



A collaboration between AWI, GRDC, MLA, RIRDC and Dairy Australia

Pinto peanut

Scientific name(s)

Arachis pintoii

Strengths

- High quality forage
- Persistent under intensive grazing
- Tolerant of low fertility
- Tolerant of short periods of flooding.
- Productive in warm, moist environment
- Good ground cover
- Combines well with low, dense grasses
- Shade-tolerant

Limitations

- High seed costs considering high seeding rate required
- Must have good moisture for production
- Limited growth in cool or dry conditions
- Mostly too low for green-chop
- Underground seed attracts rodents
- Difficult to eradicate
- Relatively slow establishment

Plant description

Plant: creeping perennial legume forming a dense mat, 10 to 20cm deep.

Stems: smooth, hollow, round stems to about 3mm thick, rooting down along their length.

Leaves: made up of four oval-shaped leaflets, usually 3 to 4 cm long.

Flowers: pale to lemon yellow pea-type flowers, 12 - 17 mm across, on a long tubular "stem".

Pods: like a small peanut, produced on "pegs" mostly in the top 10cm of soil; 4,000 - 7,000 seed-in-pod/kg depending on cultivar.

Seeds: soft seed, usually sown in pod.

Pasture type and use

It forms a dense, low, leafy mat. Ideal for intensive pastures in the humid tropics and subtropics (e.g. dairy and horse pastures), and can form the base for no-till or limited-till systems with oversown ryegrass in the subtropics. It is also used as a live mulch for soil conservation and weed suppression, particularly in shaded situations such as under trees and vines.

Where it grows

Rainfall

Pinto peanut grows best under irrigation or in areas with an annual average rainfall in excess of 1,500 mm. Although it can survive in areas of lower rainfall, productivity is low.

Soils

It can grow on most soils providing moisture is adequate. It is best suited to moist, well-drained

conditions, but can also tolerate temporary waterlogging. Soil should be of at least moderate fertility to achieve satisfactory growth. It is tolerant of the relatively high levels of manganese and aluminium sometimes found in very acid soils, but is also adapted to fairly alkaline and slightly saline soils.

Temperature

Tops killed by moderate frost, but recovers quickly with onset of moist, warmer weather.

Establishment

Companion species

Grasses:

- mat-forming: carpet grass, humidicola, signal grass, clump: guinea grass, setaria (provided they are generally maintained at less than about 30 cm tall).

Legumes: generally not grown in association with other warm season legumes.

It can provide the warm season feed component in irrigated pastures in the subtropics and upland tropics sown to ryegrass and white clover.

Sowing/planting rates as single species

Seed should be sown at about 20 kg seed-in-pod/ha for pure stands such as seed crops and horticultural use. It should be placed 2 to 5 cm deep because surface sowings result in poor germination and high seed losses to birds and rodents. Be aware that some planting equipment might crush and destroy the soft, vulnerable seed.

Sowing/planting rates in mixtures

Sowing rates of less than 10 kg seed-in-pod/ha can result in scattered patches of peanut that cattle select to the detriment of associated grasses (usually sown at 2 - 5 kg/ha). It can also be sown with other low-growing legumes such as creeping verna, white clover and lotus.

Sowing time

It is best sown during warm weather, and when there is a reasonable likelihood of follow-up rain, usually September to March. Earlier sowings help ensure good ground cover in the first year.

Inoculation

It is highly specific, requiring special Pinto Peanut inoculum (CIAT 3101 strain).

Fertiliser

Pinto peanut does not require high levels of fertiliser in most situations, but it is advisable to use a moderate application of say 200 kg/ha of superphosphate and 50 kg/ha of muriate of potash (K Cl) when sowing into very infertile soils

Management

Maintenance fertiliser

If establishment fertiliser was required, a maintenance dressing of say 100 kg/ha of superphosphate and 25 kg/ha of muriate of potash (K Cl) every two years may be beneficial. Applications of molybdenum (Mo) as sodium molybdate at 300 g/ha or molybdenum trioxide at 150 g/ha may be necessary in 2 to 3 year-old stands on very acid soils.

Grazing/cutting

Moderately heavy grazing is necessary to maintain pinto peanut in a pasture, and taller-growing grasses should not be allowed to dominate the legume, which is extremely tolerant of low and regular defoliation. As a general guide for the growing season, it should be rotationally grazed (1 week grazing, and 3 - 4 weeks rest.)

Seed production

Special equipment is required for harvesting the seed that is produced in the top 5 - 10cm of soil. Over 1 tonne/ha of seed-in-pod is produced in a good year.

Ability to spread

The creeping stems can spread up to 2 m/year in the wet tropics and about 1 m/yr in the subtropics.

Weed potential

It is difficult to eradicate once established in a particular area.

Major pests

While white-fringed weevils and slugs eat the leaves, damage is normally minimal. Leaves can also be infested by spider mites which do not cause major damage under field conditions. Rats and mice may be attracted to the underground seed.

Major diseases

Leaf and stem diseases are rarely a problem, although some nematodes (not root knot nematode) can affect productivity.

Herbicide susceptibility

Susceptible to metsulfuron-methyl (e.g. Brushoff®, Ally®) and glufosinate (e.g. Basta®).

Animal production

Feeding value

Similar to that of lucerne, with 13 to 25% crude protein and 60 to 70% dry matter digestibility, depending on age of forage.

Palatability

Pinto peanut is well eaten by all classes of animals, including chickens, ducks and pigs. It is selectively grazed by cattle, particularly if animals have been exposed to the legume previously.

Production potential

Annual liveweight gains of up to 200 kg/head and over 900 kg/ha, as well as significant increases in milk production have been recorded.

Livestock disorders/toxicity

None recorded.

Cultivars

Cultivar	Seed source/Information
Amarillo [Ⓟ]	Australian Herbage Plant Cultivars Heritage Seeds
Bolton	Southedge Seeds

[Ⓟ] Denotes that this variety is protected by Plant Breeder's Rights Australia

Further information

Tropical Forages database (SoFT) - Pinto peanut
NSW Department of Primary Industries - Forage peanut Agnote DPI-309
Tropical Grasslands Society of Australia

Author and date

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