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Arachis glabrata Benth.

Leguminosae

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Synonym

- *Arachis prostrata* Benth. (1841)

Common names

Rhizoma peanut (USA), creeping forage peanut (Australia).

Origin and geographic distribution

Native to Brazil, Argentina and Paraguay between 13° S and 28° S. Introduced to Australia, the United States, India, Thailand, Malaysia and Indonesia.

Description

Herbaceous perennial with erect to decumbent unbranched stems with a deep, woody taproot and a dense mat of rhizomes. Leaves glabrous to sparsely pubescent, tetrafoliolate; leaflets ranging from linear-lanceolate to oblanceolate, obovate or cuneate up to 4 cm x 2 cm; apex acute to mucronate, base mostly obtuse; petiole grooved, up to 7.5 cm long, 1-2 mm diameter with pulvinus 10-15 mm above axil; stipules linear-lanceolate, falcate, up to 3 cm long, adnate to the petiole and membranous below the pulvinus; petiolule about 1 mm and rachis 10-15 mm long. Flowers sessile, axillary; hypanthium filiform, tubular, up to 10 cm long, pilose, containing the ovary at its base; standard more or less orbicular, 15-25 mm wide, yellow, soft orange to brilliant orange without red veins on back. Fruit set geocarpic, but usually scarce; fruit ovoid ca. 10 mm x 5-6 mm. Seeds ovoid, whitish.

Uses

A. glabrata is a high quality forage legume for intensively grazed pastures on infertile, acid soils. It has potential for soil conservation and as an ornamental. It is used for hay production in Florida, and is showing promise under coconuts in Indonesia

Season of growth

Best growth takes place in the warm rainy season but it can survive dry seasons of 4 months or more. During very dry conditions aerial growth may die off. Plants regrow vigorously with the onset of warm and humid weather.

Frost tolerance and regrowth after frosting

Frosts, may cause top growth to die off, but plants recover from rhizomes.

Altitude range

A. glabrata is essentially a lowland species growing best at latitudes 30°N and S to near the equator.

Rainfall requirements

It is best suited to areas receiving 1000-2000 mm per year, but it will persist in areas receiving 750 mm.

Drought tolerance

Slight.

Soil requirements

Grows successfully on well-drained soils ranging from sands to clays. Prefers acid soils, but tolerates neutral to slightly alkaline soils. Develops excellent ground cover on poor soils.

Rhizobium relationships

Requires specific inoculant, which can be overcome by vegetative planting.

Ability to spread naturally

Rhizomatous habit ensures easy spread; dense swards extend at the margins at up to 2 m per year in the absence of competition, or 5-30 cm per year with grass competition.

Land preparation before establishment

A clean seed-bed is preferred, to minimize competition for the developing plants.

Sowing methods

Due to lack of seed set it is usually planted vegetatively.

Seed production

Despite often dense flowering, few seeds are formed.

Nutrient requirements

Grows well in soils low in P, but some P fertilizer is advisable for soils extremely low in P. Liming is rarely necessary.

Compatibility with grasses

Combines well with aggressive creeping grasses such as *Brachiaria decumbens*, *Paspalum notatum*, *Axonopus affinis*, *Digitaria eriantha* and *Cynodon dactylon*.

Establishment

A. glabrata is usually propagated from rhizomes. Best results are obtained by planting 30 cm² pieces of rhizome mat about 1.8 m apart. Alternatively, the rhizomes can be loosened, broadcast over the surface at the rate of about 3.5 m³ of rhizomes/ha and disked in to a depth of 3 cm in clay soils to 6.5 cm in coarse sands. Shoots will develop 2-3 weeks after planting; seedlings are usually quite large before they form rhizomes. Equipment for harvesting and planting rhizomes has been developed in Florida. Weeds should be controlled during establishment by manual weeding or through use of pre- and post-emergence herbicides such as trifluralin or vernolate, post-emergence applications of alachlor and dinoseb, and routine applications of bentazon or 2,4-DB for broadleaf weed control, and sethoxydim and fluazifopbutyl for grass control, as required. Mowing and early grazing reduces shading from taller weeds and promotes spread of *A. glabrata*.

Grazing management

Very tolerant to heavy grazing (Cook 1992).

Feeding value

Depends on age of the material. Material cut twice a year in the USA had in vitro organic matter digestibility (IVOMD) values ranging from 45-68%, and N concentrations from 1.6-2.9%. Up to 74% IVOMD and 3.5% N have been measured from stands cut every two weeks. In Australia, IVOMD of 6-week-old regrowth varied from 70-77% with N varying from 2.5-3.5%. P levels of 0.15% in *A. glabrata* growing in extremely infertile soils to 0.52% in well-fertilized soils.

Toxicity

None recorded.

Cultivars

Four cultivars of *A. glabrata* have been released in Florida: 'Arb', 'Arblick', 'Florigraze' and 'Arbrook'. 'Arb' and 'Arblick' were selected initially, based on productivity and spreading ability respectively; 'Florigraze' was selected because it combined both characteristics, and 'Arbrook', because it is more drought-tolerant than 'Florigraze' but is of similar productivity. In Australia cv. Prine has proved even more tolerant of heavy grazing, aggressive creeping grasses and lower fertility soils than cv. Amarillo of *Arachis pintoi*.

Pests and diseases

A. glabrata is rarely troubled by insects or disease and it is immune to common groundnut leaf-spots caused by *Cercospora arachidicola* and *Cercosporidium personatum*, and generally also immune to groundnut rust (*Puccinia arachidis*). Although susceptible to other leaf-spots caused by *Phyllosticta* and *Stemphylium*, and to white mould (*Sclerotium rolfsii*), these diseases have not caused serious long-term damage. It has been reported to be tolerant to root-knot nematodes (*Meloidogyne* spp).

Main attributes

A. glabrata is a highly persistent pasture legume for (sub)humid climates with poor acid soils tolerant to heavy grazing.

Performance

Moderate to heavy grazing pressures are necessary for best performance. It grows best when mean monthly temperatures are above about 20°C. Dry matter yields of up to 16 t/ha have been measured

in Florida and up to 12 t/ha in Australia. In rubber and coconut plantations in Malaysia and Indonesia dry matter yields of 5 t/ha have been obtained.

Links

- [NSW Agriculture, Australia: Forage Arachis](#)
- [Fort Valley State University: description, cultural practices and research on *A. glabrata Benth*](#)
- [Germplasm Resources Information Network USA: short description and reference list](#)
- ["Perennial Peanut, an alternative forage of growing importance" - Institute of Food and Agriculture Sciences, University of Florida: description, utilization and economics](#)
- [SWFREC - Guide to using perennial peanut as a cover crop in citrus: climatic condition, soil, cultural practices and management](#)
- [American Dairy Science Association: abstract on " Intake and nutritive value of florigraze rhizoma peanut silage for lactating dairy cows"](#)

References

Cook, B.G. (1992)