

A guide to some edible legumes of Indonesia

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ABSTRACT

This paper is a pictorial guide along with brief prose descriptions of thirty-six varieties of edible legumes that you may encounter in the Indonesian context. Whilst in the field of agricultural economics it is common to distinguish between legumes used as vegetables (young pods, fresh seeds, and sprouts) versus grain legumes or 'pulses' (marketed as edible dried seeds), this guide covers both together. A final section highlights a few inedible yet well-known or easily recognizable legume species.

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VERSION HISTORY

Version 1 [12 April 2017] Drafted March 2017.
Version 2 [30 April 2017] Added section on kudzu.
Version 3 [26 September 2020] Added sections on coffee senna and red bead tree; modified section on coral trees.

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A guide to some edible legumes of Indonesia

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David Mead

This paper is a guide to edible legumes that you may encounter in the Indonesian context.

When considering edible legumes, the first thing to note is that sometimes the entire young pod is eaten, but other times it is only the seed—the pea or bean—which is eaten. Sometimes the seeds are eaten fresh, but often they are dried and reconstituted (or sprouted) later.

To take a simple example, consider the pigeon pea, *CAJANUS CAJAN* (L.) Millsp. This species has at least two varieties. In one variety the pods, when harvested young and green, are tender enough to be eaten. In either variety you can allow the pods to mature, then harvest the fresh peas. At this stage the peas are green or white (or sometimes green, white and purplish). These can be eaten in much the same way that your typical garden peas are eaten. A third option is to allow the pods to dry, and then harvest the dried peas. At this stage the peas are black, brown, white or white mottled with black. They can be eaten after soaking and boiling, or milled into flour.



Left: Local Vegetables of Thailand (JIRCAS) https://www.jircas.affrc.go.jp/project/value_addition/Vegetables/022.html (accessed February 20, 2017). CC BY 4.0 International. Center: © 2016 by David Mead. Released to the Public Domain (CC0). Right: © 2016 by David Mead. Released to the Public Domain (CC0).

Differences may go beyond simply when the fruit is harvested. For example, when a variety has been developed for its edible pods, not only are the young pods palatable, but it may have been bred for its pods to form early, and the seed to mature slowly, so that there is a long period during which pods can be harvested. Whether the dried beans are tasty may be immaterial. Conversely, a variety developed for its dried beans may have been bred so that the pods all mature at the same time and dry quickly, to make harvesting easier.

Although ‘pigeon peas’ are always called that whether one eats the pods, the fresh seeds or the dried seeds, in other cases different varieties go by different names. Consider for example the species *PISUM SATIVUM* L., which is marketed under at least six different names:

young pods	fresh peas	dried peas
1. snow peas = have flat, edible pods and small seeds 2. snap peas, sugar snap peas = have round edible pods, a cross between garden peas and snow peas	3. peas, green peas, sweet peas, garden peas = fresh peas are shelled and the inedible pods are discarded	4. green split peas = dried peas that have had their outer covering (cuticle) removed, and split along a natural suture; naturally green when dried 5. yellow split peas = dried peas that have had their outer covering (cuticle) removed, and split along a natural suture; naturally yellow when dried 6. field peas = a general term for dried peas, whether whole or split

Perhaps a maximum is reached in the so-called common bean, *PHASEOLUS VULGARIS* L., which depending on variety is variously marketed as follows—and even this list is incomplete.

young pods are eaten	shelled beans are eaten
1. string beans, snap beans = green pods may be round or flattish, and have a tough, fibrous ‘string’ along the margin that is usually removed before eating 2. stringless beans, French beans = green pods without a fibrous string along the margin 3. wax beans = pods are yellow or white 4. purple beans, purple string beans, purple green beans = pod is naturally purple, turns green when cooked	5. black beans = small and black 6. pinto beans = have a mottled appearance 7. kidney beans = red, kidney shaped 8. navy beans = small, white 9. great northern beans = white bean with a flattened shape, larger than navy beans 10. cannellini = white bean, larger than great northern beans

With that introduction, here are several different varieties of legumes with edible pods or beans that you may encounter in the Indonesian context. In two cases mentioned below the tuber is eaten, while another legume is known principally for its edible flowers. Whilst in the field of agronomics it is common to distinguish between legumes used as vegetables (young pods, fresh seeds, and sprouts) versus grain legumes or ‘pulses’ (marketed as edible dried seeds), this guide covers both together. I begin with legumes that grow as bushes or vines, then turn to certain tree species.

A final section includes twenty-two legume species that are not edible, but which you may encounter as shade trees, slender trees of waste places, or weeds. Unlike the sections on edible legumes, which aim at complete coverage, this ‘bonus’ section highlights only a few well-known or easily recognizable species. Unfortunately it has not been possible to give coverage to all legumes which may be known for reasons other than their edibility. Some legumes (including even some of the plants mentioned below) are useful as forage crops for cows and goats. Because of their ability to fix atmospheric nitrogen and improve soil fertility, some legumes (again, including even some of the plants mentioned below) are important in intercropping and crop rotation, or serve as ground covers and green manure. Finally not a few legumes are known and used for the poisons that they contain. At least those I hope to cover in a future guide to some poisonous plants of Indonesia.

1 Bushes and vines

adzuki bean

adzuki bean, red mung bean = *kacang azuki*, *kacang merah* = *VIGNA ANGULARIS* (Willd.) Ohwi & H. Ohashi

Dried adzuki beans are used as food, either cooked or ground into meal, or sprouted and eaten as a vegetable. In one variety the beans are uniformly red, but varieties with white, black, gray and mottled beans are also known.



Left: Commodity Image Gallery, Grain Inspection Packers & Stockyards Administration (GIPSA), USDA. Public Domain. Right: Tracey Slotta, hosted by the USDA-NRCS PLANTS Database. Public Domain.

Adzuki beans have a long history of cultivation from Japan through India, and more recently have been introduced to Africa, the Americas and other parts of Asia. While dried adzuki beans are imported to Indonesia on a small scale, adzuki beans are generally unsuited for cultivation in the tropics.

One of the reasons I mention adzuki beans in this guide is that there seems to be some confusion between adzuki beans and common cowpeas, which *are* grown in Indonesia. For example the current Wikipedia article on “Kacang Azuki” reads in part: “Kacang ini banyak digunakan dalam masakan Indonesia, contohnya sup kacang merah dan sambal goreng krecek. Kacang ini kadang disebut kacang tolo saja atau kacang merah saja”¹—but this description almost certainly applies to cowpeas, not adzuki beans. If there is any doubt, a simple inspection of the plant in bloom should make things clear: adzuki bean plants have yellow flowers, versus cowpeas which have light blue or violet flowers.

Bambara groundnut

Bambara groundnut, Bambara bean, Congo goober, earth pea, hog peanut = *kacang bogor*, *kacang manila* = *VIGNA SUBTERRANEA* (L.) Verdc. [synonyms *VOANDZEIA SUBTERRANEA* (L.) Thouars, *GLYCINE SUBTERRANEA* L.]

Bambara groundnuts have pods that ripen underground, much like peanuts. However they produce better than peanuts or cowpeas in areas with poor soil and little rainfall. Bambara groundnut pods are less than an inch long and contain one or two seeds. The seeds may be eaten fresh (boiled or roasted), while the dried beans are usually milled into flour. The seeds vary in color from black to red, white, and cream, although Indonesian farmers prefer darker varieties, e.g. black, dark brown, dark purple, or dark red (Redjeki, Mayes and Azam-ali 2011:2).



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Bambara groundnuts originate from Africa. They also have a secondary area of cultivation in Thailand, Malaysia and Indonesia. It is thought that Bambara groundnuts were

¹ Wikipedia *Ensiklopedia Bebas*, s.v. “Kacang azuki” https://id.wikipedia.org/wiki/Kacang_azuki (accessed February 12, 2017).

introduced to Indonesia from Africa in the early eighteenth century (Redjeki, Mayes and Azam-ali 2011:1). At present Bambara groundnuts are considered an underutilized crop with a significant potential for increasing, through genetic breeding, desirable characteristics such as earlier maturing and higher yields. Bambara groundnuts are suitable for intercropping with sorghum, millet, maize, yams, and cassava.

chickpea

chickpea, garbanzo bean, Egyptian pea, Bengal gram = *kacang arab*, *kacang ayam*, *kacang putih* = *CICER ARIETINUM* L.

Several varieties of chickpeas are known. The kind I am most familiar with is the light-colored ‘Kabul’ or ‘Kabuli’ variety, also known as garbanzo beans. The ‘Desi’ variety has slightly darker and rougher seeds. Still other (but less common) varieties have brown, black and green seeds.



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Chickpeas originated in what is present-day Turkey. The archeological record indicates chickpeas were in cultivation 7500 years ago, and reached India 4000 years ago. Because chickpeas are a temperate zone crop, however, they are generally unsuitable for the tropics except at high elevations.² Experimental plantings of chickpeas in Indonesia had begun by the 1980s (Van der Maesen 1989b), and chickpeas appear to be an established even if small-scale crop in the highlands of Java.³

On the chance you may encounter chickpeas in cultivation, plants have compound leaves with ten to twenty ‘feathery’ leaflets. Flowers are white, pink, blue or violet. Pods contain up to three seeds. Young pods and fresh seeds are also edible.

² Karsana (1999) suggests that in Indonesia, chickpeas require an elevation of between 450 and 1000 meters (or higher) above sea level.

³ Indonesia is also a small-scale importer of chickpeas. In 2014 imports to Indonesia represented barely 0.05% of world trade in chickpeas according to “World Imports of Chickpeas (garbanzos), dried, shelled, whether or not skinned/split in 2014.” *TrendEconomy*. Online. URL: <http://data.trendeconomy.com/commodities/Import/071320?period=2014> (accessed February 21, 2017).



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Be aware that the Indonesian name *kacang arab* can also refer to pistachios (a.k.a. *kacang fustuk*, *kacang pistacio*), *PISTACIA VERA* L., which is not a legume. The name *kacang ayam* is a calque (loan translation) from English ‘chickpea,’ which in turn is a reshaping of French *chiche* (from Latin *cicer*) by folk etymology. The Indonesian term *kacang putih* may refer especially to light-colored Kabul chickpeas (a.k.a. garbanzo beans), but it is also used by some as a cover term for all varieties of chickpeas.

cowpea

cowpea, common cowpea = *kacang tunggak*, *kacang merah*, *kacang dadap*, *kacang landes*, *kacang otok*, *kacang tolo* = *VIGNA UNGUICULATA* (L.) Walp., cv. group UNGUICULATA

Cowpeas are variable in their habit, from erect to trailing or vining.



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Cowpea plants can be recognized by their long flower stems (peduncles) from four to twelve inches long, at the end of which are borne usually two (but up to six) bluish or violet (or rarely white) flowers. Pods range from four to twelve inches long. Dried seeds

are often reddish, but can range from tan to black. Leaves, young pods, and fresh peas can also be eaten. The plant is also used for forage (whence the name *cowpea*).

Most cowpeas cultivated in the United States belong to a different cultivar group, *MELANOPHTHALMUS*, the so-called southern pea or crowder pea (because the beans grow crowded in the pod). These cowpeas range in color from white to pink, red, and speckled, and also include the well-known black-eyed peas (with a prominent black spot surrounding the scar) and another variety known as pinkeyes (with a pink spot surrounding the scar). You may not encounter these varieties in Indonesia.

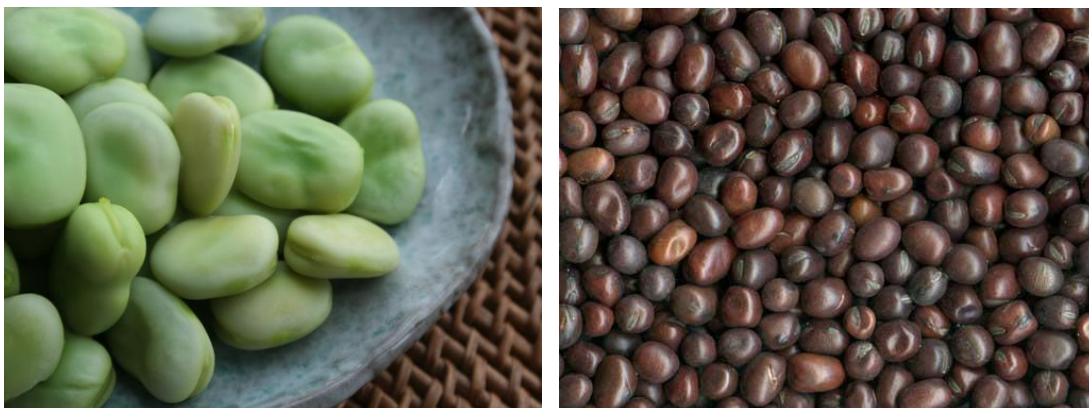
Do not confuse cowpeas with adzuki beans (see above) or rice beans (see below), both of which have instead yellow flowers.

Cowpeas were first domesticated in western Africa, but are now cultivated throughout the tropics.

fava bean

fava bean, broad bean, bell bean, English bean, field bean, horse bean, pigeon bean = *kacang babi*, *kacang dieng*, *kara oncet* = *VICIA FABA* L.

Fava beans, or broad beans, are edible fresh or dried (pods are not eaten). The fresh beans are said to resemble plump lima beans with a strong, meaty flavor. Varieties with harder, smaller seeds are referred to instead as horse beans or field beans.



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Fava beans originated in western Asia and were grown by Egyptians, Greeks and Romans. Today the Mediterranean area and the Near East remain its principle areas of cultivation, although it has been introduced to other temperate and subtropical parts of the world. I could find no evidence that fava beans are cultivated in Indonesia. But in 2014

Indonesia was the third largest importer of dried fava beans, most of which came from Australia.⁴

green bean

green bean, string bean, common bean, common green bean, field bean = *kacang buncis*, *kacang pendek* = PHASEOLUS VULGARIS L.

Green beans are common beans (PHASEOLUS VULGARIS) that have been bred for the tenderness and sweetness of their pods. Depending on variety pods may be round or flattish. Green beans may be further divided into string or snap beans, which have a tough, fibrous ‘string’ running the length of the pod, and stringless or French beans, which lack this fibrous string. Wax beans are beans that have been bred for their yellow or white pods, while purple beans, or purple green beans, have been bred for their purple pods (but turn green when cooked).



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Green beans (as well as all other varieties of the common bean) are a New World species. The Indonesian name *buncis* comes from Dutch *boontjes* ‘small beans.’

jack bean

jack bean, common jack bean, Chickasaw lima bean, horse bean = *kacang nyonya*, *kacang parang* = CANAVALIA ENSIFORMIS (L.) DC.

Jack bean is a New World species that is now cultivated throughout the tropics. Jack beans, like the Old World sword beans (see below), can be recognized from their large pods. Mature jack bean pods can reach fourteen inches in length. Dried seeds are white. A simple way to distinguish jack beans from sword beans is to inspect the seed: in jack

4 “World Imports of Broad beans (*Vicia faba* var. *major*) & horse beans (*Vicia faba* var. *equina*/var. *minor*), dried, shelled, whether or not skinned/split in 2014.” *TrendEconomy*. Online. URL: <http://data.trendeconomy.com/commodities/Import/071350?period=2014> (accessed February 19, 2017).

beans the scar (hilum) is only a third to half the length of the seed, while in sword beans the scar is more than half the length of the seed.



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Jack bean seeds contain a mild toxin that can be removed by proper soaking and boiling.

jicama

jicama, yam bean, Mexican yam bean, Mexican turnip = *bengkuang*, *sengkuang*, *mengkuang* = *PACHYRHIZUS EROSUS* (L.) Urb.

Jicama is a member of the pea family (Fabaceae). Vines can grow up to sixteen feet long, producing blue flowers and pods said to resemble those of lima beans. However only the tubers are eaten. All other parts of the plant are poisonous, containing rotenone.



Left: © 2010 by Wibowo Djatmiko. CC BY SA 3.0 Unported. Right: © 2013 by David Mead. Released to the Public Domain (CC0).

Jicama was introduced by the Spaniards from Mexico to the Philippines, whence it spread to China and Southeast Asia, including Indonesia.

kidney bean

kidney bean = *kacang jogo*, *kacang merah besar* = PHASEOLUS VULGARIS L.

Kidney beans are a variety of the common bean, PHASEOLUS VULGARIS. Like all varieties of the common bean, they are a New World crop. They take their name from their resemblance, in shape and color, to kidneys. In actuality their color can vary from brown to dark red and light red.⁵ Some are mottled.



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Kidney beans vary in size but are generally more than a centimeter long. The larger size of kidney beans easily distinguishes them from cowpeas, adzuki beans, and rice beans, which are usually less than a centimeter in length. Although all of these beans can be referred to in Indonesian in a general way as *kacang merah* ‘red beans,’ there are also unambiguous labels available for each, which I suggest you use as well in your dictionary work. See the following chart.

PHASEOLUS VULGARIS	VIGNA ANGULARIS	VIGNA UMBELLATA	VIGNA UNGUICULATA
kidney beans	adzuki beans	rice beans	cowpeas
<i>kacang jogo</i>	<i>kacang azuki</i>	<i>kacang uci</i>	<i>kacang tunggak</i>

kudzu

Kudzu includes at least two species in Indonesia, which I describe separately. They can be distinguished in that PUERARIA MONTANA has more-or-less lobed leaflets and small rounded seeds, while P. PHASEOLOIDES has unlobed leaflets and small squarish seeds.

- kudzu, Japanese arrowroot = *kudzu*, *pueraria* = PUERARIA MONTANA (Lour.) Merr.

Kudzu vine is known for its smothering habit. Leaves are trifoliate, with each leaflet usually having two or three lobes.

⁵ Even cannellini beans, which are white, sometimes garner the appellation ‘white kidney beans.’



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The young leaves, shoots and flowers of kudzu can be consumed as vegetables, and the stems contain fibers useful for cordage and weaving. The foliage is also suitable as a forage crop. The tuber, sometimes marketed under the name Japanese arrowroot, is valued for its starch in China, Japan, and Papua New Guinea. Throughout most of Indonesia, however, the tuber is considered a famine food, although there are exceptions:

“Heyne (1927:829–830) recorded the plant, under the name *Pueraria triloba* Baker, as present in Indonesia, where it is cultivated for its edible tubers in the Kangean archipelago. The author gives a detailed account of the gardening techniques used in its cultivation by the Kangeanese, who call it *tēbi*, or *tobi* in Madura.” Barrau (1965:285)

Barrau believes that kudzu was formerly a staple crop that has fallen into disuse. In its native range kudzu is widely distributed from India through Australia and the Pacific, although this distribution must at least partly be due to human intervention.

- tropical kudzu = *kacang ruji* = *PUERARIA PHASEOLOIDES* (Roxb.) Benth.



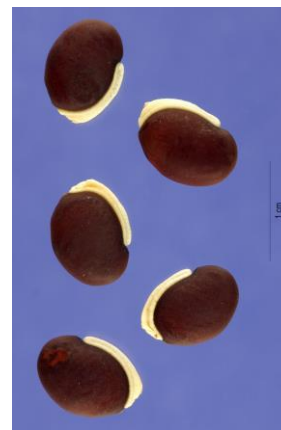
Left: © 2012 by Vinayaraj. CC BY-SA 3.0 Unported. Right: Photo credit Steve Hurst, hosted by the USDA-NRCS PLANTS Database. Public Domain.

Tropical kudzu is native from India and southern China through Indonesia, Papua New Guinea and the Solomon Islands. Both the tubers and young leaves are edible. Its ability to smother weeds makes it an important cover crop in plantations. Like kudzu, the stems yield a strong, useful fiber.

lablab

lablab, hyacinth bean = *kacang bado*, *kacang kara*, *kacang kekara*, *kacang kara-kara*, *kacang sepat*, *kacang jeriji*, *kara gajih*, *kara putih*. *koro wedus* = *LABLAB PURPUREUS* (L.) Sweet [synonym *DOLICHOS LABLAB* L.]

Lablab is an annual or a short-lived perennial with a strongly vining habit. Leaves are divided into three egg-shaped leaflets that are three to six inches long. Flowers are white, blue or purple, clustered together on an unbranched stem. The flattened pods, which range in color from light green to bright magenta, grow to two inches long with a distinctive 'corrugated' edge and contain two to four seeds. Seeds range from buff to dark brown, always with a conspicuous white scar (hilum). The name 'purple hyacinth bean' is used for varieties in which the leaves, stems, flowers, and pods are tinged with purple.



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Lablab is usually grown on a small scale in home gardens. It is valued for its young leaves and immature pods and seeds, which are eaten as vegetables. The mature dried seeds are edible only after long periods of boiling with several changes of water (and for this reason may be less preferred than other types of dried beans). Lablab is also suitable as a forage crop, as green manure, and for intercropping with maize and sorghum.

Lablab is an Old World species that may have originated in Africa, South Asia, or Southeast Asia. Today it is distributed throughout the tropics.

lentil

lentil = *kacang adas*, *kacang lentil*, *kacang merah kecil* = LENS CULINARIS Medikus

Lentils are well-known for their seeds, which are shaped like tiny lenses. Dried lentils come in various colors including buff, yellow, orange, red, green, gray and black.



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Lentils originate in western Asia, where they were domesticated by 5000 BC. Today lentils are cultivated in temperate and subtropical areas throughout the world. I could find no information on lentil cultivation in Indonesia, furthermore the country is only a small-time importer (countries like Brunei, Moldova and Montenegro import more lentils).⁶ The Indonesian name *kacang adas* comes from the Arabic name for lentils, '*adas*'; today the name *kacang lentil* is more popular.

lima bean

lima bean, butter bean = *kacang kratok*, *kacang jawa*, *kacang cina*, *kacang lejaran*, *kacang serendeng*, *kacang serinding* = PHASEOLUS LUNATUS L.

Lima beans may be marketed fresh or dried. They may be a solid color (green when fresh, white when dried) or speckled. Some lima beans may be solid purple when dried. Speckled varieties predominate in the areas of Indonesia I am familiar with.

⁶ "World Imports of Lentils, dried, shelled, whether or not skinned/split in 2014." *TrendEconomy*. Online. URL: <http://data.trendeconomy.com/commodities/Import/071340?period=2014> (accessed April 12, 2017).



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Some people reserve the term ‘butter beans’ for fresh baby lima beans. Other people use the terms ‘lima bean’ and ‘butter bean’ interchangeably.

moth bean

moth bean, mat bean, dew bean, dew gram, Turkish gram = *kacang rama-rama*, *kacang ngengat* = *VIGNA ACONITIFOLIA* (Jacq.) Marechal

The moth bean is a short plant growing only to about 16 inches tall, with numerous long, trailing branches. Leaves are divided into three leaflets, with each leaflet having long, narrow lobes. Pods are small, only one to two inches long. Both the green pods and ripe seeds are edible. The dry seeds are small (only three to five mm long), colored yellow brown, light brown, or whitish green. Besides its use as a food crop, moth bean is also planted to combat soil erosion.



Left: N. J. von Jacquin, 1767, *Observationum botanicarum*, vol. 3, tabella 52. Public Domain.
Right: © 2009 by Lalitstar. CC BY SA 3.0 Unported.

The native range of moth beans is from Pakistan to Burma, but cultivated forms have been introduced to Africa, China, Malaysia and Indonesia (Singh et al. 2006:279). However it is probably grown on a small scale since other sources do not mention

Indonesia within its area of cultivation. Improvements through breeding may lead to it becoming a more important crop, especially given that it tolerates drought better than other VIGNA species. The Indonesian name *kacang ngengat* is a calque (loan translation) from English ‘moth bean.’

mung bean

mung bean, green gram = *kacang hijau*, *kacang cindai* = VIGNA RADIATA (L.) Wilczek [synonyms: PHASEOLUS AUREUS Roxb., PHASEOLUS RADIATUS L.]

Mung beans are easily recognized by the green color of their small, dried seeds. While mung beans originate in India, they have long been used in Southeast Asian cuisine. The dried beans may be cooked or ground into meal. Sprouted mung bean seeds are popular as a vegetable, called *tauge* in Indonesian.



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pea

pea, garden pea, green pea = *ercis*, *kacang ercis*. *kacang polong* = PISUM SATIVUM L. [synonym PISUM ARVENSE L.]

Garden peas, or green peas, are a variety of PISUM SATIVUM that have been bred for their fresh peas that are eaten as a vegetable (or canned or frozen for later use). Field peas, on the other hand, are varieties that are grown principally for their dried seeds, and may be marketed whole or split.



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In its wild form peas are found in the Mediterranean area and the Near East. Peas were being grown seven thousand years ago in Egypt, and reached India over four thousand years ago. Peas are a temperate zone crop, suitable to be grown in Indonesia only at high elevations (more than 2300 feet above sea level). The Indonesian name *ercis* is from Dutch *erwtjes*.

peanut

peanut, groundnut, goober = *kacang tanah* = *ARACHIS HYPOGAEA* L.

Peanuts were originally domesticated in what is now northwestern Argentina or southeastern Bolivia several thousand years ago, and from here they spread to other parts of South and Central America. Peanuts were encountered by Spanish conquistadors in Mexico, and are now cultivated worldwide.



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The numerous varieties of peanuts lie beyond the scope of this guide. Varieties differ in regard to size, shape, flavor and oil content of the seeds, as well as resistance to various diseases.

pigeon pea

pigeon pea, Congo pea, Angola pea, gungo pea, no-eye pea, yellow dahl, red gram = *kacang gude*, *kacang bali*, *kacang kayu*, *kacang kayo* = *CAJANUS CAJAN* (L.) Millsp. [synonym *CAJANUS INDICUS* Spreng.]

Pigeon peas grow as annuals or, more usually, short term perennials. Bushes typically reach one to two meters tall and live from three to five years, although seed production is highest the first two years. Pods have distinctive ‘furrows’ separating the seeds. In some varieties the young pods are edible, while the seeds of all varieties are harvested fresh or allowed to dry. Leaves and pods are also used as animal fodder. See pictures below, as well as additional pictures in the introduction to this article.



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Pigeon peas were first domesticated in India. It appears they reached Africa around 2000 BC and Southeast Asia in the early centuries AD (Van der Maesen 1989a).

rice bean

rice bean, red bean, climbing mountain bean, oriental bean = *kacang uci*, *kacang oci*, *kacang puyuh*, *kacang sepalit*, *kacang merah kecil* = *VIGNA UMBELLATA* (Thunb.) Ohwi & H. Ohashi [synonym: *PHASEOLUS CALCARATUS* Roxb.]

Rice bean is an annual or short-live perennial that may either be erect or twining. Flowers are yellow. Pods are three to five inches long. Dry seeds are variable in appearance, from greenish-yellow to yellow, brown, and black, although a red type is common. Rice bean is primarily grown for its dried beans; however leaves, young pods and sprouts can be used as vegetables. It is also useful for forage and as a cover crop.



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Rice bean was probably domesticated in Thailand. Its wild form is found from India through southern China. Its primary area of cultivation remains South and Southeast Asia, including Indonesia, but it has also been introduced to Africa, Australia and the Americas. It grows under much the same conditions as cowpeas, but better tolerates poor soil conditions. Note that rice beans have yellow flowers, versus the light blue or violet flowers of cowpeas.

runner bean

runner bean, scarlet runner bean, multiflora bean = *kacang runner* = PHASEOLUS COCCINEUS L.

If you saw runner bean pods you might confuse them with common green beans. However the two are different species. Runner beans are recognizable from their bright scarlet flowers (but white in some varieties), and also by the roots, which develop tubers. The descriptor 'runner' refers to the plants' climbing, twining habit, because of which they are best grown on tripods, fences, or trellises. The young pods, fresh seeds, and dried seeds are all edible.



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Runner beans originated in the mountains of Mexico and Central America. They are a temperate crop that can be grown in the tropical highlands.⁷ Runner beans are considered an underexploited crop; I could find no explicit reference to runner bean cultivation in Indonesia.

snap pea

snap pea, sugar snap pea = *kacang kapri*, *kacang manis* (?) = *PISUM SATIVUM* L.

Snap peas, also called sugar snap peas, have edible round pods that are round, rather than flat like the snow pea (see below). Snap peas were developed in 1951 as a cross between garden peas and snow peas. The Indonesian name *kacang kapri* refers to both snap peas and snow peas.

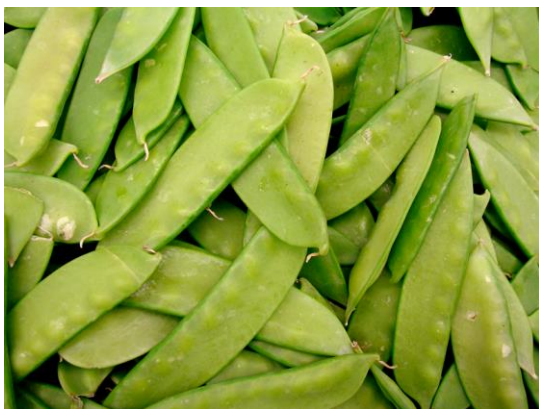


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snow pea

snow pea, English sugar pea = *kacang kapri* = *PISUM SATIVUM* L. var. *SACCHARATUM*

Snow peas have flat pods that are edible while still unripe.



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⁷ Runner beans can also be grown as an ornamental in the lowland tropics, but the plants will not set pods.

Although they are associated culinarily with oriental stir-fry dishes, snow peas in fact originated in the Mediterranean area and were widely grown in Europe in the nineteenth century. I have not been able to determine when snow peas were introduced to Indonesia. However a kind of pea called *katjang kapri* was already known in Java by 1875 (Veth 1875:534).

soybean

soybean, soya bean = *kacang kedelai*, *kacang jepun*, *kacang bulu rimau* = GLYCINE MAX (L.) Merr.

Soybeans are a bushy, sometimes viny annual with trifoliate leaves. Its small flowers are purple or white. Seeds are yellow, green, brown or black, or combinations of these colors. The beans are used in the production or a variety of food products, including sprouts, tofu, tempeh, soy sauce, and vegetable oil.



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Soybeans were first domesticated in northern China around three thousand years ago, and from there spread to Korea (around AD 0), Russia, and Japan. In Indonesia tofu is mentioned in an inscription dated to the early tenth century, while soy beans themselves

are mentioned in a twelfth or thirteenth century manuscript (Shurtleff and Aoyagi 2010:7).

sword bean

sword bean, sword jackbean = *kacang parang*, *kacang hantu*, *kacang polong*, *kara pedang* = *CANAVALLIA GLADIATA* (Jacq.) DC.

Sword beans, along with the closely related jack bean, can be recognized from their large pods. At maturity sword bean pods can reach from ten to fourteen inches long and up to one and a half inches wide. Mature sword bean seeds are from three-quarters to over an inch long, usually red, but variable including black, brown, and white. A simple way to distinguish sword beans from jack beans is to inspect the seed: in sword beans the scar (hilum) is more than half the length of the seed, while in jack beans the scar is only a third to half the length of the seed.



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The young pods of sword beans are cooked as a vegetable. The seeds contain a toxic alkaloid, which can be removed by thorough boiling in two or three changes of water.

Sword beans are an Old World species that originated in either Africa or Asia. It is widely cultivated in South and Southeast Asia, and has spread throughout the tropics.

velvet bean

velvet bean, cowitch = *kacang benguk*, *kara benguk*, *kacang babi*, *kacang gatal*, *kacang miang*, *mukuna* = *MUCUNA PRURIENS* (L.) DC. [synonym *MUCUNA UTILIS* Wall. ex Wight] (or other *MUCUNA* species)

Velvet bean is a kind of vine. It is recognizable from its hanging clusters of dark purple flowers. In the wild pods and even leaves have hairs that cause intense itching when they come in contact with skin, but a cultivated form—*MUCUNA PRURIENS* var. *UTILIS*—is hairless. Seeds are variable in appearance from light or pinkish brown to mottled to almost entirely black.



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In parts of Java the seeds are boiled and made into tempeh (called *tempe benguk*). Young leaves and immature pods of the cultivated variety can be eaten as vegetables. It is also grown as a cover crop, and is particularly suited for reclaiming land taken over by cogongrass and certain other weeds.

In addition, close to fifty other *MUCUNA* species occur in the Philippines, Malaysia, Indonesia and New Guinea, including some with red and orange flowers. A discussion of their differences lies beyond the scope of this paper, but see Wiriadinata, Ohashi and Adema (2016) for a key to the different species.

winged bean

winged bean, asparagus pea, goa bean = *kecipir*, *kacang belimbing*, *kacang botol*, *kacang botor* = *PSOPHOCARPUS TETRAGONOLOBUS* (L.) DC.

This legume is a climbing vine that is best-known for its winged pods, but in fact every part of the plant is edible, including tubers, shoots, flowers, leaves, pods and seeds. Pods average about twelve inches in length.



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Formerly winged beans were grown from East Africa through India, Indo-China, Malaysia, Indonesia, the Philippines, and some of the Pacific islands. Indonesia and the island of New Guinea are both recognized as centers of diversity, and “it is difficult to believe that such variation developed after introduction of one or a few varieties” (Martin and Delpín 1977:3).

A related species, *PSOPHOCARPUS SCANDENS* (Endl.) Verd., has edible shoots and pods and is cultivated in Indonesia under the name *kecipir monyet*, but it is not as popular as the winged bean (Hymowitz and Boyd 1977:180, Wulijarni-Soetjipto 1997). Pods are square in cross-section, with wings, but grow to only about three inches long.

yard-long bean

yard-long bean, Chinese long bean, asparagus bean, snake bean = *kacang panjang*,
kacang belut = *VIGNA UNGUICULATA* (L.) Walp. ssp. *UNGUICULATA* cv. group
SESQUIPEDALIS

Cowpeas were originally domesticated in Africa. Yard-long beans are a vegetable form of cowpeas that evolved, through human selection, in southern Asia. Yard-long beans are cultivated for their crisp pods that can grow from one to three feet long. Pods are harvested after reaching full length but before the seeds mature and expand. Depending on variety, the pods may be light green, dark green, or even purple.



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A variety known as *kacang panjang belanda* (not pictured) has pods that are even longer than the usual yard-long beans.

The dried beans are also harvested and may be cooked later, or soaked to make sprouts.

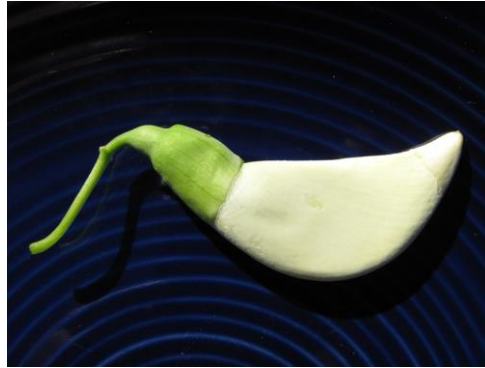
2 Trees

agati

agati, white-flowered agati, hummingbird tree, vegetable hummingbird = *turi*, *bunga turi*, *kembang turi*, *petai belalang*, *sesban*, *sesban getih* = *SESBANIA GRANDIFLORA* (L.) Pers.

The agati tree has white or pinkish flowers that are eaten as a vegetable in Southeast Asia, including Indonesia. Young leaves and immature pods are also edible.

Leaves are compound with ten to twenty (or more) pairs of leaflets. The large, curved flowers are from two to four inches long before opening. Mature fruits (pods) are twelve to twenty inches long, less than a half-inch wide, and contain fifteen to forty pale-colored seeds.



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The native range of the white-flowered agati is from India to Australia, although it is now widely distributed in other parts of the tropics.

A related species, *SESBANIA BISPINOSA* (Jacq.) W. Wright, is a shrub or small tree with smaller, yellow flowers that are also edible.

bitter bean

bitter bean, stink bean, twisted cluster bean, nitta tree = *petai* = *PARKIA SPECIOSA* Hassk.

PARKIA SPECIOSA is a tall tree with an umbrella-shaped crown. The inflorescence resembles a tiny fuzzy pear, packed with small flowers similar to the way florets are packed on the head of a daisy. Young pods with undeveloped beans are edible, as are later the beans themselves. Young leaves and flower stalks are also edible. The beans have an unpleasant odor due in part to the presence of cyclic polysulfides. This smell is sometimes described like the smell of natural gas or bad onions.



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PARKIA SPECIOSA occurs naturally in Sumatra, the Malay Peninsula, Borneo and the Philippines, and is cultivated outside of this range as far east as Ceram. Four other PARKIA species occur in Indonesia—P. SINGULARIS, P. SUMATRANA, P. TIMORIANA and P. VERSTEEGHII—and reportedly have beans which can be substituted for those of P. SPECIOSA. The PARKIA species of Indonesia can be readily distinguished by leaf shape; see the illustration and accompanying key in Fortune Hopkins (1992:196–197).

dogfruit

dogfruit, blackbead, ngapi nut, djenkol beans = *jengkol* (Malaysia: *jering*) = ARCHIDENDRON PAUCIFLORUM (Benth.) I.C.Nielsen [synonyms: PITHECELLOBIUM JIRINGA (W. Jack) Prain ex King, PITHECELLOBIUM LOBATUM Benth.]

Dogfruit is a tree in the pea family. It has short, white, pom-pom-like flowers that develop into single-seeded, reddish to purplish pods which may not be recognized as the legumes that they are. The pods may be marketed locally. An amino acid present in the beans can cause the formation of needle-like crystals in the kidneys, leading to urinary obstruction and renal failure.



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Sixty-one other ARCHIDENDRON species are distributed across the Philippines, Malaysia, Indonesia, and New Guinea (Nielsen 1992:87), and it is possible that seeds of other ARCHIDENDRON species are also consumed locally.

drumstick tree

drumstick tree, ben-oil tree, benzoil tree, horseradish tree = *kelor* = MORINGA OLEIFERA Lam.

MORINGA OLEIFERA is a versatile, drought-resistant tree. Initially I was familiar with the leaves, which are used as a vegetable. The nine-ribbed pods however are also edible, and are said to taste like asparagus. They have the tenderness of green beans when young, but can also be eaten at later stages (requiring longer boiling). Mature pods can reach up to eighteen inches in length.



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The name drumstick tree comes from the pods (*kacang kelor*), which can be called drumstick pods or simply 'drumsticks.' The name ben-oil tree refers to an oil that is extracted from the seeds, called moringa oil, ben oil, or behen oil. The name horseradish tree comes from the roots (a condiment made from the crushed or grated roots has a flavor similar to horseradish). The tree likely originated in northern India, where it was in use no later than 2000 BC.

Manila tamarind

Manila tamarind, sweet inga, monkeypod, blackbead, guayamochil = *asam belanda* (Javanese *asem londo*) = *PITHECELLOBIUM DULCE* (Roxb.) Benth.

This tree is native to Mexico, Central America and northern South America, but it has been introduced and is now widely cultivated in Southeast Asia, where you may find it planted in hedges or as a shade tree along roadsides or avenues. Twigs have thorns at the leaf bases (but are thornless in some varieties). Pods are greenish-brown to reddish-pink, and have an edible pulp, ranging from astringent to sweet depending on the variety. The pods and leaves are suitable as animal fodder.



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nam-nam

nam-nam = *namnam*, *buah katak* = CYNOMETRA CAULIFLORA L.

Nam-nam is a shrub or small tree. Small pink flowers born directly on the trunk develop into lumpy pods about three inches long and half as wide. The mature pods, called *buah katak*, are juicy and sourish. They can be eaten raw or cooked with sugar to make a compote. The large seeds are discarded.



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Nam-nam is a tree of household gardens, without a foreseeable market demand. Nam-nam is believed to have originated in Malaysia, although today it is only known from cultivation.

Tahitian chestnut

Tahitian chestnut, Polynesian chestnut, aila, mape tree = *gayam*, *tolok*, *buah tolok* = INOCARPUS FAGIFER (Parkinson) Fosberg [spelling variant: INOCARPUS FAGIFERUS (Parkinson ex Zollinger) Fosberg]

The Tahitian chestnut is a stately tree with a dense crown. The trunk is usually fluted with buttress roots at the base. Leaves, flowers and fruits are variable in appearance. Flowers are yellow or white and are clustered together on a small stalk (rachis). The hard, irregular, single-seeded 'nuts' do not naturally split open (dehisce), and may not be recognized for the legumes that they really are. The seed is edible after cooking, and is said to have a taste comparable to chestnuts.



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Tahitian chestnuts were formerly an important food source for Pacific Islanders, who brought the seeds with them from the tree's homeland in or around New Guinea. The tree also spread westward by trade through Borneo, Java, Sumatra, and the Malay Peninsula. The tree tolerates flooding, and is found in swamps, brackish water, and on the banks of estuaries and streams. Apart from its food value, the tree is sometimes planted for shade and/or firewood, but it often now grows wild.

tamarind

tamarind, Indian tamarind = *asam*, *asam jawa* = TAMARINDUS INDICA L.

Although the origin of tamarind may have been tropical Africa, it has long been naturalized in South and Southeast Asia. The sour pulp surrounding the seeds is used in cooking.



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The seeds themselves are also edible after soaking and boiling to remove the brown seed coat, and “roasted seeds are claimed to be superior to groundnuts in flavor” (Coronel 1991)—although I wouldn’t know since in areas where I work the seeds are usually discarded. The name tamarind comes from Arabic *tamar hindi* ‘Indian date.’

white leadtree

white leadtree, jumbay, river tamarind, white popinac, leucaena = *petai cina*, *petai selong* (Javanese *lamtoro*) = *LEUCAENA LEUCOCEPHALA* (Lam.) de Wit

White leadtree is a shrub or tree with bipinnate leaves and white, pom-pom–like flowers (the specific epithet *LEUCOCEPHALA*, compounded from Greek *leuco* ‘white’ + *cephala* ‘head,’ refers to these flowers). Young pods, green seeds, and mature seeds are eaten raw or cooked. The dried seeds are also used for ornamentation.



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The white leadtree has numerous other uses, including shade, fodder, firewood, live fencing, and live support for vines such as pepper and vanilla.

L. LEUCOCEPHALA is the only *LEUCAENA* species (of about fifty total) that has been introduced as is widely cultivated outside of tropical America. In some parts of the world it is considered an invasive species that grows quickly and crowds out other vegetation.

3 Some inedible legumes

beach bean

beach bean, bay bean, beach pea, nanea, notched cowpea = *kacang laut*, *kacang pantai* = *VIGNA MARINA* (Burm. f.) Merr.

This trailing plant with a yellow flower is found in coastal habitats throughout most of the tropics. It is salt tolerant and able to colonize sand dunes. It is rarely found inland.



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blue pea

blue pea, butterfly pea, Asian pigeonwings = *bunga telang* = *CLITORIA TERNATEA* L.

Blue pea is a low-growing vine or creeper of the legume family that is native to Indonesia and Malaysia. Its showy flowers are a natural source of a water-soluble blue food dye used for example to color drinks or cooked rice. The generic epithet *CLITORIA* comes from the resemblance of the flowers to the human female genitalia.



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Borneo teak

Borneo teak, Pacific teak, Moluccan ironwood = *merbau pantai* = *INTSIA BIJUGA* (Colebr.) Kuntze

Borneo teak is a tall forest tree that is prized for its timber. However, intense exploitation of this tree has left it in a vulnerable position throughout its range.

The compound leaves of Borneo teak can be recognized in that they usually have two pairs of leaflets (rarely one or three pairs), without any terminal leaflet. The white, pink, or purplish flowers are unusual in that they have only a single, broad petal. The fruit is a broad, flat pod, usually three to six inches long, but sometimes reaching a foot long. The

flat seeds are round or irregular, about an inch to an inch and a half in diameter but less than three-eighths of an inch thick, with a hard, brown covering.



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Borneo teak is distributed from Burma through Australia, New Guinea and the Solomon Islands. It is also occurs on Madagascar, Mauritius and the Seychelles. It is considered a lowland species, often found in coastal areas, behind mangrove forests, and along rivers.

INTSIA PALEMBANICA Miq. (Malacca teak, *merbau darat*) is similar but usually has four pairs of leaflets per leaf and pods are larger. Malacca teak is distributed from the Andamans and Burma through western New Guinea.

calliandra

calliandra, red calliandra = *kaliandra*, *kaliandra merah* = *CALLIANDRA CALOTHYRSUS* Meisn.

Calliandra is a large shrub or small tree with bipinnate leaves that fold together at night. Flowers have long red stamens.



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Calliandra is planted for fodder and as a soil improver. It has also been used for erosion control and in reforestation projects. At the end of the dry season trees can be cut back to within two or three feet of the the ground and the trunks and limbs used for firewood.

Calliandra is native to Central America and Mexico. It was introduced to Java in 1936, and has since spread to other parts of Indonesia. In some places calliandra may grow as a troublesome weed.

candle bush

candle bush, candelabra bush, candletree, ringworm tree, ringworm bush, ringworm senna = *ketepeng*, *gelinggang* = *SENNA ALATA* (L.) Roxb. [synonym: *CASSIA ALATA* L.]

Candle bush is a shrub or small tree named for its distinctive orange and yellow flowers. Leaves are compound, with seven to fourteen pairs of large leaflets. The winged pods are about five inches long turning dark brown to black with age.



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Candle bush is a New World species which has been introduced to the tropics worldwide. In Indonesia its leaves or sap are used locally to treat ringworm or other fungal skin infections.

coffee senna

coffee senna, Negro coffee, coffeeweed, septicweed, stinking weed = *kopi andelan* = *SENNA OCCIDENTALIS* (L.) Link

Coffee senna has compound (pinnate) leaves with an even number of leaflets (6, 8, or 10). Flowers are yellow. Pods grow outward perpendicular to the stem and are 8 to 13 cm long when mature, straight or only slightly curved, with a brown stripe down the middle and lighter-colored edges. Pods rattle when dry. Seeds are small, oblong, flattened, numerous, upwards of fifty per pod. The plant gets its name because in some areas the roasted seeds

are used for tea or coffee (or coffee adulterant). Coffee senna is found throughout Indonesia and is occasionally cultivated.



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Whilst the origin of coffee senna is unknown, it apparently has had a long history in Southeast Asia. Two plants introduced from the Americas are similar. *SENNA SOPHERA* (L.) Roxb. (algarrobilla, kasunda, baner, *enceng-enceng*) has flattened pods versus the more cylindrical pods of *S. OCCIDENTALIS*, while *SENNA OBTUSIFOLIA* (L.) Irwin & Barneby (sicklepod) has curved pods and leaflets with rounded rather than pointed tips.

coral tree

coral tree = *dedap* = *ERYTHRINA* spp.

If you encounter a tree in Indonesia with a thorny trunk or branches, trifoliate leaves (each leaf has three leaflets), clusters of bright red or orange flowers, and pod-like fruits, it is likely a coral tree.



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ERYTHRINA is primarily a New World genus, but five species of coral tree are distributed in Indonesia. These species are easily distinguished from each other by the shape of the leaves, calyxes, and pods. For a key to identification and useful illustrations, see Adema (1996).

- E. FUSCA Lour. = purple coral tree : has pan-tropical distribution.
- E. SUBUMBRANS (Hassk.) Merr. : distributed from India through Melanesia.
- E. VARIEGATA L. = Indian coral tree, tiger's claw : distributed in the tropics from east Africa through Polynesia. [synonyms E. INDICA Lam., E. LITHOSPERMA Miq.]
- E. STRICTA Roxb. = distributed from India through Southeast Asia, also Java, Bali, Flores, Timor.
- E. EUODIPHYLLA Hassk. : has purple seeds; known from East Java and Timor.

flamboyant

flamboyant, royal poinciana = *flamboyant*, *bunga Desember* = DELONIX REGIA (Boj. ex Hook.) Raf.

The flamboyant tree is well known for its spreading canopy and displays of showy red flowers (or yellow-flowered in one variety).



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The flamboyant tree is native to Madagascar, but has been widely introduced throughout the tropics.

jequirity

jequirity, crab's eye creeper, cock's eyes, rosary peas, paternoster pea, love pea, precatory pea, precatory bean = *saga rambat* = *ABRUS PRECATORIUS* L.

This plant is a low-growing legume with light purple flowers, but its most distinctive feature are its small, bright red and black seeds. Although the seeds may be attractive to children, they are highly poisonous. In the Kulisusu area a single seed is swallowed whole as a treatment for abscesses and for red, pussy eyes. According to a Kulisusu old wives' tale the seeds are edible: consuming one seed means you will have trouble for one year, two seeds trouble for two years, and so forth.



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In the Kulisusu area this plant is known as *kolondue*, in Muna as *kasaga-saga*. Robert Blust reconstructs Proto Western Malayo-Polynesian (PWMP) *saga ‘a vine and the seeds of its fruit: ABRUS PRECATORIUS.’⁸

Indian beech

Indian beech, pongam tree, pongam oiltree = *malapari*, *kacang kayu laut* = PONGAMIA PINNATA (L.) Pierre [synonym MILETTIA PINNATA (L.) Panigrahi]

The pongam tree is a member of the legume family. Leaves are compound with three to seven shiny, dark green leaflets. Flowers are white or pale violet with a green center. Pods contain one seed or rarely up to three seeds. The pods are thick and leathery, and do not naturally dehisce (split open) when ripe.



⁸ Robert Blust and Stephen Trussel, *Austonesian Comparative Dictionary*, web edition, s.v. “*saga” http://www.trussel2.com/acd/acd-s_s1.htm-28078 (accessed February 12, 2017).



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The Indian beech tree is not used for food. However various parts of the plant have been used medicially (plant juices and seed oil are naturally antiseptic). Oil extracted from the seeds, known as pongamia oil, has been used since antiquity as a lubricant and as fuel for lamps. The native range of the Indian beech tree extends from India and China to Australia and the Pacific.

lebbbeck

lebbbeck, Indian siris, chatter box tree, woman's tongue = *batai*, *batai batu*, *kungkur*, *oriang*, *tekik* (Javanese), *kitoke* (Sundanese), *tarisi* (Sundanese) = *ALBIZIA LEBBECK* (L.) Benth.

Lebbbeck is a medium-sized tree with a spreading crown. It is widely planted throughout Indonesia as a shade tree, but only rarely (Java, Lesser Sunda Islands, Sulawesi) established in forests. Leaves are bipinnate, each secondary rachis with four to twelve pairs of leaflets. Flowers have the appearance of white or yellowish pom-poms. The pods are flat (but swollen around the seeds), four to ten inches long, turning straw-colored or light brown as they dry. The names 'chatter box tree' and 'woman's tongue' refer to the seeds that rattle inside the dried pods.



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The lebeck tree is one of the most widely planted *ALBIZIA* species worldwide. It may have originated in eastern Africa or mainland Asia. In all Indonesia is home to more than a dozen *ALBIZIA* species, some of which also have rattling seed pods. A characteristic of lebeck is that the main veins of the leaflets are off-center, about one fourth or one third the width of the leaflet from the leading edge. For a key and descriptions of other species, see the section devoted to *ALBIZIA* in Nielsen (1992:64–86).

Malay padauk

Malay padauk, Pashu padauk, New Guinea rosewood = *angsana* = *PTEROCARPUS INDICUS* Willd.

Malay padauk is a tall tree with buttress roots. It is prized as a shade tree as well as for its timber. It is the national tree of the Philippines, where it is known as narra.

Malay padauk has compound leaves with five to thirteen leaflets, and clusters of yellow flowers. It is easily recognized from its pods, which are surrounded by a wing-like membrane. The dry pods do not naturally dehisce (split open) and can be found littering the ground below trees. Pods may be smooth, spiny or somewhere in between. The spiny-podded forms, once recognized as a separate species, are now considered a variety only, *P. INDICUS* forma *ECHINATA* (Pers.) Rojo.



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Malay padauk is native from mainland Southeast Asia through New Guinea and the Caroline and Solomon Islands. In the mid-twentieth century it was thought there were ten *PTEROCARPUS* species distributed across Malaysia, Indonesia and the Philippines, but after a detailed comparison Rojo (1977) combined these into a single species. A closely related species, *P. MACROCARPUS* Kurz, is found in mainland Southeast Asia but does not occur naturally in Indonesia. Worldwide there are thirty or more *PTEROCARPUS* species, and it is possible that one or another of these has recently been introduced into cultivation in Indonesia.

nicker

gray nicker = *gorek-gorek* = *CAESALPINIA BONDUC* (L.) Roxb.

Nicker is a slender tree that usually supports itself on other vegetation by the small thorns that cover its trunk, branches and leaf petioles. Leaves are bipinnate. Flowers (not pictured) are yellow. The seed cases are also thorny. When ripe they naturally dehisce (split open) to reveal rounded gray seeds. The seeds have sometimes been used as beads, marbles, or markers in board games.



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Yellow nicker, *CAESALPINIA MAJOR* (Medik.) Dandy & Exell, is similar but has yellow or brown seeds. Both species have water-borne seeds and are widely distributed in the tropics. Their areas of origin have not been determined.

phasey bean

phasey bean, wild bush bean, bush bean, wild bean = *kacang batang*, *kacang monyet* = *MACROPTILIUM LATHYROIDES* (L.) Urb. [synonym: *PHASEOLUS LATHYROIDES* L.]

Phasey bean is an annual or a short-lived perennial, growing only to about three feet tall, with trailing or twining branches that may spread further. Flowers are blood red (rarely pink or white). Pods to four or five inches long project at nearly right angles from the stem. The straight, narrow pods may contain twenty or more seeds, and shatter easily when mature. Seeds are speckled light brown to black and are miniscule, only about an eighth of an inch long.



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The phasey bean is native to North and South America, including the Caribbean. It has been naturalized throughout the tropics and subtropics. It is often encountered as a weed, but sometimes planted for forage or as a green manure.

Another species, the purple bush bean, *MACROPTILIUM ATROPURPUREUM* (DC.) Urb., is similar but has dark purple-red or reddish-black flowers and broader leaflets. This species was also introduced to Indonesia from the Americas.

poinciana

poinciana, dwarf poinciana, peacock flower, red bird of paradise = *kembang merak* = *CAESALPINIA PULCHERRIMA* (L.) Sw.

Poinciana is a shrub or small tree that has showy yellow and red flowers.



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Among non-specialists poinciana may be confused the flamboyant (see above). However the two can be readily distinguished in that poinciana is a shrub or small tree (hence the name ‘dwarf poinciana’), while the flamboyant or ‘royal poinciana’ is a large tree with a spreading canopy. In addition the leaf stems (secondary rachises) of poinciana have only six to ten pairs of leaflets, while those of flamboyant have twenty to forty pairs. Poinciana is native to Central America, or perhaps the Caribbean, but is now widely grown as an ornamental throughout the tropics.

quickstick tree

quickstick tree, gliricidia = *gamal* = GLIRICIDIA SEPIUM (Jacq.) Kunth ex Walp.

This tree is a legume with pink flowers. It is easily propagated from cuttings or ‘quick sticks’ that are stuck in the ground, a primary reason for its wide use in live fencing. The high-protein-content leaves can be used as fodder for livestock. It has also been touted as a shade tree (e.g. for coffee or cocoa plants) and as a soil improver (green manure). Seeds and bark are poisonous (the generic epithet GLIRICIDIA means ‘mouse killer’).



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The quickstick tree originates from Central America, and has been widely introduced throughout the tropics.

red bead tree

red bead tree, red-bead tree, bead tree, red beantree, red sandalwood, false red sandalwood, red lucky seed, coral pea, coralwood, circassan tree, zumbic tree, false jequirity, false wiliwili, barricarri = *saga pohon* = ADENANTHERA PAVONINA L.

The red bead tree is a multi-purpose tree. It is planted as an ornamental, as a shade tree along lanes, for forage, and to improve soil. A red dye is obtained from the wood; the hard wood is also used in furniture and boat construction. The young leaves can be cooked and eaten; the toxic seeds are also edible after cooking. Various parts of the plant

(leaves, bark, seeds) have been used medicinally, and the seeds have also been used as beads in jewelry.



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The pods and seeds somewhat resemble those of the jequirity vine (Indonesian *saga rambat*, see above), but seeds lack any black marking. This tree is native to Indonesia and Malaysia. It is distributed from India and China through the Pacific.

saman tree

saman tree, rain tree, monkeypod, five-o'clock tree, cow tamarind = *pohon trembesi*, *pohon pukul lima* = *ALBIZIA SAMAN* (Jacq.) Merr. [Synonyms: *SAMANEA SAMAN* (Jacq.) Merr., *PITHECELLOBIUM SAMAN* (Jacq.) Benth.]

The saman tree is a large, spreading tree with small, pinkish, pom-pom-like flowers. The name 'rain tree' refers to the leaves which fold during rain and also in the evenings (whence the names five-o'clock tree and *pohon pukul lima*). The name monkeypod is related to a former generic epithet, *PITHECELLOBIUM*, literally 'monkey earring' in Greek. The flattened pods are straight or slightly curved, usually around five to eight inches long

with thickened edges. Seeds are embedded in a brownish pulp. Pods turn dark brown to black as they age. Seeds are rounded at one end and pointed at the other.



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Leaves of this tree naturally produce small amounts of ethylene, and Muna and Cia-Cia people place the leaves with bananas to hasten the ripening process.⁹ This tree is native from Mexico to Peru and Brazil. It has been introduced to Indonesia as well as other parts of the tropics.

sappanwood

sappanwood, Indian redwood = *secang*, *sepang* = *CAESALPINIA SAPPAN* L.

Sappanwood is a thorny shrub or small tree with yellow flowers. Leaves are bipinnate with ten to twenty pairs of leaflets per pinna (secondary rachis). The smooth, flattened pods have a characteristic beak at the apex and contain two to four seeds.



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⁹ Leaves of the quickstick tree (*Gliricidia sepium*, described above), star fruit leaves (*Averrhoa carambola*) and bilimbi fruits (*Averrhoa bilimbi*) can also be used for this purpose (Masilungan and Absulio 2012:406).

Through the end of the nineteenth century sappanwood was well known worldwide as a source of a red dye. In Indonesia the wood is still used locally to impart a pink color to foods and drinks. The origin of sappanwood is unknown. It is cultivated throughout the tropics.



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sea bean

Indonesia is home to four ENTADA species, all of which are giant woody climbers (lianas) that form large seedpods up to five or even six feet in length. At maturity the outer layer of the pod separates from the inner layer, and the pod falls apart into one-seeded segments. The two most widespread species have buoyant seeds (a.k.a. ‘sea beans’) that are found washed up on beaches, along estuaries, or behind mangrove forests.



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Following Nielsen (1992:176 ff.) here are succinct descriptions that highlight the distinguishing characteristics and distribution of each species.

- *E. PHASEOLOIDES* (L.) Merr. = St. Thomas bean = *beluru*, *akar beluru*, *gandu*, *bingkek* : has one, two, or three pairs of leaflets per pinnae, flower petals green with a

reddish base, ‘envelope’ (endocarp) containing single seeds is parchment-like, seeds are water borne; distributed from Southern China and Vietnam through Indonesia and the Pacific.

- E. RHEEDII Spreng. = African dream herb, snuff box sea bean, match-box bean, elephant climber = *beluru*, *akar beluru*, *gandu* : has three, four, or five pairs of leaflets per pinnae, flower petals white, ‘envelope’ (endocarp) containing single seeds is woody, seeds are water borne; distributed from Africa through Asia, Australia and a small portion of the Pacific.
- E. SPIRALIS Ridley = *beluru*, *sintok* : inland species, not dispersed by water, pods spirally twisted with irregular, triangular segments; distributed in Sumatra and adjacent areas of the Malay Peninsula as well as Singapore.
- E. BORNEENSIS Ridley : all leaflets except the distal pair are alternate; known only from Borneo.

sensitive plant

sensitive plant, sleepy plant, sleeping grass, shy plant, shame plant, touch-me-not = *putri malu* = MIMOSA PUDICA L.

Sensitive plant is a low-growing, somewhat prickly plant that is erect when young but turns into a creeper or trailing plant with age. It has small pink or purplish pom-pom-like flowers, but its most distinctive feature—from which it gets its name—are its bipinnate leaves: leaflets fold together when touched or disturbed, only to open again a few minutes later.



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Sensitive plant is native to Central and South America, but it now grows throughout the tropics.

wild gram

wild gram, African gram, three-lobe-leaf cowpea = *kacang kate* = *VIGNA TRILOBATA* (L.) Verdc. [synonym *PHASEOLUS TRILOBUS* (L.) Schreb.]

Wild gram occurs naturally from Afghanistan through the Malay archipelago. It is closely related to the moth bean, and in fact Sampson (1936) suggested it may be the wild form of it. However “the seeds are eaten only by poor people in India” (Wong 1997). Leaflets are only a half inch to one inch long. Flowers are yellow. Pods are round, one to two inches in length.



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Wild gram grows well on forest margins and wastelands, and has outstanding drought tolerance. Its primary use is as a fodder crop and green manure.

wild hops

wild hops, luck plant = *apa-apa kebo*, *ingan-ingan* = *FLEMINGIA STROBILIFERA* (L.) Roxb. ex W.T. Aiton

This erect shrub is recognizable from its long chains of folded bracts that hide the actual flowers and later the pods (which are only around a centimeter long). The persistent, dried-out bracts are prominent during the dry season. The plant is not edible, but locally it may have medicinal uses. In some places the dried bracts are used to stuff pillows.



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Wild hops is native to South and Southeast Asia, and has become naturalized in the Pacific, Central America, and the Caribbean. In America it is considered an invasive weed.

A handful of other *FLEMINGIA* species are found in Indonesia,¹⁰ but none have persistent bracts. Wild hops is sometimes confused with showy desmodium, *PHYLLODIUM PULCHELLUM* (L.) Desv.,¹¹ an erect bush which also has flowers in long chains, in which each white flower is surrounded by a *pair* of bracts (rather than a single folded bract as in wild hops). Showy desmodium also has trifoliate leaves, versus the single (1-foliate) leaves of wild hops. See picture below. It also has smaller pods, only about 6 mm long.



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Showy desmodium is distributed from India and China through Malaysia, Indonesia and Australia.

¹⁰ Including at least *F. LINEATA*, *F. MACROPHYLLA*, and *F. INVOLUCRATA* (Van Meeuwen et al. 1996:432–433), and probably also *F. STRICTA*, which has been described for Java.

¹¹ Synonym *DESMODIUM PULCHELLUM* (L.) Benth.

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