

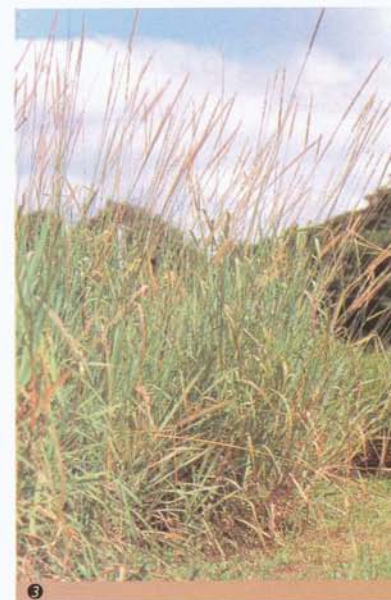
Setaria should not be fed to horses (see Section 3, Special Considerations).

Both varieties are easily propagated by rooted tillers.

Note:

'Kazungula' (*S. sphacelata* cv. Kazungula in Australia) is another variety of this species which can sometimes be found in Southeast Asia. It is lower growing than 'Lampung' or 'Solander' and is more suited to grazing. 'Splenda' (*S. sphacelata* cv. Splenda in Australia) is a seed-producing variety similar to 'Lampung'.

- 1 'Splendida' used for hedgerows in the Philippines (WS)
- 2 'Splendida' is easy to cut (WS)
- 3 'Solander' produces seed while 'Splendida' does not (JH)
- 4 *Setaria* varieties have a flattened stem at the base and blue-green leaves (JH)



Legumes

Arachis pintoi

Recommended varieties:

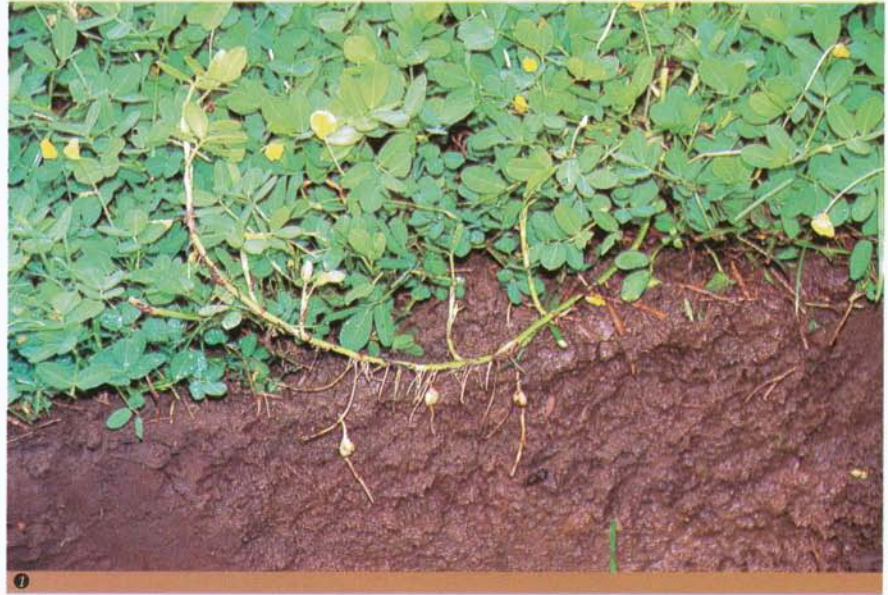
'Amarillo'

'Itacambira'

- low growing stoloniferous legume
- very persistent especially under heavy grazing
- good ground cover under trees
- high quality animal feed
- establishes easily from cuttings

but

- needs moderately fertile soils
- not suited to long dry seasons



Arachis pintoi is a vigorous stoloniferous legume that forms a dense green carpet usually with a mass of yellow flowers. It is a high-quality feed for all animals including chickens, ducks and pigs. It can withstand heavy grazing or cutting. It is an excellent ground cover for weed control under trees and erosion control on slopes.

There are many useful varieties of *A. pintoi*. Of these, 'Itacambira' and 'Amarillo' are the most widely used in Southeast Asia.

A. pintoi needs moderately fertile soils. It is best suited to the wet tropics with short or no dry season. It is not suited to areas with a long dry season except in cooler areas. It grows well in light to moderate shade under trees.

Unlike other legumes, *A. pintoi* needs to be cut or grazed frequently to improve its yield and persistence.

It can be easily established from stolons and rooted cuttings. A special feature of this legume is that it is a peanut and produces seed under ground which makes harvesting of seed difficult. Seed quality falls quickly during storage. Establishment from seed is easy, provided good seed is available.

- 1 *Arachis pintoi* spreads quickly through stolons and sets seeds below ground (PH)
- 2 All *A. pintoi* varieties are good ground covers under trees (WS)
- 3 'Amarillo' produces a lot of flowers (WCC)
- 4 *Arachis pintoi* (here 'Itacambira') varieties form dense swards (JH)



Legumes

Calliandra calothyrsus

Recommended variety:

'Besakih'

- good tree legume for cooler areas
- can grow in acid soils
- high leaf yield under cutting
- good fire wood

but

- palatable only when fresh
- needs to be planted from seed
- slow seedling growth



Calliandra calothyrsus is a long-lived small tree which is very productive under regular cutting. Unlike many other legumes, it is usually free of pests and diseases. It has distinctive red flowers.

'Besakih' is particularly adapted to cooler areas (eg. high elevation) and wet areas with a short or no dry season. It grows in a wide range of soils, including acid soils, but needs moderate fertility. Once established, it survives dry periods, particularly on deep soils.

It is often grown as hedgerows. Sheep and goats eat it readily but cattle sometimes require a short period to get used to it. A special feature of *C. calothyrsus* is that it has to be fed fresh, since wilted leaves are not palatable. 'Besakih' is successfully used for fattening cattle at altitudes above 500m in Bali.

It must be planted from seed. As with all tree legumes, seedling establishment is slow. For successful establishment seedlings must be protected from grazing animals, weeds and fire. Seed production may be poor in areas where there are no bats since these are known to be efficient pollinators of *Calliandra* flowers.

- ① 'Besakah' grows well in cooler areas (AP)
- ② It has distinctive square young stems (WS)
- ③ *Calliandra calothyrsus* produces good quality fire wood (AP)
- ④ It has a distinctive red flower (AP)



Legumes

Centrosema pubescens;
C. macrocarpum

Recommended varieties:

'Barinas' (*C. pubescens*)

'Ucayali' (*C. macrocarpum*)

- twining legumes
- good for weed control
- grow well with tall grasses for cut-and-carry

but

- not adapted to long dry seasons
- need moderately fertile, well-drained soils
- need to be planted from seed



'Barinas' and 'Ucayali' are vigorous twining legumes. They are a high-quality feed for animals. They are better suited to cutting than grazing. They can be used as cover crops to suppress weeds in crop fallows and annual crops. They can also be grown together with tall grasses for cut & carry feed.

'Ucayali' has bigger leaves than 'Barinas' and grows better in drier conditions. The white-flowering 'Barinas' is more vigorous than other varieties of *C. pubescens*. It produces roots from nodes, making it more persistent.

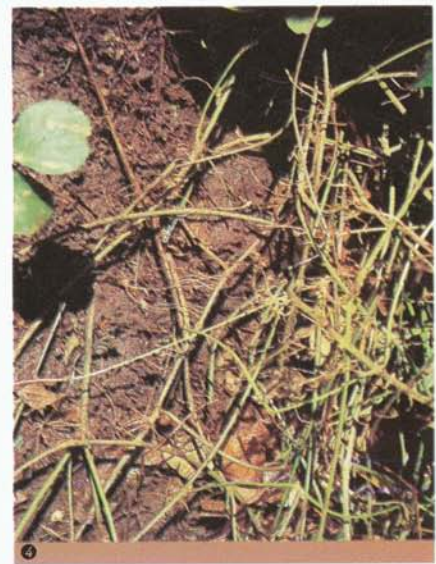
Both varieties need moderately fertile, well-drained soils for good growth. They grow best in the wet tropics with a short dry season. They do not tolerate waterlogging.

They cannot withstand heavy cutting or grazing. They grow best if left to regrow for long periods after cutting (more than 6 weeks) and if cut leniently (not close to the ground).

Both 'Barinas' and 'Ucayali' have to be grown from seed. They flower and produce seed early in the dry season. Seed production is only good if they are grown on trellises (eg. on fence lines). Seed yields are highest in areas with a distinct dry season.

All *Centrosema* species are susceptible to rhizoctonia leaf disease during wet periods, but 'Barinas' and 'Ucayali' recover well.

- 1 'Barinas' used as a cover crop in maize (shortly after harvest) in Indonesia (JH)
- 2 *Centrosema macrocarpum* 'Ucayali' has larger leaves than *C. pubescens* 'Barinas' (JH)
- 3 'Barinas' has white and pink flowers (JH)
- 4 'Barinas' produces roots at nodes which make it more persistent than common Centro (WS)
- 5 Both species (here 'Barinas') have large seeds and are easy to plant (JH)



Legumes

Desmanthus virgatus

Recommended variety:

'Chaland'

- shrubby legume for cutting
- grows best on fertile clay soil
- high-quality feed
- used for leaf meal production
- easy seed production

but

- not suited to acid soils
- needs to be planted from seed

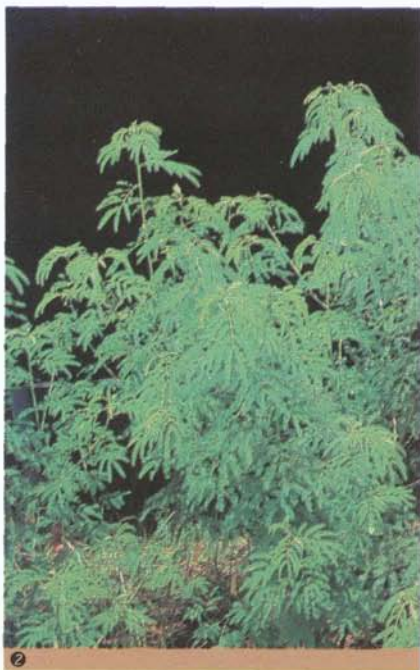


'Chaland' is an erect bushy legume growing to 2m which is used in Thailand. Individual plants usually persist for 3-5 years. The leaves are a high-quality feed that can be fed fresh or dried for leaf meal. It can be grown in hedgerows.

It is especially suited to fertile clay soils with neutral to high pH. Although it can survive in areas with a long dry season, it grows best in the wet tropics in areas with only a short dry season.

It has to be grown from seed. Seed production is easy in most areas where it is grown. The seed has a hard coat which prevents germination unless it is scarified (refer to the booklet 'Developing forage technologies with smallholder farmers - how to grow, manage and use forages').

Leaves of 'Chaland' are susceptible to damage by psyllid insect but plants recover well.



- ① 'Chaland' is leafy (JH)
- ② It is a shrubby legume (JH)
- ③ Seed production is easy (JH)

Legumes

Desmodium cinerea

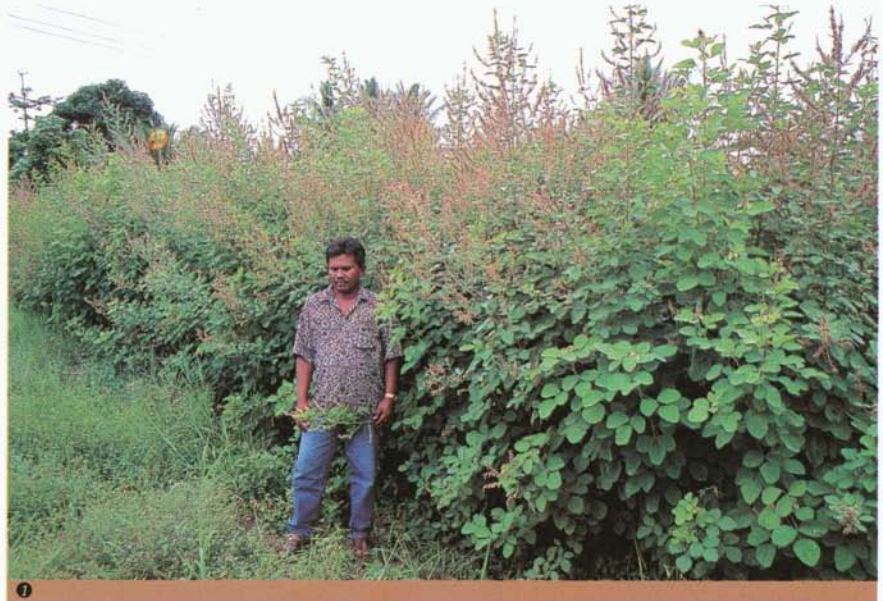
Recommended variety:
'Las Delicias'

This species used to be called
Desmodium rensonii.

- fast-growing shrub for cutting
- suited for hedgerows
- good quality feed
- best in wet tropics

but

- short-lived (up to 2-3 years)
- needs to be planted from seed



'Las Delicias' is a short-lived (2-3 years) shrub growing to 3 m. It has fast seedling growth which makes it easier to establish than other shrub legumes. Stems become woody and have few branches. It produces a lot of leaf under regular cutting.

It is best adapted to moderately fertile, neutral or slightly acid soils. It grows best in the wet tropics with a short or no dry season and is not suited to areas with a long dry season.