

FOOD

LEGUMES

BEANS AND LEGUMES USED FOR FOOD IN P.N.G..

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NAMES

English: Peanut
Tok pisin: Pinat

Scientific name: *Arachis hypogea* L.
Plant family: Fabaceae

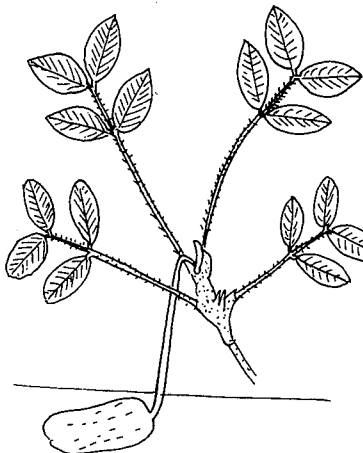
DESCRIPTION A spreading bushy plant up to about 40cm high. Leaves are made up of 2 pairs of leaflets arranged opposite each other. Flowers are produced in the axils of leaves. Virginia types have the flowers in alternate pairs. Spanish and Valencia types have several flower branches one after another along the stem. Pods are produced on long stalks which extend under the ground.

DISTRIBUTION Plants grow from sea level up to about 1650m altitude. They cannot tolerate waterlogging.

CULTIVATION Normally shelled seeds are planted 2-5cm deep. It is best to plant at the end of the wet season. A good soil fertility is required.

PRODUCTION It takes from 3½ to 5 months till maturity. They are harvested when the top of the plants die. The whole plant is pulled out.

USE The seeds can be eaten raw or cooked. The young leaves are edible cooked.



FOOD VALUE	/ 100 g edible portion						
	moisture	energy	protein	calcium	iron	provitA	provitC
seeds raw	42.2%	303cal	15g	56mg	2.1mg	20 g	11mg
cooked	47.1%	557cal	27.1g	48mg	2.3mg	40 g	5mg
leaves			5.6g				

INSECTS Leaf roller *Adoxophyes melichron*
Cowpea aphid *Aphis craccivora* Koch
Horned weevil *Apirocalus cornutus* Pasc.
Pumpkin beetle *Aulacophora coffeae* Hornstedt
Mole cricket *Gryllotalpa africana* Beauv.
Taro beetles *Papuana kiroi* End.; *P. trinodosa* Prell; *P. woodlarkiana* Ment..

Also *Euborellia annulipes* Lucas; *Philia femorata* Walk.; *Nysius epiensis* China.

DISEASES Collar rot due to fungus *Corticium rolfsii* Sacc. and *Aspergillus niger* van Tieghem.
Leaf spot due to fungi *Mycosphaerella arachidicola* Jenkins and *Mycosphaerella berkeleyi* Jenkins
Rust due to fungus *Puccinia arachidis* Spig.

PESTS Root knot nematodes.

IMPORTANCE A very popular snack food in all areas where it can be grown.

NAMES

English: Winged bean
Tok pisin: Asbin.

Scientific name: *Psophocarpus tetragonolobus*
Plant family: Fabaceae. (L.)D.C.

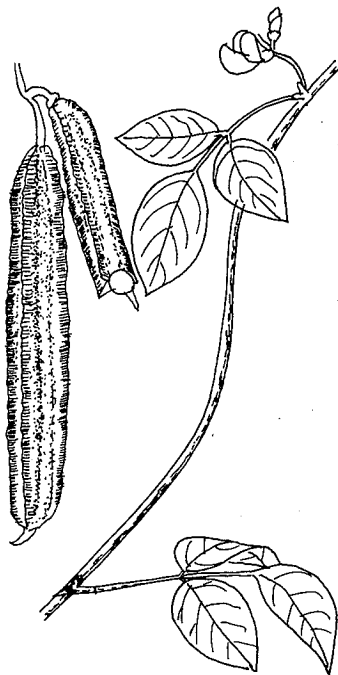
DESCRIPTION A climbing perennial bean up to 3 or 4 m tall. Pods have wings and are 6-36 cm long with 5-20 seeds. Seeds can be white, yellow, brown or black. Nodules on the roots are many and large.

DISTRIBUTION The bean grows from sea level up to about 1850m altitude. It normally only produces tubers between 1200 and 1850m.

CULTIVATION Seeds are sown at the beginning of the rainy season. Seeds germinate and grow slowly for the first 3 to 5 weeks. For tubers, vines are pruned off at about 1m high (or left unstaked) and some flowers are removed.

PRODUCTION The first green pods are ready about 10 weeks after sowing. Tubers are ready after 4-8 months. Seed yields of 1.2 tons/ha and tuber yields of 4 tons/ha are possible.

USE The young pods are edible.
The ripe seeds are edible.
The young leaves are edible.
The flowers are edible.
The root tubers are edible.



	/ 100 g edible portion						
	moisture	energy	protein	calcium	iron	provitA	provitC
seeds	6.7-24.6%		29-37.4g	204-370mg	10mg		
Pods	76-92%		1.9-2.9g	63-330mg	1.5mg	0.54 g	22-37mg
leaves	64.2-77.7%		5.7-15g				
flowers	84.2%		5.6g				
tubers	54.9-65.2%		12.2-15g	40mg	3mg		

INSECTS Bean fly *Ophiomyia phaseoli* (Try.)
Winged bean blotch miner *Leucoptera* sp
Pea blue butterfly *Lampides boeticus* L.

Also *Aphis craccivora* Koch; *Aphis gossypii* Glov.; *Hedylepta* spp.; *Maruca testulalis* Geyer; *Henosepilachna signatipennis* Bois.; *Nezara viridula* L.; *Oribius inimicus* Mshl.; *Phaneroptera brevis* Serv.; *Prosoplus obliquiplagiatus* Breun.; *Riptortus annulicornis* Boisd.; *Spodoptera litura* Fab.

DISEASES False rust due to a fungus *Synchytrium psophocarpi* Racib.
Leaf spot due to a fungus *Cercospora psophocarpi*
Powdery mildew due to a fungus *Erysiphe* spp.
Leaf curl and vein thickening due to a virus.
Small leaves due to "little leaf" mycoplasma.

PESTS Root knot due to nematodes - *Meloidogyne incognita*
Mites - *Tetranychus* sp

IMPORTANCE Very important for tubers in the Eastern and Western Highlands. Moderately common for beans in other places.

NAMES

English: Lablab bean
Hyacinth bean

Scientific name: *Lablab purpureus* (L) Sweet
(Syn. *Lablab niger* Medik
and *Dolichos lablab* L. and others.)
Plant family: Fabaceae.

DESCRIPTION A climbing bean which can have vines 1-5m long. Leaves are made up of 3 almost triangular leaflets. Often the plants are flushed purple. Flowers are often white but can vary from red to blue. The pods are flattened, pointed and up to 12cm long and 2cm wide. Inside there are 3-5 white or dark seeds. Seed pods have a wavy margin. (This bean is similar to Lima bean but the keel of the flower is not spirally twisted, the pod ends more bluntly with a long thin style at the end and the hilum on the seed is longer.

DISTRIBUTION It mostly grows between 750 and 2175m altitude. It is drought resistant and can grow in quite low rainfall areas.

CULTIVATION Seeds are sown at 30 x 60cm spacing near stakes, or trees.

PRODUCTION Young pods are ready 4-6 months after planting and seeds 6-8 months. Pods are often harvested over 2 or 3 years. Pollination and seed setting are reduced in cold weather.

USE The young pods, ripe seeds and young leaves are edible, cooked.

The seeds can also be sprouted then crushed and cooked.

CAUTION Many types can be poisonous. They should be boiled and the cooking water thrown away.

	/ 100 g edible portion					
	moisture	energy	protein	calcium	iron	provitA provitC
young pods	82.4%	10cals	2.8-4.5g			
young seeds			8.3g			
ripe seeds	9.6%	65cals	21-25g	80mg	4.5mg	100 g
leaves			3g			

INSECTS

DISEASES Leaf spot due to fungus *Ascochyta dolichi* Fragaso
Angular leaf spot due to fungus *Cercospora canescens* Ellis
and Martin

PESTS

IMPORTANCE A traditional bean common and quite widely used in some Highland areas.



NAMES

English: Snake bean
Yard long bean

Scientific name: *Vigna unguiculata* subsp.
sesquipedalis (L.) Verdc.
(Syn. *Vigna sesquipedalis* (L.) Fruw.)
Plant family: Fabaceae.

DESCRIPTION A climbing bean with long pods. Dwarf kinds also occur. Leaves have 3 leaflets. The flowers can be white, yellow or blue. Pods are long (up to 90cm) and flexible.

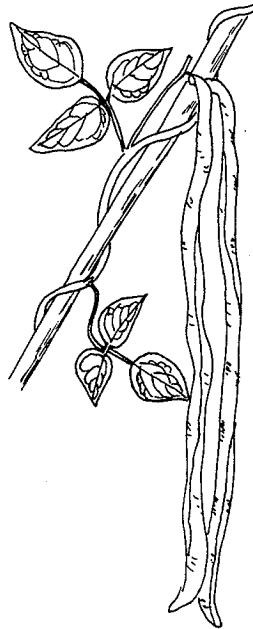
DISTRIBUTION Plants grow in coastal areas from sea level up to about 300m. It suits wet areas and cannot tolerate drought.

CULTIVATION Plants are grown from seed. Seeds germinate quickly and plants grow rapidly. A spacing of 60cm is suitable. Plants need sticks to climb up. Often 5 or 6 seeds are sown around the one stick. Plants are often topped when growing too vigorously.

PRODUCTION

USE Both the young pods and leaves are edible.

The ripe seeds can also be eaten.



	/ 100 g edible portion					
	moisture	energy	protein	calcium	iron	provitA provitC
Pods	88.3%	37cal	3g	44mg	0.7mg	
leaves	88.4%	34cal	4.2g	108mg	4.7mg	

INSECTS Bean fly boring stems - *Ophiomyia phaseoli* (Tryon.)
Cowpea aphid - *Aphis craccivora* Koch
Legume pod borer - *Maruca testulalis* (Geyer)
Pod borer - *Lampides boeticus* (L.)
and most other bean insects but often damage less.

DISEASES Leaf spot due to a fungus *Cercospora canescens* Ell. & Martin
Rust due to fungus *Uromyces vignae* Barcl.
Cowpea mosaic virus.

PESTS

IMPORTANCE The most common and important bean in coastal areas.

NAMES

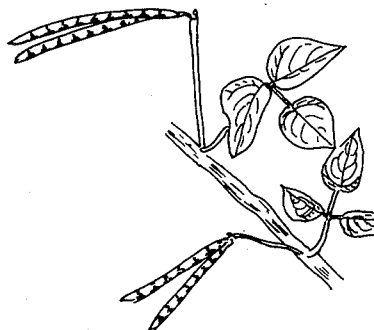
English: Cowpea

Scientific name: *Vigna unguiculata* subsp.
unguiculata
 (Syn. *Vigna sinensis* (L) Savi ex Hassk.)
 Plant family: Fabaceae

DESCRIPTION A creeping bean type plant with straight firm pods. Both cover crop types (leafy) and grain types occur. Flowers occur often in pairs on the end of flowering shoots.

DISTRIBUTION It grows from sea level to 1800 metres altitude. Plants can stand high temperatures. Some kinds can tolerate drought.

CULTIVATION It is grown from seeds. Seed collection is easy.



PRODUCTION

USE The young leaves, young pods and ripe seeds are all eaten.

The seeds are also used for bean sprouts.

FOOD VALUE

/ 100 g edible portion

	moisture	energy	protein	calcium	iron	provita	provitC
young pods	88.7%	36cal	3.7g	54mg	1.4mg	455 g	24mg
young leaves	89%	30cal	4.8g	73mg	2.2mg		36mg
seeds (dry)	11.5%	340cal	22.7g	110mg	6.5mg	10g	1mg

INSECTS

Cowpea aphid *Aphis craccivora* Koch
 Corn earworm *Heliothis armiger* Hubn.
 Bean pod borer *Maruca testulalis* Geyer
 Cluster caterpillar *Spodoptera litura* Fab.
Euproctis sp nr. *fulvistrata*

DISEASES

Leaf spot due to a fungus *Cercospora canescens*
 Associated with leaf spot *Periconia lyssoides* Pers. ex Schw.
 Cowpea mosaic virus

PESTS

IMPORTANCE It has become well accepted in some areas. e.g. Baiyer River.

NAMES

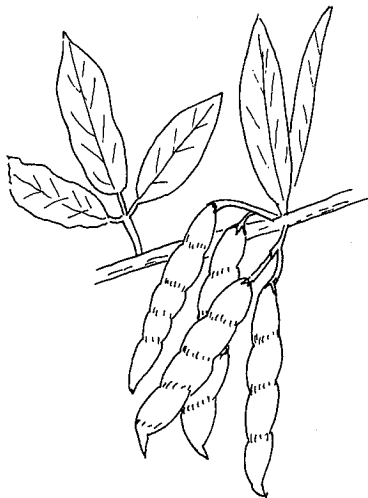
English: Pigeon pea

Scientific name: *Cajanus cajan* (L)Millsp.
Plant family: Fabaceae.

DESCRIPTION An upright perennial shrubby legume. They can be up to about 4m tall. A leaf consists of 3 leaflets. Leaflets are narrow and green with a silvery green underneath. Leaflet size can be 10cm x 3cm. Flowers are red and yellow. It has a strong deep taproot. Pods are long straight and narrow often with 4-8 seeds.

DISTRIBUTION Plants grow from sea level up to about 1800m. They can tolerate drought and are suited to a drier climate. It suffers in waterlogged soils and is damaged by frost.

CULTIVATION They are grown from seeds. A spacing of 1.5m x 1.5m is suitable. Plants can be cut back and allowed to regrow.



PRODUCTION Pods are ready after 5 months. Plants will often live for 3-4 years. Plants are cross pollinated by insects or self pollinated.

USE Young leaves, shoots and pods are eaten.

Ripe seeds are also edible.

Bean sprouts can be produced and eaten.

	/ 100 g edible portion						
	moisture	energy	protein	calcium	iron	provitA	provitC
Pods	64.4%	114cal	8.7g	72mg	2mg	45 g	32mg
leaves			9g				
seeds ripe	10%		20g	100mg	5mg	0-140 g	
young			7g				

INSECTS Pea blue butterfly *Lampides boeticus* L.

Crusader bug *Mictis profana* F

Legume pod borer *Maruca testulalis* (Geyer)

Corn earworm *Heliothis armigera* (Hubner)

Agapophyta spp

Coptosoma pygmaeum Mont.

Polyommatus haeticus (L)

Phaneroptera brevis Aud.-Serv.

DISEASES Leaf spot-fungus *Mycovellosiella cajani* (P.Henn)Rangel ex Trot.
Pink disease-fungus *Corticium salmonicolor* Berk. & Br.

PESTS

IMPORTANCE A crop being tried out in many villages.

NAMES

English: Soybean

Scientific name: *Glycine max* (L) Merr.
Plant family: Fabaceae

DESCRIPTION A small erect bean up to 60cm tall. Stems, leaves and pods are softly hairy. The leaves have 3 leaflets. Flowers are small and white or blue. They occur in groups in the axils of leaves. Pods have 2-4 seeds. The seeds can be yellow to black.

DISTRIBUTION It suits lowland areas. It can be grown from sea level to 2000 metres altitude. Many varieties will not flower in the tropics (short days). It needs fertile soil. The best soil acidity is pH 5.5 to 7.0. It is damaged by frost.

CULTIVATION It is grown from seed. Seeds need to be inoculated with bacteria before planting. Plants need to be about 20cm apart.

PRODUCTION Plants flower about 8 weeks after sowing and pods mature about 16 weeks after sowing. Often plants are pulled up and hung up before threshing out the seed.

USE The young pods and ripe seeds are eaten.

Sometimes the young leaves are eaten.

The seeds are also used for sprouts, and for making cooking oil and soya sauce etc.

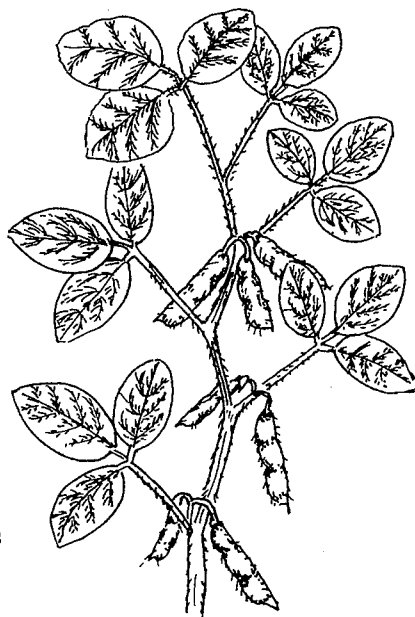
FOOD VALUE		/ 100 g edible portion						
	moisture	energy	protein	calcium	iron	provitA	provitC	
seeds young	68.2%	137cal	13g	78mg	3.8mg	360 g	27mg	
old	10.2%	400cal	35.1g	226mg	8.5mg	10 g	0	
leaves			6g					
sprouts	81.5%	62cal	7.7g	52mg	1.1mg	25 g	10mg	

INSECTS Bean fly boring stems *Ophiomyia phaseoli* (Tryon.)
Pod sucking bug *Riptortus obscuricornis* Dallas
Green vegetable bug *Nezara viridula* L.
Lady bird *Henosepilachna signatipennis* Bois.
Pumpkin beetle *Aulacophora pallidifasciata* Jac.
and others. *Cassena intermedia* Jac.; *Coelophora inaequalis* F.
Demonax collaris Pasc.; *Hedylecta indica* F.;
Oribius inimicus Mshl.; *Rhinoscapha lunehris* Chev.

DISEASES Leaf spot due to a fungus *Ascochyta* sp
Rust due to a fungus *Phakopsora oachyrhizi* Sydow
Leaf distortion probably due to a virus.

PESTS Root knot nematode *Meloidogyne* sp.

IMPORTANCE These beans can be found in small amounts in many places throughout the country.



NAMES

English: Lima bean

Scientific name: *Phaseolus lunatus* L.
Plant family: Fabaceae.

DESCRIPTION A perennial climbing bean. Pods are flat and have 3-4 seeds which are very variable in colour. It is often a tall vigorously climbing plant. It is one of the traditional beans of the Highlands.

DISTRIBUTION It is common between 500 and 2100m altitude but grows to the limit of cultivation (2700m). For germination it must have a soil temperature above 15.5°C and cannot withstand frost. In very hot weather seeds often do not set. It is sensitive to a pH less than 6.

CULTIVATION Sow 3-4 seeds in a hill and put a stick 2-3m tall in the middle. Hills should be about 1m apart. Seeds should be 2-4cm deep.

PRODUCTION Harvesting can begin after about 100 days. Dried beans can be stored for several months. Yields of 0.12kg of seeds per square metre have been obtained.

USE The leaves, young pods and seeds are all eaten.

The seeds are sometimes grown as bean sprouts then cooked and eaten.

CAUTION Some kinds have poison (hydrocyanic acid). This is destroyed by thorough cooking.

FOOD VALUE

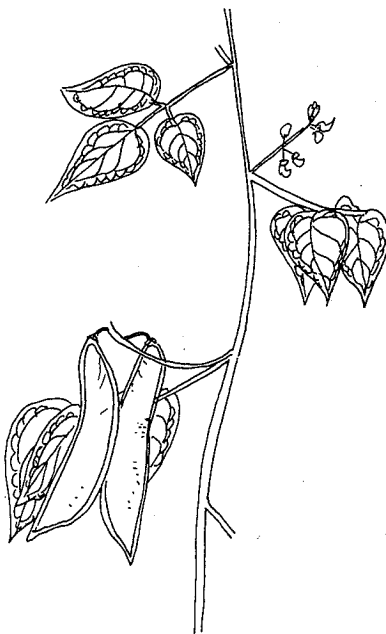
	/ 100 g edible portion					
	moisture	energy	protein	calcium	iron	provitA provitC
Seeds	12.6%	60cal	21g	90mg	6mg	
Pods	66.5%	23cal	2.5-7.5g			
Leaves			3-7.5g			

INSECTS Bean pod borer *Maruca testulalis* (Geyer)
Probably also other bean insects.

DISEASES Rust due to a fungus - *Phakopsora vignae* (Bres.) Arth.
Probably other bean diseases as well.

PESTS Root knot nematode - *Meloidogyne incognita* var. *acrita* Chitwood.

IMPORTANCE A quite important and common bean in many highland areas.



NAMES

English: Common bean

Scientific name: *Phaseolus vulgaris* L.

Plant family: Fabaceae.

DESCRIPTION Both short and climbing cultivars of this bean occur. Flowers are white to purple and pods smooth. Pods often have 10-12 seeds which are kidney shaped and coloured.



DISTRIBUTION It mostly grows from 700m to 2000m altitude. In the lowlands it suffers from pest and disease but it can be grown to sea level.

CULTIVATION Plants are grown from seed. Seed should preferably be planted on raised beds. Climbing types need stakes.

PRODUCTION Dwarf kinds take 6-8 weeks to mature and climbing types take 10-12 weeks.

USE The young pods, leaves and mature seeds are edible.

FOOD VALUE	/ 100 g edible portion						
	moisture	energy	protein	calcium	iron	provitA	provitC
Pods	91.5%	28cal	1.9g	75mg	1.2mg	323 g	18mg
seeds			22g				
leaves							

INSECTS Bean fly boring stems - *Ophiomyia phaseoli* Tryon
 Pod sucking bug - *Riptortus annulicornis* Boisd.
 Pumpkin beetles - *Aulacophora* spp.
 Green vegetable bug - *Nezara viridula* (L)
 Ladybird - *Henosepilachna signatipennis* Boisd.
Cassena intermedia Jacoby
 and other insects.

DISEASES Anthracnose-fungus-*Colletotrichum lindemuthianum* (Sacc. & Mag.)
 Angular leaf spot -fungus- *Isariopsis griseola* Sacc.
 Collar rot -fungus-*Pellicularia filamentosa* (Pat.) Rogers.
 White mould -fungus-*Ramularia deusta* (Fuckel) Karakulin
 Rust -fungus- *Uromyces appendiculatus* (Pers.) Unger
 Collar rot -fungus- *Sclerotium rolfsii* Sacc.
 Mosaic due to a virus.

PESTS Root knot nematode - *Meloidogyne arenaria* (Neal) Chitwood
 and *Meloidogyne incognita* var. *acrita* Chitwood

IMPORTANCE Of considerable importance at high altitude locations.

NAMES

English: Pea

Scientific name: *Pisum sativum* L.
Plant family : Fabaceae.

DESCRIPTION A creeping plant with white flowers. Leaves are made up of 1-3 pairs of leaflets and a branched tendril at the end. The pods are swollen and green and can have up to 10 seeds inside.

DISTRIBUTION Plants grow best at altitudes over 1000m. They suit a humid climate. They are frost tolerant except at flowering.

CULTIVATION Plants are grown from seed. Seed can be collected for resowing. A spacing about 5cm apart in rows 25cm apart is suitable. If rotting is a problem, plants can be supported off the ground. Plants need inoculation with bacteria for good production.

PRODUCTION

USE Mostly the young seeds are eaten. Sometimes the young pods and leaves are eaten.



FOOD VALUE	/ 100 g edible portion						
	moisture	energy	protein	calcium	iron	provitA	provitC
peas	75.6%	94cal	6.2g	32mg	1.2mg	405 g	27mg

INSECTS Corn earworm *Heliothis armigera* (Hubner) and others.

DISEASES Leaf spot due to a fungus *Mycosphaerella pinodes* (Berk & Blex) Vest.
Mosaic due to a virus.

PESTS

IMPORTANCE Gaining importance in some highland areas.

NAMES

English: Jack bean

Scientific name: *Canavalia ensiformis* D.C.

Plant family: Fabaceae

DESCRIPTION A perennial climber although short kinds do occur. Pods are long and sword shaped. Pods can be 25cm long. Flowers are red/purple. Seeds are white with a light brown hilum half as long as the seed.

DISTRIBUTION It requires a fairly high temperature (15-30°C). It will possibly grow up to 900m altitude. It is fairly drought resistant and also has some resistance to waterlogging and salt in the soil. It can tolerate shade.

CULTIVATION It is grown from seeds. They preferably need a support to climb over.

PRODUCTION Green pods are produced in 3-4 months but ripe seeds need 6-9 months.

USE The leaves and topshoots are eaten.
The young pods are eaten.
The flowers can be eaten.
The young and ripe seeds are eaten.

CAUTION Because of toxic substances in the skin of the seed, the cooking water should be changed during cooking. The outer skin should be removed.

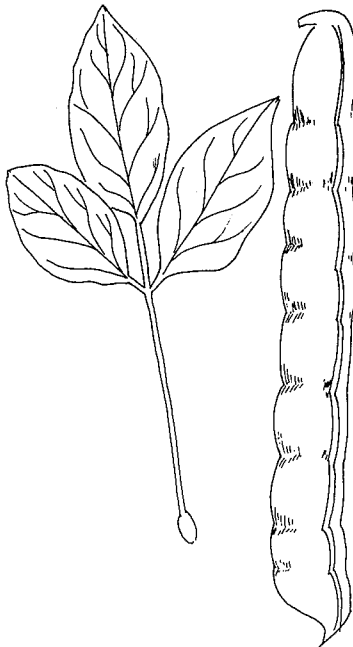
	/ 100 g edible portion					
	moisture	energy	protein	calcium	iron	provitA provitC
Pods young	79%	82cal	6.9g	60mg	3mg	
Seeds young						
ripe	11.2%	348cal	21g	134mg	8.6mg	2mg
Leaves			2-7g			

INSECTS

DISEASES

PESTS

IMPORTANCE Being accepted and grown in some coastal and midaltitude areas.



NAMES

English: Sword bean

Scientific name: *Canavalia gladiata*(Jacq)
D.C.

Plant family: Fabaceae

DESCRIPTION A climbing or sometimes bushy and upright bean plant. The leaves have 3 large leaflets. The flowers are in groups and white. The pods are long (20cm) and curved. Seeds are coloured red or pink. The hilum is dark brown and almost as long as the seed.

DISTRIBUTION It requires a tropical climate. It grows from sea level to about 1 000m altitude. They are drought and salt resistant. They can tolerate some shade.

CULTIVATION They are grown from seeds. Seeds can be sown 5 cm deep. Plants should be 60-70 cm apart.. Climbing types need support.

PRODUCTION

USE Young pods are cooked and eaten. Seeds can be cooked and eaten but the water should be changed.

CAUTION The seeds can be poisonous due to hydrocyanic acid and saponin.

FOOD VALUE

	/100 g edible portion						
	moisture	energy	protein	calcium	iron	provitA	provitC
Pods	89.2%	34cals	2.8g				
seeds-dry	15 %	318cals	27.1g				
-fresh	88.6%		2.7g				

INSECTS

DISEASES

PESTS

IMPORTANCE Only occasionally grown



NAMES

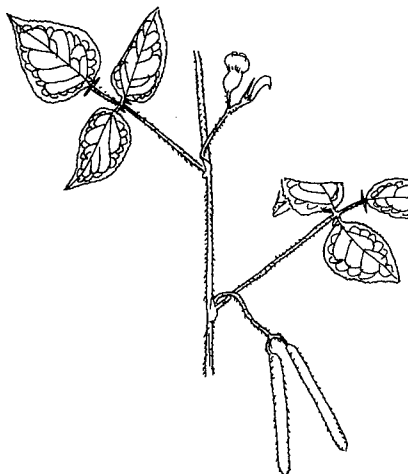
English: Mung bean
Urd

Scientific name: *Vigna mungo* (L)Hepper
(Syn. *Phaseolus mungo* L.)
Plant family: Fabaceae.

DESCRIPTION A small annual bean with hairy pods. Leaves have 3 leaflets. Flowers are yellow. Seeds are small and black. There are 4 to 10 seeds per pod.

DISTRIBUTION Mainly coastal but probably will grow up to 1800 m altitude. It suits dry areas. It is drought resistant. It cannot stand frost or long periods of cloud.

CULTIVATION It is grown from seed. Seed collection is easy.



PRODUCTION Pods are ready to harvest 2 to 4 months after planting. Pods shatter easily. It is easiest to pull the whole plant, dry them for a week then thresh out the seeds.

USE The ripe seeds are eaten.
The young pods and young leaves are also edible.
The beans are also used for bean sprouts.

FOOD VALUE	/ 100 g edible portion						
	moisture	energy	protein	calcium	iron	provitA	provitC
seeds ripe	10.6%	341cal	22.9g	105mg	7.1mg	55 g	4mg
leaves			8g				
sprouts			2-6g				

INSECTS Larvae of the blue butterfly *Lampides boeticus* L.
Pod sucking bug *Riptortus rubronotatus* Blote
Grass bug *Halticus tibialis* Reut.
Cassena papuana Jac.

DISEASES Leaf spot due to a fungus *Myrothecium roridum* Tode ex Fr.

PESTS Root knot nematodes *Meloidogyne incognita* var. *acrita* Chitwood

IMPORTANCE It is being encouraged and grown in a number of coastal areas.

NAMES

English: Green gram

Scientific name: *Vigna radiata* (L) Wilczek
 (Syn. *Phaseolus aureus* Roxb.
 & *Vigna aureus* (Roxb.) Hepper
 & *Phaseolus radiatus* L.)

Plant family: Fabaceae.

DESCRIPTION An upright hairy bean plant which can be 1m tall. It has many branches. Flowers are pale yellow. Pods are black and the 10-20 seeds are usually green.

DISTRIBUTION The plant will grow from sea level up to probably 2000m. It is drought resistant but can't stand waterlogging. Plants are damaged by frost.

CULTIVATION Plants are grown from seed. Often 2-3 seeds are sown in holes 50-60cm apart.

PRODUCTION Green pods are ready after about 2 months, and ripe pods may take another 1-2 months.

USE Seeds are eaten ripe.
 Young pods can be eaten.
 Young leaves can be eaten.
 The seeds can be germinated for sprouts.

FOOD VALUE / 100 g edible portion

	moisture	energy	protein	calcium	iron	provitA	provitC
Seeds							
Young pods							
Leaves							
Sprouts							

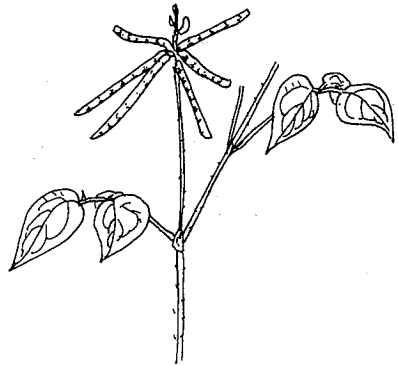
Seeds
 Young pods
 Leaves
 Sprouts

INSECTS Probably similar to other beans

DISEASES Probably similar to other beans.

PESTS

IMPORTANCE Not widely grown.



NAMES

English: Rice bean

Scientific name: *Vigna umbellata* (Thunb.)
Ohwi & Ohashi
(Syn. *Phaseolus calcaratus* Roxb.)

DESCRIPTION A climbing bean plant. Stems are hairy. Leaves have 3 leaflets which can vary in shape. Seeds are small (5-8mm long) and yellow to brown in straight pods about 10cm long and 5mm wide.

DISTRIBUTION It grows from 0-1800m altitude. It suits wet climates.

CULTIVATION It is grown by seeds. Seed collection is easy. Seeds often have a hard skin which must be broken (e.g. by scraping) before seeds will germinate easily.



PRODUCTION

USE The young pods and ripe seeds are eaten.

The young leaves can be eaten.

The seeds are used in bean sprouts.

(Seeds should be cooked or crushed if fed to pigs.)

FOOD VALUE

	/ 100 g edible portion						
	moisture	energy	protein	calcium	iron	provitA	provitC
seeds	14%	335cal	18.5g	80mg	5mg	0	9mg
leaves	86.4%						

INSECTS Bean pod borer *Maruca testulalis* Geyer
Ladybird *Epilachna signatipennis* Boisd.
Green vegetable bug *Nezara viridula* L.

DISEASES Blossum blight due to a fungus *Choanephora cucurbitarum*
(Berk. & Rav.) Thaxter
False rust due to fungus *Synchytrium phaseoli* Weston
Mosaic probably due to a virus

PESTS Root knot nematode *Meloidogyne javanica* Chitwood
Meloidogyne arenaria Chitwood

IMPORTANCE Seen occasionally in several areas but only of minor importance as a food.

NAMES

English: Scarlet runner
bean

Scientific name: *Phaseolus coccineus* L.
(Syn. *Phaseolus multiflorus* Willd.)
Plant family: Fabaceae.

DESCRIPTION This climbing bean has bright red flowers. The stems are often hairy. The pods are long (30cm.) and with a wavy edge. The seeds are large and can be several different colours. It sometimes has a root tuber.

DISTRIBUTION It is grown in the highlands. On the coast, seedlings die and pods are not formed. It is damaged by frost.

CULTIVATION It is grown from seeds. It needs sticks to climb up. It can be allowed to regrow from the tubers or the tubers replanted.

PRODUCTION

USE The very young pods can be eaten. The seeds are edible. The tubers can be eaten after they are cooked and the cooking water thrown away.

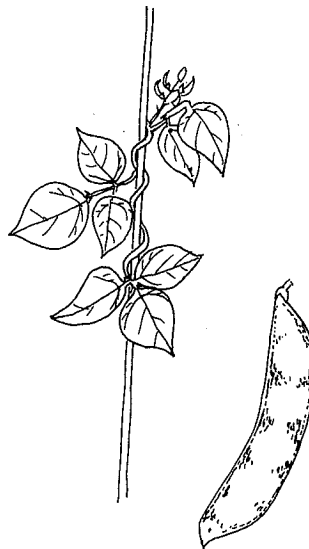
FOOD VALUE	/ 100 g edible portion						
	moisture	energy	protein	calcium	iron	provitA	provitC
pods	58.3%		7.4g	50mg	2.6mg		
seeds-fresh	34.2%		2.6g	60.6mg	4.1mg		
tuber			4.2g				

INSECTS

DISEASES

PESTS

IMPORTANCE Only occasionally grown.



NAMES

English: Velvet bean

Scientific name: *Mucuna pruriens* (L.) D.C. var. *utilis* (Wall. ex Wight) Baker ex Burck. (Syn. *M. utilis* Wall.)

Plant family:

DESCRIPTION A climbing bean with vines 2-3m long. Leaves are without hairs and leaflets are about 10cm x 8cm. Flowers are purplish. Pods are 9-14cm. long, hard, curved and covered with soft hairs. There are 4-6 white seeds inside.

DISTRIBUTION A bean of low altitudes. The wild species is used as a cover crop in coconut plantations.

CULTIVATION Plants are grown from seed.

PRODUCTION

USE The young leaves, young pods and ripe seeds are edible cooked.

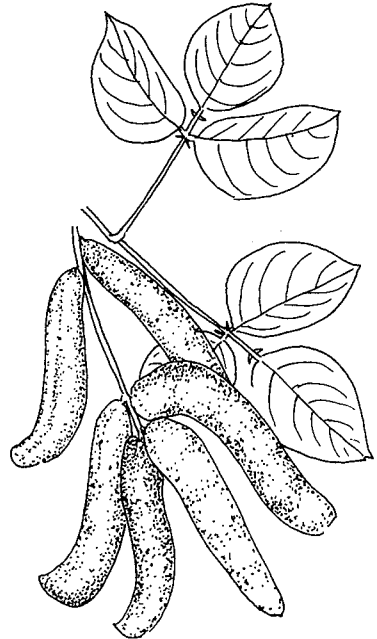
CAUTION Wild *M. pruriens* is both poisonous and has itchy hairs.

FOOD VALUE / 100 g edible portion

	moisture	energy	protein	calcium	iron	provitA	provitC
young leaves							
young pods							
ripe seeds							

INSECTS**DISEASES****PESTS**

IMPORTANCE Plants are grown and used occasionally in some coastal areas.



NAMES

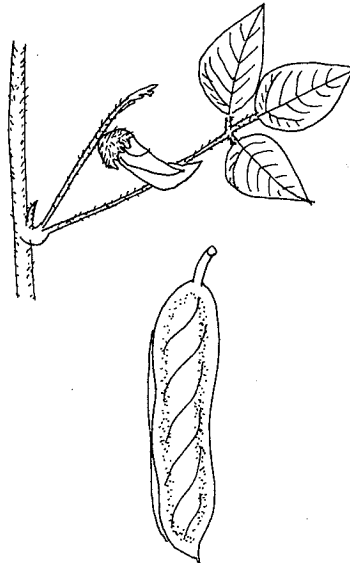
Tok ples:Ularat
(Mendi)

Scientific name: *Mucuna albentisii* F.v Muell
Plant family:

DESCRIPTION A climbing legume with a brown rusty appearance and short hairs on the stem and leaves. Normally there are a clump of white or yellow flowers together. The pod has wings along the edge and sides. The seeds can be black or grey. The leaflets are about 12cm across.

DISTRIBUTION It grows in rainforest and bush from near sea level to over 2000m altitude.

CULTIVATION It grows wild.



PRODUCTION

USE The seeds are cooked and eaten.

FOOD VALUE / 100 g edible portion
moisture energy protein calcium iron provita provitC

INSECTS

DISEASES

PESTS

IMPORTANCE A minor wild edible plant. Eaten at least in the Mendi area.

NAMES

English: Broad bean

Scientific name: *Vicia faba* L.

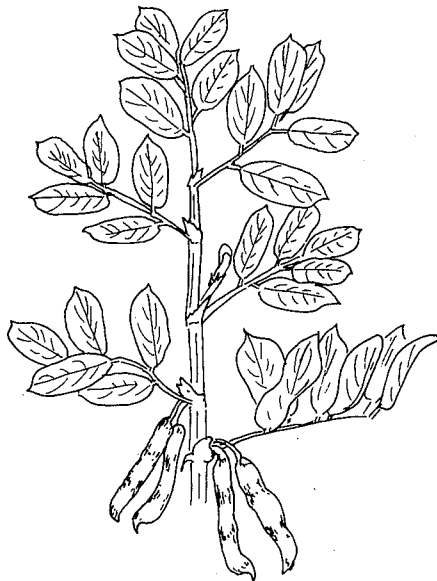
Plant family: Fabaceae

DESCRIPTION An upright plant up to 1m tall. It has square stems and white flowers with black spots. Pods are large and contain several large beans inside.

DISTRIBUTION It is only suitable for the highlands, over about 1200m. It mainly occurs between 1900 and 2700m altitude. It is frost tolerant.

CULTIVATION Seeds are sown at 15 to 40 cm spacing. If the seed pod formation is poor, it can be improved by pinching out the tops of the plants when in flower. Hand pollination also helps.

PRODUCTION Time to maturity is 12-16 weeks.



USE It is mostly the young beans that are eaten.

The ripe beans and leaves are also edible.

FOOD VALUE

	/ 100 g edible portion						
	moisture	energy	protein	calcium	iron	provitaA	provitC
young seeds	75.6%	92cal	8.2g	26mg	1.8mg	135 g	26mg
ripe beans	13.8%	328cal	25g	104mg	4.2mg	65 g	0
leaves			5.6g				

INSECTS

DISEASES

PESTS

IMPORTANCE Moderately common in some highland areas but does not produce well.

NAMES

English: Guar bean or
Cluster bean.

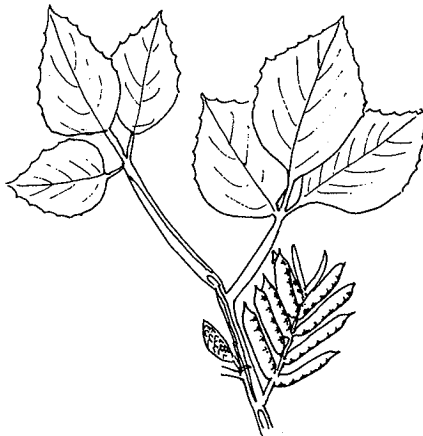
Scientific name: *Cyamopsis tetragonolobus* (L.)
Taub.

Plant family: Fabaceae

DESCRIPTION An upright bushy plant
often only 1m high. It produces clusters
of thick, fleshy pods. The leaf stalks
have grooves.

DISTRIBUTION It is a hardy drought
resistant plant. It suits drier areas.

CULTIVATION They are grown from seed.



PRODUCTION Plants mature in 3 to 3½
months.

USE The green immature pods are eaten.

FOOD VALUE		/ 100 g edible portion				
moisture	energy	protein	calcium	iron	provitA	provitC
82.5%		3.7g			330I.U.	49mg

INSECTS

DISEASES

PESTS

IMPORTANCE This bean has only been tried in small trial plots.

NAMES

English: Chickpea

Scientific name: *Cicer arietinum* L.
Plant family : Fabaceae

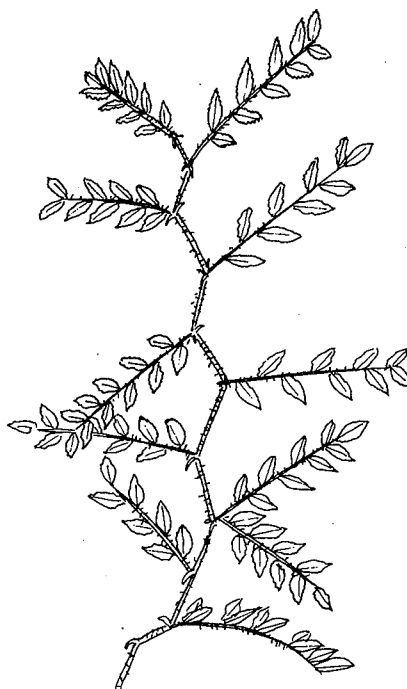
DESCRIPTION An annual legume with many branches and pink flowers. Plants are 40-50cm high and all parts are hairy. It has leaves made up of 9-15 leaflets along a stalk. The flowers are produced singly. Pods are 2-3cm long and have 1 or 2 seeds. The seeds are angular and up to 1cm across. The seed colour can vary.

DISTRIBUTION It suits high altitudes because it needs cold nights with dew. It is well suited to semi arid regions.

CULTIVATION It is grown from seed.

PRODUCTION

USE Mainly the ripe seeds are eaten. The young leaves, shoots, and pods are sometimes eaten.



FOOD VALUE

	/ 100 g edible portion						
	moisture	energy	protein	calcium	iron	provitA	provitC
seeds ripe	11%	362cal	20g	114mg	2.2mg	15 g	trace
leaves			4-8g				

INSECTS

DISEASES

PESTS

IMPORTANCE Very rarely grown.

