



# *Arachis pintoi* Krap. & Greg.

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Leguminosae

Author: [Len 't Mannelje](#)[Photo](#)

## **Common names**

- Pinto peanut (En)
- Maní forrajero (Sp.)
- Thua lisong tao (Thailand).

## **Description (Cook, 1992)**

Stoloniferous, perennial herb developing a strong taproot on the older crowns and forming a dense mat of stolons and rhizomes up to 20 cm deep. Stems initially prostrate, becoming ascendant to 20 cm in height. Leaves tetrafoliolate, margins entire, ciliate; distal leaflets obovate and proximal leaflets oblong-obovate, obtuse at the apex and slightly cordate at the base; leaflets up to 4.5 cm x 3.5 cm; the upper surface of leaflets glabrous and darker green than the pubescent lower surface. Individual flowers on short axillary racemes, standard 12-17 mm, yellow. The terminal pod on the peg usually contains 1 seed, sometimes 2, while pods formed along the peg contain only 1. Pod moderately reticulated, 10-14 mm x 6-8 mm. Seed light-brown, 8-11 mm x 4-6 mm, weighing 0.11-0.20 g.

## **Origin and Distribution**

*A. pintoi* originates from the valleys of the Jequitinhonha, São Francisco and Tocantins rivers in central Brazil. It has been introduced to Australia, the United States, and to many countries in South-East Asia, Central and South America and the Pacific.

## **Uses**

Forage legume in intensively managed grass/legume pastures and tree plantations, ground cover in tree plantations and ornamental (Cook 1992).

## **Season of growth**

Best growth takes place in the warm rainy season but it can survive dry seasons of 4 months or more.

## **Frost tolerance and regrowth after frosting**

Leaves and stolons are killed by frost, but new growth occurs again in spring from rhizomes

## **Altitude range**

*A. pintoi* is essentially a (sub) tropical lowland species, but it also grows extremely well in the coffee zone of Colombia (ca. 1400 m asl).

## **Rainfall requirements**

Best suited to rainfall above 1100 mm per annum, but it can survive dry seasons of at least 4 months.

## **Flooding tolerance**

Tolerant to periodical flooding.

## **Shade tolerance**

High tolerance to shade, where it often appears more vigorous than in full sunlight.

## **Drought tolerance**

It shows some drought resistance.

### **Soil requirements**

Grows best in well-drained sandy to clay soils, with low to neutral pH and low to high fertility. Fails to persist on seasonally waterlogged, poorly structured clays. It tolerates high levels of Al and Mn, but has low tolerance of salinity.

### **Rhizobium relationships**

Inoculation often necessary with a highly specific strain of *Bradyrhizobium* (strains QA1091, CIAT3101 being the most effective) immediately before planting, but not necessary with vegetative propagation.

### **Ability to spread naturally**

Stoloniferous habit ensures easy spread.

### **Land preparation before establishment**

A clean seed-bed is preferred.

### **Sowing methods**

Fresh seed has a high level of dormancy which may be reduced by drying at 35-40°C for 10 days. Seed at 10-15 kg seed in pod/ha should be sown 2-6 cm deep, followed by rolling. Seedlings develop quickly following epigeal germination, and with good growing conditions and several plants per m<sup>2</sup>, complete ground cover can be achieved by a network of stolons in about six months. Seed remains viable in the ground for more than one season.

In moist climates vegetative propagation succeeds well.

### **Seed production**

Flowering may commence three to four weeks after emergence and continues through the growing season. Ovary on a gynophore or peg, which elongates to up to 27 cm after pollination and pushes the ovary up to 7 cm depth into the soil. Seed production ranging between 200 and 7000 kg/ha has been reported from Costa Rica and Colombia.

### **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*, *B. dictyoneura*, *Paspalum notatum*, *Axonopus affinis*, *Digitaria eriantha* and *Cynodon dactylon*, but also forms stable mixtures with bunch grasses such as *Panicum maximum* where the legume colonizes well the inter-bunch spaces.

### **Grazing management**

Very tolerant to heavy grazing.

### **Feeding value**

Depends on age of the material. In vitro digestibility varies from 60-76%, N concentrations from 2.5-3.0% and P concentrations from 0.18-0.37%. Readily eaten by cattle at all stages of growth.

### **Toxicity**

None recorded.

### **Cultivars**

Many accessions are available, harbouring significant genetic variability, allowing considerable potential for cultivar development. Commercial cultivars of *A. pintoii* have been released in Australia (Amarillo), Costa Rica (Mani Mejorador, Porvenir), Brazil, CC Colombia (Mani Forrajero Perenne), Honduras (Pico Bonito).

### **Pests and diseases**

Diseases cause no long-term or serious damage, but rats and mice are attracted to the

nuts and can be a problem. Cv 'Amarillo' is resistant to the major groundnut diseases, rust (*Puccinia arachidis*) and leaf-spot (*Mycosphaerella* spp.). Other fungi (*Phomopsis* sp., *Cylindrocladium* sp. and *Colletotrichum gloeosporioides*) have been isolated from leaf-spots, the latter being associated with black stem lesions in Colombia. Also Rhizoctonia Foliar Blight has been observed. 'Amarillo' has moderate to high resistance to the various root-knot nematodes (*Meloidogyne* spp.) but is susceptible to the root-lesion nematode (*Pratylenchus brachyurus*). Leaves of some plants have an apparently non-pathogenic variegation.

### **Main attributes**

*A. pinto* is a highly persistent palatable pasture legume with a high feeding value for (sub)humid (sub)tropical climates tolerant to heavy grazing and shade.

### **Performance**

Moderate to heavy grazing pressures are necessary for best performance. In Colombia, annual DM production ranging from 5 t/ha growing with *Brachiaria dictyoneura*, which produced 20 t/ha, to 10 t/ha when grown with *B. ruziziensis*, which produced 11 t/ha. It has yielded 5 t/ha of DM in pure stands under 30% shade in Indonesia and 3 t/ha in full sunlight in Malaysia. In Costa Rica liveweight gains of cattle grazing *A. pinto* in a mixed pasture with *Brachiaria brizantha* of nearly 1000 kg/ha/year were recorded.

### **Links**

- [University of Hawaii](#): very detailed information on the cultural practices and uses of *A. pinto*.
- [Early adoption of Arachis pinto in the humid tropics](#)
- [Vide Database](#)

### **References**

[Argel, P.J. and Ramírez P. A. \(1996\)](#); [Cook, B.G. \(1992\)](#)

[Comments from Prof. Dr Rainer Schultze-Kraft are acknowledged]

## *Arachis pinto*

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*Arachis pinto*

Photo by S. G. Reynolds



Signal grass (*Brachiaria decumbens*) and *Arachis pinto* cv. Amarillo

Photo by Max Shelton



*Paspalum notatum* with *Arachis pintoii* in North Sulawesi

Photo by Max Shelton



Arachis collection (mostly *Arachis pintoii*). EMBRAPA, Cerrados, Planaltina, Brazil.

Photo by Dr. Esteban A. Pizarro



*Arachis pintoi* plot at Bajo RNR Research Center, Wangdue, Bhutan.  
Photo by S. Reynolds



*Arachis pintoi*, Malaysia.  
Photo by Steve Reynolds



*Arachis pintoii*, Malaysia.  
Photo by Steve Reynolds