sup>2</sup> though with various cultivar groups which we do not elaborate on here. As if this natural variety weren’t enough—fruits may be round, crook-necked, coiled, or egg-, apple-, bottle-, dumbbell- or spoon-shaped—people have also been known to manipulate the shape of the gourds for a particular purpose by bending the fruits while still young and pliable, by putting bands around them, or by having them grow inside plaited sheaths.



dried bottle gourds for  
sale in west Texas

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While the leaves and young shoots of the bottle gourd plant are edible, in many places young bottle gourd fruits are bitter, and are considered ‘famine food’ at best—eaten only in times of necessity. In the Mediterranean area and India, however, certain cultivars with an elongated shape were developed in which the young, immature fruits were also edible, much like a summer squash (see below).<sup>3</sup> In recent years an edible variety of bottle gourd has also made its way into Indonesia, where it is marketed under the name *labu cina*. Immature fruits have light green to white skin and white flesh.

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<sup>2</sup> A minor species, *L. sphaerica* ‘wild bottle gourd,’ occurs only in Africa.

<sup>3</sup> Bottle gourds are still used in Sicilian cuisine, where they are called *cocuzzi*, as opposed to squash which are *cocozelle* (Janick, Paris and Parrish 2007:1454). In Asian grocery stores in the U.S., we have seen them marketed as ‘long squash.’



*labu cina* (a variety of edible bottle gourd) at a market in Baubau, Buton Island, Indonesia

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a *labu cina* fruit sliced lengthwise (tiles in background are 12 inches square)

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Below we mention other kinds of gourds, including wax gourds, bitter gourds and snake gourds. Like bottle gourds, these are also Old World species. But while speaking of bottle gourds, this is a good time to digress to the topic of calabashes.

## What is a calabash?

The English word ‘calabash’ comes from French *calebasse*, from Portuguese *calabaca*. The Portuguese in turn got their word from the Arabic compound, *qar* ‘gourd’ + *aybas* ‘dry,’ and that’s pretty much what a calabash is: the dried-out, ligneous (i.e. woody) shell of a gourd—namely the bottle gourd—usually put to some use, for example as a flask.

Portuguese and Spanish explorers reaching the New World, however, got a bit of a surprise, because here, growing in the tropics, was a kind of tree—not a vine—with large, roundish fruits about the size of a pomelo, the shell of which could be dried and used almost identically to calabashes from gourds. In English this tree, *Crescentia cujete* L., became known as the calabash tree or (less frequently and less correctly) the ‘gourd tree.’ Since its discovery by Westerners, this tree has been spread to all tropical areas of the world, including Indonesia, where the tree is called *maja*, *majapahit* or *berenuk*.





calabash tree with  
fruits, Mamasa area of  
West Sulawesi, Indonesia

photograph by Michael Martens  
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dried shell and half-shell of  
fruits from a calabash tree,  
Buton Island, Indonesia

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Distinguishing between the two kinds of calabashes requires only a very small amount of detective work. The one kind of calabash comes from a vine, the other from a tree; the one often has a neck and a belly, the other is always spherical or at best ovoid, without any neck.

Unfortunately, lacking a sense of historicity, some botanists have muddled the waters by referring to the New World *C. cujete* as the ‘true calabash.’ We regard this assertion to be purely modern invention, since it cannot be ‘true’ from either an historical or an etymological perspective. Nonetheless, as lexicographers we need to take care in our own dictionary work. Not all calabashes are from gourds, neither are all gourds calabashes, and when calabashes come into play, we should distinguish whether an artifact is from the vine *Lagenaria siceraria* or from the tree *Crescentia cujete*.

## What is a jack?

In old England, calabashes (from bottle gourds) were also made into a kind of lamp with an oil wick or candle inside, the shell thus providing some protection from the elements. This kind of simple lamp was called a ‘jack,’ and a person who used such a lamp a

‘jacker.’ Certain unscrupulous people, who used to prowl the English roadsides with their jacks looking to waylay late-night travelers, became known as ‘highwayman jackers.’ This compound was later shorted to simply ‘hijacker,’ from which we get our verb ‘hijack’ by back-formation. The word ‘jack’ is also preserved in our word ‘jack-o-lantern.’ Jack-o-lanterns, however, are now made out of pumpkins rather than gourds (more on pumpkins below).

Jacks of course have absolutely nothing to do with lexicography work in the Indonesian context, but this was such an interesting story we felt it just had to be told.

## What is a bael tree?

The bael tree, *Aegle marmelos* (L.) Corr. Serr., also called the Bengal quince, is native to India, but was introduced into Indonesia in antiquity. This tree is easily recognized from its thorned branches and from its round, hard-shelled, baseball-sized fruit which has a sticky, marmalade-like aromatic pulp and white, densely hairy (‘wooly’) seeds.

This tree has very little to do with gourds—while the fruit of this tree is eaten or consumed for medicinal purposes, it is never turned into a calabash—except in a single respect. When the calabash tree (see above) was introduced into Indonesia, people tended to see a resemblance between the two trees, and often applied the name of the bael tree to the calabash tree. For example, in the Makasar language of South Sulawesi the bael tree is called *bila nikanre* (literally ‘edible *bila*’), while the calabash tree is called *bila pai* (literally ‘bitter *bila*’).



bael fruit near Kolkata, West Bengal, India

photograph by J. M. Garg  
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In Indonesian both trees are called *maja* and *majapahit*, which has resulted in some confusion in *Kamus Besar*—and sometimes by extension in our own dictionaries, in cases where we have overly relied on *Kamus Besar*. Compare for example the discrepancies found in just the following entries:

**maja** 1. pohon yg berkembang biak dng biji, tingginya ... *Aegle marmelos*; 2. nama buah pohon maja, bentuk buah bulat atau agak lonjong, daging buah berwarna jingga, rasanya pahit, dapat digunakan sbg obat diare, kolera, disentri.

**labu air** buah maja yg kulitnya dapat dibuat cibuk.

We can, of course, understand this second entry as referring to a calabash made from the fruit of the calabash tree, even though it is not really a *labu* and even though *Kamus Besar* relates *maja* only to the species *Aegle marmelos*. With examples like this before us, let us resolve to be clear in our own dictionary entries, and not leave it up to our readers to interpolate our meanings.

## Who was Raden Wijaya?

Raden Wijaya was the founder, in AD 1293, of Majapahit, the last and greatest of the three Hindu Javanese kingdoms. In his day he saw: (a) his father-in-law defeat the Malay kingdom of Śrīwijaya (former capital near present-day Palembang in Sumatra); (b) his father-in-law refuse to pay tribute to Kublai Khan, grandson of Genghis Khan and the then ruler of the Mongol Yuan dynasty in China; (c) his father-in-law murdered by a usurper; and (d) that usurper destroyed by an expedition of a ‘thousand ships’ sent by Kublai Khan to Java to punish his father-in-law. Raden Wijaya himself was smart enough to ally himself at first with the invaders, but later turned and surprise-attacked them, forcing them to return to China. (This would make a great epic movie, by the way.)



mortuary (deified) portrayal of Raden Wijaya, originally located at Candi Simping, Blitar, East Java

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The Majapahit kingdom got its name because the bael fruits, *buah maja*, where Raden Wijaya established his capital (just southwest of present-day Surabaya) were unripe or bitter, *pahit* (legends differ slightly on this point).<sup>4</sup> The Majapahit kingdom reached its pinnacle in the mid-fourteenth century when it held sway from Sumatra to the Philippines, and it endured until around 1500.

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<sup>4</sup> Some websites report that the Majapahit kingdom was named after the tree *Crescentia cujete*, but this is impossible since the calabash tree was as yet unknown in this part of the world.



On another historical note, the defeated rulers of Śrīwijaya, after a hundred year stint in what is now present-day Singapore,<sup>5</sup> by around AD 1400 had become Muslims and founded the Malacca sultanate on the Malay peninsula opposite Sumatra. When their capital was sacked by the Portuguese in 1511, this became a major impetus for Islam to spread to other reaches of the archipelago. Malacca, incidentally, is also named after a tree, in this case the Indian gooseberry (*Phyllanthus emblica* L.), Indonesian *melaka*, but that's a story for another day.

## What are squashes and pumpkins?

Squashes and pumpkins can be defined as 'any plant of the genus *Cucurbita*,' and thus are sometimes collectively referred to as 'cucurbits.' This is somewhat of a misnomer, however, because by nearly all accounts the Latin word *cucurbita* originally referred to the bottle gourd (see above under 'What is a gourd?'). While we must recognize that the genus *name* comes from Latin, rest assured that no Roman soldier or proconsul ever ate a squash or pumpkin *fruit*. This is because plants of genus *Cucurbita* are all New World species.

If you stop and think about it, when squashes and pumpkins were first brought from the New World back to the Old World, speakers of every European language faced a challenge: what were these new plants to be called? Since the fruits were similar to gourds, many people simply extended whatever term their language already had for 'gourd' to cover these new species. But borrowing a new term, or redefining an old one (as with Latin *cucurbita*) were also possibilities.

In American English, we find all three developments. The term 'gourd' was extended to some cucurbits, primarily inedible varieties with hard shells (and which mainly have an ornamental use). From Indians living in New England we borrowed the term *askutasquash*—later shortened simply to 'squash'—a phrase which literally meant 'vegetables consumed while green' (thus properly referring to summer squashes, see below). And for particularly large, round varieties we applied the term 'pumpkin,' which has now entirely lost its older use of referring to a kind of melon.

Squashes and pumpkins come in a variety of shapes, sizes and colors. But beware: not every variety is a separate species. In general squashes and pumpkins can be divided into two main camps: summer squashes and winter squashes. Summer and winter squashes have several distinguishing characteristics, summarized in the following table.

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<sup>5</sup> When Sir Thomas Stamford Raffles arrived in 1819, he had not forgotten his history. He deliberately chose Singapore as his base so that the British could be viewed as (at least partially) inheriting the Śrīwijayan legacy.

summer squash	winter squash
plants determinate, <sup>6</sup> bush-like in growth habit	plants mostly indeterminate or vining in growth habit
fruits ready to be harvested roughly forty days after plant has become established	growing season requires eighty to over a hundred days for harvestable fruits
fruits with a soft rind	fruits with a hard rind
fruits eaten while seeds are still immature	fruits eaten after seeds have matured
fruits perishable, edible for up to only about two weeks after harvest	fruits can be stored for several weeks or months after harvest

For those of you who wish to go beyond simply listing ‘*Cucurbita* spp.’ in your own lexicography work, we supply the following chart of species and related cultivar types, modified slightly from Maynard and Maynard (2003). For pictures, a useful place to start is Earthbound Farm’s [Pumpkin Identification Chart](#) (note that this site includes a few cultivar groups not listed in the following chart, and vice versa).

species	type	description
<i>C. ficifolia</i> Bouché	chilacayote, fig leaf gourd	Oblong round fruit mottled green and white. Flesh white.
<i>C. argyrosperma</i> <i>C. Huber</i>	cushaw squash	Striped, green or white hard rind. Pear shaped or with a straight or curved neck.
<i>C. moschata</i> Duchesne	tropical pumpkin	Round, oblate, or irregular shape. Green, buff, yellow, or piebald hard rind.
	cheese pumpkin	Variable shape, smooth, hard, buff-colored rind.
	butternut squash	Bottle shaped, with buff-colored rind. Flesh orange and smooth textured.

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<sup>6</sup> The terms ‘determinate’ (sometimes misspelled ‘determinant’) and ‘indeterminate’ refer to the growth patterns of plants. A determinate plant tends to be ‘bushy’: the stems grow to a certain length, then develop flowers at the tips, which then develop into fruits. The plant bears all its fruit in a short time, then ceases to grow. An indeterminate plant tends to be ‘vining’: it develops flowers on the sides of the stems, not the tips, and the stems continue to grow longer with time. The plant continues to bear fruit as it grows.

species	type	description
<i>C. maxima</i> Duchesne	banana squash	Elongated fruit pointed at the ends. Orange or pink moderately hard rind.
	delicious squash	Top shaped. Orange or green hard rind.
	Hubbard squash	Round in the middle tapering at each end. Blue, orange, or green hard warty rind.
	marrow squash	Lemon-shaped with orange hard rind.
	show pumpkin	Very large globular, sutured, light orange fruit. Moderately hard rind.
	turban squash	Turban shaped with a large button. Hard rind.
<i>C. pepo</i> L.	acorn squash	Acorn-shaped, grooved fruit. Dark green, orange, or white hard rind.
	cocozelle squash	Long, cylindrical, bulbous blossom end. Striped or variegated green soft rind.
	crookneck squash	Elongated with narrow curved neck. Yellow soft rind.
	ornamental gourd	Variously shaped and colored. Smooth or warty hard rind.
	pumpkin	Large, round, oval oblate shape. Mostly orange, sometimes white relatively soft rind.
	Cinderella pumpkin	Deeply lobed with a squat, low profile. Orange-red rind.
	scallop squash, patty pan squash	Flattened with scalloped margins. White, yellow, green, or bicolored soft rind.
	spaghetti squash (Am.), vegetable marrow (Brit.)	Short, tapered, cylindrical. Light green. Flesh of mature fruit has characteristic long fibrous strands.
	straightneck squash	Long, cylindrical, yellow soft rind. This is the prototypical yellow summer squash.
	zucchini squash	Uniformly cylindrical. Green or yellow to gray soft rind.



tropical pumpkins  
(*Cucurbita moschata*) for  
sale at a market in North  
Sulawesi, Indonesia

photograph by Michael Martens  
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## What is a cucumber?

The cucumber, *Cucumis sativus* L., originated in western Asia, probably Himalayan India, where it has been cultivated for at least three thousand years. From India it spread both westward into Europe and eastward into China.



cucumbers for sale at a  
market in Ereke, Buton  
Island, Indonesia

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Today the cucumber is known throughout Indonesia (Indonesian *timun*, *ketimun*), so that it hardly needs any introduction. However, the antiquity of the cucumber in Southeast Asia has not been definitively settled. One researcher, Robert Blust, dates the introduction of the cucumber to the Austronesian world at approximately 2000 BC. His evidence is linguistic nature, namely the widespread reflexes of a protoform which he reconstructs as \*qatimun ‘cucumber’ (Blust and Trussel 2010). Present-day forms include among others Itawis (Philippines) *asímun*, Kelabit (Malaysia) *simun*, Muna (Sulawesi) *ghotimu* and Motu (Oceanic) *asemo*.<sup>7</sup>

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<sup>7</sup> Curiously, forms with nasal excrescence preceding the *t* are also widely found in areas of western Indonesia, including Simeulue (Barrier Islands of Sumatra) *antimon*, Ngaju Dayak *hantimon*, Old Javanese *hantimun*, Pendau *antimun*, Wolio *ontimu* and Proto-Kaili-Pamona \**antimu*. In our opinion,

## What is a gherkin?

Cucumbers come in a number of varieties, but don't be confused—it's all the same species. In Indonesia you may come across a particular variety in which the fruits are especially long, with dark green skin, going by the name of *ketimun jepang*. In English this variety is called 'long cucumber' or 'Japanese cucumber,' but scientifically it is *C. sativus* L. var. *sativus* (Japanese Group).

At the other end of the size spectrum are cucumbers which have been cultivated for their *small* fruits that are primarily used in pickling. In addition, when used for pickling the fruits are usually harvested while still in an immature state—the seeds are underdeveloped, and the skin is covered with soft spines that rub off in your hand. When I (David) was growing up, we always just called these 'pickling cucumbers,' as opposed to the ordinary, store-bought 'slicing cucumbers.' As I learned later, however, pickling cucumbers can also be called gherkins. The name 'gherkin' comes from Dutch (now archaic) *agurkje* 'small cucumber,' with diminutive suffix *-je*, if you want to remember it that way. By the way, my mom still prefers pickling cucumbers for regular eating too—they don't have to be pickled!

## What is a bur cucumber?

That much said, there is another, closely related species, *Cucumis anguria* L., which some people consider to be the 'true' gherkin. This plant also go by the names cohombro, bur cucumber, West Indian cucumber and West Indian gherkin.<sup>8</sup> The fruits grow to only two or three inches long, and are eaten fresh, pickled, or in curries. We don't think this plant is found in Indonesia, but just in case there are at least four ways to distinguish it from your ordinary cucumber (*C. sativus*): (a) the prickly appearance of the fruits; (b) the small fruit size; (c) its long fruit stems (peduncles), which can be up to eight inches in length; and (d) its leaves, which are palmately lobed (think of 'fingers' radiating from a central core) with toothed edges.



bur cucumber plant and fruit

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another term which deserves investigation is \*bətiŋ, as seen in Sundanese *bonteng* 'cucumber' and Kulisusu *woci* 'overripe cucumber fruit with a tough, brown or yellowed skin.'

<sup>8</sup> These last two names are misnomers, because the plant originates in Africa. It is now thought that slaves may have brought it from Africa to the West Indies, where it quickly became established and botanists later 'discovered' it.



## What is a creeping cucumber?

The so-called creeping cucumber (*Melothira pendula* L.), also sometimes referred to as the Guadeloupe cucumber, is a New World species. Although native to eastern North America, it has recently been introduced into Southeast Asia including Taiwan, and also Malaysia where it has garnered the name *timun tikus*. Whether this plant occurs yet in Indonesia is unknown to us. Fruits are oblong, less than an inch long—some have compared them to jelly beans—growing on stems slightly over an inch long. Only the light green, immature fruits are eaten; fruits turn dark green then black as they mature.



*timun tikus* fruits in  
Selangor, Malaysia

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## What is a flying cucumber?

Flying cucumbers can't really fly, but they have seeds which can, well, glide. This plant has been described as an Asian liana (a liana is a vine with a thick, woody stem), and it is native to Indonesia, at least Java, and perhaps other islands as well. Its football-sized fruits grow high in the forest canopy—hence its more pedestrian name, 'tropical Asian climbing gourd'—but its seeds are what make it famous. With two membranous wings, seeds can exceed five inches in wingspan—the largest gliding seed known! This plant is identified scientifically as *Alsomitra macrocarpa* (Blume) M.Roem. The Indonesian name we have seen for it on a few websites is *labu sumpung*. This species is not edible nor particularly useful, but it certainly has a curiosity value.



samara (winged seed) of a  
tropical Asian climbing gourd

photograph by Deena Decker-Walters  
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Network News <http://www.cucurbit.org/>

## What is a watermelon?

Botanically speaking, a watermelon is any plant of species *Citrullus lanatus* (Thunb.) Matsum. & Nakai.<sup>9</sup> Watermelons originate from southwest Africa, where its wild (and generally insipid or bitter) cousins still grow today. However, people tracing the watermelon's spread from there have run into two conundrums. First, watermelon seeds and remains have been recovered from Egyptian tombs dating to the dawn of the second millennium (2000) BC. However, archeologists believe that at this time agriculture wasn't yet being practiced in southern Africa, where watermelons must have first been domesticated. Second, it is also unclear how the watermelon could have been present in Egypt at such an early date, but not have spread elsewhere. Watermelons reached India only around AD 800, and from there to China around AD 1100. From China watermelons were introduced to Indonesia. In its westward expansion, the watermelon was introduced to Europe and the New World via Spain, but only after that country was conquered by the Moors (the earliest positive occurrence of watermelons in Spain is dated to AD 961).

In Indonesian watermelons are called *semangka*, although the terms *mendikai* and *tembikai* are also used. In some locales, watermelons are regarded as a kind of 'cucumber,' compare for example even the informal Malay term *timun cina*, used in reference to watermelons. Several languages of western Central Sulawesi refer to watermelons as *ntimu ndola* or some variant thereof (the meaning of *ndola* is uncertain).<sup>10</sup>

We will not discuss the many varieties of commercial watermelons, except to say that in general watermelons can be classified by size (weight), shape of the fruit (round, oblong), the color the rind (dark green, light green, mottled, etc.), the color of the flesh (red, orange, yellow, etc.), and, in the modern day, whether it is seeded or seedless (Indonesian: *semangka biji lunak*). Red-fruited watermelons are high in lycopene, the same compound which gives tomatoes their red color. Orange-fruited watermelons are high in carotene, which of course is also responsible for the orange color of carrots.



watermelon with red flesh,  
Buton Island, Indonesia

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<sup>9</sup> In fact, outside of Africa all cultivated varieties of watermelon belong to the so-called *Vulgaris* Group. Discarded synonyms include *Citrullus edulis* and *Citrullus vulgaris*.

<sup>10</sup> In some other languages of central and southeastern Sulawesi, the term *balongka* is used to refer to watermelons. In northern Sulawesi, however, *balongka* and its cognates refer instead to the bottle gourd.



watermelon with yellow flesh, known locally as 'pineapple watermelon' because of its color, Buton Island, Indonesia

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As with the seeds of some pumpkins, squashes and melons, watermelon seeds are edible and may go by their own name. In Indonesian the term *kuaci* refers primarily to dried, salted watermelon seeds (from Hokkien *koa* 'melon, cucumber, etc.' + *chí* 'seed'), but it is now also used in a broader sense to refer to other kinds of dried edible seeds, compare *kuaci labu* (or *kuaci biji labu*) 'dried pumpkin seeds,'<sup>11</sup> *kuaci hitam* 'dried, unhulled sunflower seeds,' *kuaci putih* 'dried sunflower seed kernels,' etc.

## What is a colocynth?

The colocynth, *Citrullus colocynthis* (L.) Schrad., pronounced CALL-uh-sinth, is a close relative of the watermelon. However, colocynth fruits are only about the size of an orange, with greenish mottled skin turning yellow when ripe. Its English names also include wild desert gourd, bitter apple, bitter cucumber and vine of Sodom.



bag of colocynth fruits and a sliced-open ripe colocynth, both from Morocco

photographs by Deena Decker-Walters  
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Colocynths are not found in Indonesia. Rather, it is a plant of Africa and the Near East, where its edible seeds have been consumed by humans for thousands of years. The fruits themselves, however, are inedible and bitter, and when consumed can act as a strong laxative. In fact colocynth fruits have been described as one of the most powerful purgatives known and "capable, in overdoses, of producing violent irritation of the stomach and bowels, with severe griping pains, bloody stools, etc." (Wood 1856:549). There is good reason to believe that colocynths were the poisonous 'gourds' unwittingly fed to the company of prophets in II Kings 4:39-40,<sup>12</sup> which is the main reason we mention colocynths here.

<sup>11</sup> In the U.S. another name for prepared pumpkin and squash seeds is 'pepitas,' from Mexican influence.

<sup>12</sup> Paris and Janick (2008:48-49) hypothesize that the Hebrew name recorded in II Kings 4:39, *paqqu'ōt*, comes from the triconsonantal root *pq'* meaning 'split,' in reference to the fruit which split open when aged.

## What plant shaded Jonah?

The Hebrew word *qiyqāyôn* occurs five times in the Old Testament, all in the fourth chapter of Jonah. Translators of the Septuagint (second and first century BC Greek translation of the Hebrew Old Testament) rendered this word as *kolokunthē* (colocynth), from which arose the church tradition that Jonah was shaded by a gourd—though Christian mosaics usually picture the bottle gourd, *Legenaria siceraria*, not the colocynth *Citrullus colocynthus* (which is not a strongly vining plant). The King James Version of Jonah 4:6 reflects this tradition: “And the LORD God prepared a gourd, and made it to come up over Jonah . . .” Other translations simply say ‘vine’ (compare BIS *sebuah tanaman menjalar* ‘a vining plant’), or even more generically ‘plant.’

Whatever picture(s) come to your mind, this plant was likely not a gourd, nor a melon, nor anything else in the gourd family. Rather, people studying ancient texts have come to the conclusion that Hebrew *qiyqāyôn* most likely referred to the castor plant, *Ricinus communis* L. (United Bible Societies 1980). This plant is probably best known for its ‘beans’ (technically castor *nuts*), from which is derived castor oil. Castor plants have broad, palm-shaped leaves and non-woody, erect stems which can grow up to fifteen feet in a season.<sup>13</sup> Such a plant would have made good shade for Jonah. In fact the Indonesian translation known as the Terjemahan Baru uses the term *pohon jarak* ‘castor plant’ in Jonah chapter 4.



castor plants growing in  
La Gomera, Spain

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<http://www.floracyberia.net/>

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<sup>13</sup> Be careful not to confuse—as many Indonesians do—the castor plant, *pohon jarak*, with the physic nut plant, *pohon jarak pagar* (scientific name *Jatropha curcas* L.). While the seeds of both plants yield a usable oil—respectively castor oil and jatropha oil—only the physic nut plant has a woody stem.



## What is a melon?

In the Western mind, a prototypical melon is a large, round fruit with thick skin and sweet-tasting flesh. Melons are distinguished from watermelons (described above) in that a watermelon's seeds are spread throughout the flesh (*menyebar dalam daging buah*), while a melon's seeds are located in a central cavity (*terkumpul di tengah dalam rongga buah*). In this section we indulge the Western mindset by discussing sweet melons first, which are properly termed 'dessert melons.' Be forewarned, however, that a number of other plants go under the rubric of melon, but are used more like vegetables—and may be better known in your part of Indonesia. These we discuss in subsequent sections.

The various types of sweet melons, including cantaloupes, muskmelons, and honeydews, are all classed as a single species, *Cucumis melo* L. Melons are thus genetically more closely related to cucumbers than they are to watermelons. About the best we can say concerning the origin of melons is that they were 'native to Asia,' although a few botanists still espouse an out-of-Africa theory. At any rate, melons appear to have been grown throughout the old world (China, Central Asia, Mesopotamia, and the Mediterranean area) since the Middle Bronze Age.

In a traditional classification, the following are the four most important varieties of sweet melons, at least insofar as it pertains to our field of study (some varieties important to Central Asia have been omitted).

*C. melo* subsp. *melo* (Cantalupensis Group) – European or 'true' cantaloupes, the fruits usually grooved with a hard, warty or scaly rind and orange or green flesh. In Indonesian fruits of this type are called *semangka londo*, *semangka belanda* or *blewah*.

*C. melo* subsp. *melo* (Reticulatus Group) – technically muskmelons or rock melons, but what Americans are used to calling 'cantaloupes'; the fruits round or oval, lobed or unlobed, and having a netted (reticulated) surface and sweet orange or green flesh. Indonesian name unknown.

Cantaloupes and muskmelons together are sometimes termed 'summer melons' because they ripen relatively early during the growing season.

*C. melo* subsp. *melo* (Inodorus Group) – honeydews, sometimes also called 'winter melons,' the fruits round and having either a smooth or an irregular texture, the skin never netted (the term *inodorus* is from Latin 'not fragrant'). The only Indonesian term we have seen for fruits of this type is simply *melon*, which—like its English counterpart—probably serves as a cover term for summer melons as well. A kind of yellow- or golden-skinned honeydew goes by the name of *melon emas* or *melon mas*.

*C. melo* subsp. *agrestis* (Makuwa Group) – Japanese cantaloupe, Korean melon, long grown in the East and distinguished from the other varieties in having short seeds, generally less than 9 mm long (versus cantaloupes, muskmelons, and honeydews with



seeds generally more than 9 mm long). Although Japanese cantaloupes have not been described as occurring in Indonesia, we have seen references to a *melon makuwa* in the Indonesian context, which is undoubtedly this variety.<sup>14</sup>



Korean melons for sale in Arlington, TX; note the white 'sutures'

photograph by Michael Martens  
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muskmelons (labelled 'melon sky rocket' and 'rock melon') at a supermarket in Makassar, Indonesia

photograph by Michael Martens  
Public domain

In equatorial regions, sweet melons require high elevation (between 300 and 1000 m) to grow well and produce large fruits. Perhaps because of this, sweet melons have been slow to catch on in Indonesia, which is still viewed as a 'potential market' melon-wise. Nonetheless, dessert melons have slowly been increasing in popularity as a recognized *pencuci mulut* over the past two decades. In Jakarta and other places of Indonesia, a kind of oblong melon with smooth, golden to pale yellow skin called *timun suri*<sup>15</sup> has become popular during Ramadan, when it is associated with breaking the fast—but practically disappears off the market the rest of the year.

<sup>14</sup> Both Nuryanto (2007:15-16) and Setiadi and Parimin (2008:15) describe a kind of melon called *mentimun poan* as heavy (up to 5 kg) and oval-cylindrical, with smooth skin that is light yellow with white stripes. From the description, it sounds like this *could* be a variety of Japanese melon. On the other hand, these authors also classify *mentimun poan* as a non-sweet melon (*melon tipe tak manis*). Without having seen a live sample nor even a picture of this melon, we remain a bit mystified as to its classification.

<sup>15</sup> Or roughly translated, 'queen of the cucumbers'—even though it is a melon. We have not been able to trace the history of *timun suri* in Indonesia, nor do we know whether it is to be considered its own variety or subsumed under some other, already-identified variety of dessert melon. Seeds are short, ~ 8 mm long.



*timun suri* melon purchased  
in Makassar, Indonesia

photograph by Timothy Friberg  
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## What is an oriental pickling melon?

Oriental pickling melons, along with the snap melons discussed below, are the only two varieties of ‘true melons’ (*C. melo*) which have a long history in East and Southeast Asia. Both are ‘culinary vegetables,’ as opposed to the sweet ‘dessert melons’ described above. Botanically, oriental pickling melons are classified as *Cucumis melo* L. subsp. *agrestis* (Conomon Group). The fruits are cylindrical and smooth, with green, white, or striped skin. The flesh is white or greenish, tasting neither sweet nor musky. Besides being pickled, it is also used fresh as an ingredient in *lalapan* (mixed raw vegetables) and *rujak* (fruit salad with spicy sauce).



*ketimun krai* (a variety of  
oriental pickling melon)  
purchased in Makassar,  
Indonesia

photograph by Timothy Friberg  
Public domain

In English, this plant and its fruits also go by the names ‘long melon,’ ‘Chinese melon,’ and ‘Chinese white cucumber.’ According to Nuryanto (2007:15), the Indonesian name is *ketimun krai*—though we have not been able to confirm this in any dictionaries available to us.

## What is a snap melon?

Snap melons are classified as *Cucumis melo* L. subsp. *agrestis* (Momordica Group). According to our sources, snap melons have long been cultivated in India and other Southeast Asian countries. The fruits are small, and oval or cylindrical. The flesh is said to be white or pale orange, mealy, insipid or slightly sour. The most distinctive characteristic

of this melon, however, is that “the surface of the fruit cracks as maturity approaches and the fruit disintegrates when barely ripe” (Munger, Kyle, and Robinson 1993:52). We don’t know whether this melon is present in Indonesia, but if it is, you should be able to easily recognize it.

### What is a Queen Anne’s pocket melon?

Fruits of this melon variety are small, round to oblong, ranging from two and a half to five inches long, and are mottled, giving the outward appearance of small watermelons. The flesh is white and edible. By all accounts, however, a distinguishing characteristic of this plant is the scent emitted by the ripe fruits, variously described as ‘sweet,’ ‘perfume-like,’ and ‘powerful.’ Reportedly in Victorian England women would carry a fruit with them for its aroma, whence the name Queen Anne’s pocket melon. This melon is said to originate from tropical Africa.



Queen Anne’s pocket melons, eastern U.S.

photograph by Michelle Keltner  
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Officially known as *Cucumis melo* L. subsp. *agrestis* (Dudaim Group), the fruits are also known by several other English names including fragrant melon, smell melon, stink melon, wild muskmelon, tiger melon, dudaim melon, apple melon, pomegranate melon, vegetable pomegranate, vine pomegranate and plum granny (the name ‘plum granny’ is an Appalachian adaptation of ‘pomegranate’). We have yet to come across a Malay or Indonesian name for this fruit. However we think we have found this plant growing in Southeast Sulawesi, where its local names include *balongga* in Tolaki and *tambuloko* in Kulisusu.

### What is a mandrake?

Although in the Indonesian context there is a fruit called *buah dudaim*, it is not the ‘dudaim melon’ mentioned in the preceding section. Rather, the term *buah dudaim* refers to mandrakes, sometimes also called mandragoras.<sup>16</sup> This plant, *Mandragora officinarum* L., is a member of the Solanaceae or nightshade family, in other words it is more closely related to the tomato and the potato than it is to melons.

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<sup>16</sup> Apparently from French *main de gloire* ‘hand of glory’ (Dymock, Warden and Hooper 1891:582).



mandrake fruits near  
Heidelberg, Germany

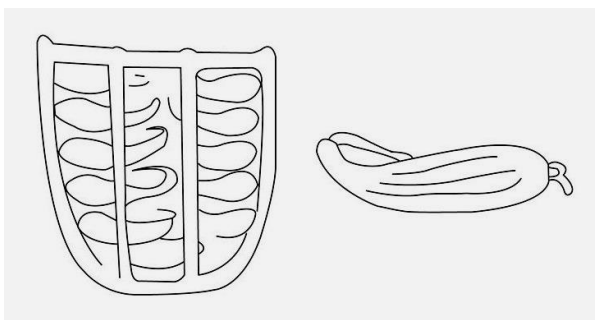
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Mandrakes are native to the Mediterranean area. Today the plant is considered poisonous, but in antiquity people believed its fruits could arouse sexual desire and help barren women conceive (Hughes 2004:377), and in this association it is even mentioned twice in the Bible—see Genesis 30:14–16 and Song of Solomon 7:13. The Hebrew word for these fruits is *dûdā'iyim* (cf. Hebrew *dôd* ‘erotic love’), for which the Indonesian translation known as the Terjemahan Baru (TB) transliterates *buah dudaim*.

### What is a chate melon?

Chate melons, *Cucumis melo* L. subsp. *agrestis* (Adzhur Group), are *not* found in Indonesia. Rather, the chate melon is a plant of the eastern Mediterranean (the name ‘chate’ is a French corruption of Egyptian Arabic *qatta*). It sometimes goes by the alternate name ‘cucumber melon.’

Externally chate melons are similar to cucumbers (*C. sativus*), except that they have a bent shape and a thin covering of somewhat downy hairs (cucumbers are smooth, or have small soft spines when immature). Even as late as the nineteenth century, chate melons were the principle type of melon cultivated in Egypt (Andrews 1956:368, footnote 3), but today its area of cultivation has been considerably decreased, being displaced by the cucumber.



drawings of a basket of  
melons and a melon with  
attached stem and flower,  
from 18th Dynasty tombs,  
Egypt

reproduced in Janick, Paris and Parrish  
(2007:1449)

Chate melons also appear to be illustrated in ancient Egyptian wall paintings (see Janick, Paris and Parrish 2007:1448-1449), and—particularly because evidence for cucumbers in



Egypt at an early date is lacking—a number of authorities consider it likely that it was chate melons, not cucumbers, that the Hebrew slaves ate in Egypt (cf. Num. 11:5).<sup>17</sup>

## What is a winter melon?

Fruits of the winter melon, *Benincasa hispida* (Thunb.) Cogn. (Indonesian *kundur*), are eaten as a vegetable. Young fruits are fuzzy, but by maturity the fruit is smooth with a waxy coating, hence the other common names ‘wax melon’ and ‘wax gourd’ (it also goes by the names ‘white gourd’ and ‘ash gourd’). Winter melons are native to Southeast Asia, and require warm weather to grow but, like winter squash, winter melon fruits have excellent storability. Although termed a ‘melon,’ the fruits are not sweet. Three cultivar groups are distinguished, with respectively long, oblong and round fruits, but all are classed as a single species.



immature winter melon fruits (sold under the name ‘fuzzy squash’) at an Asian market in Arlington, TX; bottom pane shows closeup of fruit’s downy surface

photographs by Michael Martens  
Public domain



mature, waxy-coated winter melons grown in Coral Gables, Florida; the small melon at bottom is a wild variety

photograph by Deena Decker-Walters  
copyright protected, courtesy of The Cucurbit Network  
News <http://www.cucurbit.org/>

<sup>17</sup> The earliest confirmed date of cucumbers in Mesopotamia is around 600 BC (Nicholson and Shaw 2000:635). Cf. Dalby (2003:115) who writes, “The chate melon ... and the cucumber are Greek *sikyos*, Latin *cucumis*. Many references to ‘cucumber’ in English translations of ancient texts should be understood as ‘chate melon.’”



The species described in the above paragraph should not be confused with honeydews or other melons of the *Cucumis melo* L. Inodorus Group, which sometimes also go by the collective name of ‘winter melons’ (see above under ‘What is a melon?’).

## What is a bitter melon?

Bitter melon, *Momordica charantia* L., in Indonesian called *peria*,<sup>18</sup> was first domesticated in eastern India and/or China. Correspondingly, people sometimes distinguish between two varieties: an ‘Indian type’ which is dark green with pointy ends and prominent wrinkled ridges; and a ‘Chinese type’ which is light green with blunt ends, somewhat resembling a warty, undulating cucumber (hence sometimes the other English name, ‘bitter cucumber’). In either case, the fruits are eaten immature, while the flesh is still green and not too, too bitter. (Young leaves and stem tops are also edible.) Ripe fruits eventually split into segments which curl back, exposing the hollow seed cavity. Besides the cultivated varieties, bitter melons also grow wild in Indonesia, and may even be locally abundant.



close-up of a bitter melon of the Indian type

photograph by FlyingToaster  
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bitter melons of the Chinese type

photograph by J. Stander  
Public domain

If you’re like us, you’ll remember the first time you ever ate bitter melon—its bitter taste simply *can’t* be overlooked. Even Indonesians have an expression, *sudah tahu peria pahit*, meaning something like ‘to learn from costly or bitter experience.’

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<sup>18</sup> Also *paria*, *pare* or *pepare*, the latter two apparently from Javanese influence.

## What is a spiny gourd?

Spiny gourds are named from their fruits, which are densely covered with soft spines. These gourds are one to two inches long, roughly egg shaped with a point at the apex, and turn yellow when ripe. The scientific name is *Momordica dioica* Roxb. ex Willd. (*dioica* refers to the fact that male and female flowers are borne on separate plants). Other English common names include spine gourd, teasle gourd and small bitter gourd. Although a close relative of the bitter gourds described above, spiny gourd fruits are said to have a milder, sweeter taste.



spiny gourds for sale in  
Khagrachari, Bangladesh

photograph courtesy of [World-Crops.com](http://World-Crops.com), used by permission

Whilst spiny gourds are grown from Pakistan to Japan, it is generally regarded as an underutilized food plant. Not only can the green or greenish-yellow fruits be cooked as a vegetable, but the tuberous roots and young shoots and leaves are also edible. Fruits are marketed in Singapore, and it may be coming to Indonesia.

## What is luffa?

Luffa, also known as loufa, loofa, loofah, luffah, sponge gourd, and dishrag gourd, is another plant in the gourd family. The fruits are soft and edible when young, and can be cooked and eaten like squash or okra. As the fruits mature, however, they develop a tough fibrous network, which when removed and dried can be used as a scrubbing sponge. The general Indonesian name for luffa is *ketola* or *petola*.<sup>19</sup> Two main species are grown in Indonesia, which are easily differentiated by the shape of the fruit.

*Luffa acutangula* (L.) Roxb. (English ‘angled luffa,’ ‘ridged luffa,’ ‘angled gourd,’ ‘ridged gourd,’ ‘Chinese okra,’ ‘elephant okra,’ Indonesian *ketola segi*, *petola segi*, *gambas*, *oyong*), fruit with sharp, elevated ridges running the length of the fruit.

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<sup>19</sup> Both names are from Sanskrit *paṭola* ‘a gourd, *Trichosanthes dioica* Roxb.’

*Luffa aegyptiaca* Mill.<sup>20</sup> (English ‘smooth luffa,’ Indonesian *ketola manis*, *petola manis*, *petola buntal*, *blustru*, *belustru*) fruit is smooth with longitudinal lines, 1 to 2 ft in length.



angled luffa at an Asian market in Arlington, TX

photograph by Michael Martens  
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smooth luffa at the same Asian market in Arlington, TX

photograph by Michael Martens  
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## What is a snake gourd?

Snake gourds all belong to the genus *Trichosanthes*.<sup>21</sup> Snake gourds have white, frilly flowers which bloom at night. Fruits are long, growing up to six feet. Commercial producers usually grow snake gourds from overhead trellises, with the fruits dangling below, a method which produces the straightest fruits. Whilst long popular in India and China, snake gourds were unknown in Europe until the first seeds arrived in 1720.

The most commonly cultivated species of snake gourd worldwide is *T. cucumerina* L., known in Indonesia variously as *ketola ular*, *petola ular*, *pare ular* or *pare belut*, thus related at least in folk conception to the luffa and the bitter melon. This species has several cultivar groups, including some in which the rind is white with green stripes, or even entirely white. Fruits are said to have a taste and texture similar to cucumbers.

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<sup>20</sup> Also sometimes identified in the literature under the synonym *Luffa cylindrica* (L.) Roem.

<sup>21</sup> Snake gourds are not to be confused with snake melons (*Cucumis melo* L. Flexuosus Group), also called ‘snake cucumber’ or ‘Armenian cucumber,’ with fruits up to three feet long and three inches in diameter. Snake melons apparently do not occur in Indonesia.



snake gourd (*T. cucumerina*),  
green with white stripes

photograph by Sangfroid  
Public Domain

There are also at least two other species present in Indonesia, *T. wallichiana* (Ser.) Wight, called *jari buaya*, *pedandang gagak* or *ketimun gajah*, and *T. cucumeroides* (Ser.) Maxim., called *timun-timun*. In addition, some inedible varieties of snake gourd have recently gained popularity as ornamentals, though this may be more of a Western phenomenon.

### What is a pointed gourd?

Pointed gourds, *Trichosanthes dioica* Roxb., are closely related to the snake gourds. Fruits are green, sometimes with white stripes, up to about six inches long, although there are also round-fruited cultivars with fruits about two inches in diameter. For commercial production plants are usually grown on trellises.



pointed gourds at an exotic  
crop fair, Ryton Gardens,  
Warwickshire, UK

photograph by Fluffymuppet  
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It is thought that pointed gourds originate in the Assam and Bengal area of eastern India (Singh, Singh and Singh 1992). Fruits are sometimes marketed under their Hindi or



Bengali names, *parwal* and *potol*. Interestingly the Sanskrit name for this fruit is *paṭola*. Although the *name* for this plant has made its way into Indonesia (where it refers to luffa or sometimes snake gourds), we have no knowledge of the plant itself being grown here. At present pointed gourds can be found in Singapore markets, and this plant may eventually make its way to Indonesia.

Pointed gourds may bear a superficial resemblance to the fruits of some varieties of oriental pickling melons. However, pointed gourd fruits usually do not exceed six inches. Note also that the pointed gourd is a dioecious perennial (dioecious means plants are either male or female). versus melons which are monoecious annuals (male and female flowers on the same vine).

### What is chayote?

In addition to ‘chayote,’ the other English common name for *Sechium edule* (Jacq.) Sw. is ‘vegetable pear.’ This name is exceedingly apt, because the fruit—which is used as a vegetable—is the size, shape and light-green color of a pear. The major difference in appearance is that, unlike pears, the skin is naturally wrinkled and folded. As you probably already suspected from the name ‘chayote,’ this plant is a New World species and thus was introduced to Indonesia in the European colonial period. In Indonesia chayote is called *labu siam* or *labu jepang*.<sup>22</sup> Besides the usual variety, there are two other cultivar groups, one having spiny fruits and the other having white-skinned fruits.



chayote for sale, Réunion Island

photograph by David Monniaux  
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### What is an ivy gourd?

Ivy gourd, *Coccinia grandis* (L.) J. Voigt, is distributed from Africa to Asia and the Pacific, including Indonesia, where it is known as *pepasan* (or *papasan*) or sometimes colloquially as *timun kalimantan*. The English name ‘ivy gourd’ comes from the leaf shape

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<sup>22</sup> Several languages of Central Sulawesi use a term for chayote based on the stem *-bisa*, e.g., Sedoa, Napu and Behoa *bisa*; Kaili and Uma *tabisa*; Moma and Tado *rabisa*. Cf. also Duri (a South Sulawesi language) *rabbisa*. We have no theory about the origin of this stem.



and also the plant's vining habit. Other English names include 'scarlet gourd' and 'scarlet-fruited gourd.'

There seem to be two views about this plant. On the one hand, the plant is edible—both the green immature fruits and the ripe red fruits (ovoid or ellipsoid, about 2-1/2 inches long), as well as the young leaves and shoots—and Asian gardeners are encouraged to grow it for its nutritional value. On the other hand, in places where it has been introduced such as Australia and the Pacific, it has been called a “severe pest” and “an aggressive vine that quickly smothers nearby plants or structures like a blanket” (Starr, Starr and Loope 2003:2).



ivy gourd, Tonga archipelago

photograph by Tau'olunga  
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Whilst we have seen ivy gourd growing wild in parts of Sulawesi (e.g. Buton Island), we have yet to encounter anyone who cultivates it.

## Concluding remarks

When trying to arrive at an accurate understanding of the evolution and domestication of plants of the Cucurbitaceae family, researchers have often had to rely on scanty clues, drawn from archaeological remains, plant iconography, and philology (the study of the meaning of words in ancient texts). Two authors write about this venture:

For historical periods prior to the Renaissance, depictions often lack detail and accuracy, but still can be useful in identification of plant species. Ancient, detailed, and accurate descriptions are even scarcer than ancient images ... Inaccurate, misleading translations, such as “ripe cucumber” for *sikyos pepon*, have made their way into standard reference books and scientific literature, becoming self-perpetuating and difficult to redress. (Paris and Janick 2008:43)

This makes us pause and wonder about our own descriptions. Will our dictionary entries be accurate? Will our descriptions be detailed? Or will they mislead other researchers who are interested in the languages or plants of this part of the world? In our own definitions, let's resolve to be as clear, accurate and informative as possible, and always to include the scientific name once a positive identification has been made.

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