

Tropical Forages

Paspalum guenoarum

Scientific name



Paspalum guenoarum Arechav.

Subordinate taxa:

Paspalum guenoarum Arechav. var. *guenoarum*

Paspalum guenoarum Arechav. var. *rojasii* (Hack.)
Parodi

Synonyms

var. **guenoarum**: *Paspalum plicatulum* var. *robustum*
Hack.

var. **rojasii**: Basionym: *Paspalum rojasii* Hack.

Family/tribe

Family: *Poaceae* (alt. *Gramineae*) subfamily:
Panicoideae tribe: *Paspaleae* subtribe:
Paspalinae group: *Plicatula*.

Morphological description

A leafy, upright (decumbent to ascending when young), perennial tussock, with short basal rhizomes; foliage to 0.6 or 1.0 m tall (depending on provenance), fertile culms to 1.5 or 2 m. Leaf blades to 60 cm long and 3 cm wide, mostly brittle, even when mature; varying in colour from shiny green (similar to *P. atratum*) to grey-green

(glaucouscent) on the upper surface, and usually grey-green on the underside; largely glabrous except for a few long hairs at the base of the leaf blade in some provenances; leaf margins scabrous (minutely saw-toothed); ligule yellowish, membranous. Large green forms can be readily distinguished from *P. atratum* by virtue of a grey-green or glaucouscent underside to the leaf. Seed borne in a simple panicle comprising 3–10 (–15) racemes, mostly 6–15 cm long, with lower racemes up to 20 cm long. Spikelets about 3–3.5 mm long and 2–2.5 mm wide. About 270,000–380,000 seeds per kg.

Common names

English: wintergreen paspalum

Latin America: capim-guenoaro, capim Ramírez (Brazil); pasto australiano, pasto rojo, pasto Ramírez (var. *guenoarum*), pasto Rojas (var. *rojasii*), pasto Chané (Spanish)

Distribution

var. *guenoarum*

Native:

South America: Argentina (Misiones), Brazil (Rio Grande do Sul, Santa Catarina), Paraguay, Uruguay

var. *rojasii*

Native:

South America: Argentina (n.), Brazil (s.), Paraguay

Uses/applications

Forage

Perennial forage for grazing or cut-and-carry. Has been successfully conserved as hay and silage.

Ecology



Soft palatable foliage (CIAT 26985)



A leafy, upright perennial tussock with short basal rhizomes, image Colombia



Nursery plot in flower



Seed borne in a simple panicle comprising mostly 3–10 racemes



Comparison of Plicatula group seedheads: *P. guenoarum* (L); *P. leptum* (R) 20cm rule



Seed units

Soil requirements

Often occurs on moist, sometimes poorly drained, fertile sandy soils. Appears adapted to most soils, including clay soils and low pH lateritic soils, provided there is good moisture.

Moisture

Rainfall at collection sites ranges from 1,200 to 1,600 mm/yr. In cultivation, it grows well between about 1,200 and 2,000 mm annual rainfall, and even up to 4,000 mm. Moderately tolerant of waterlogging. Under very high rainfall conditions, susceptible types may be affected by leafspot. Moderate drought tolerance.

Temperature

Occurs from about 15 to 32° S, and from near sea level to 1,750 m asl. This represents an unusually narrow range of annual average temperatures of 19–21 °C. However, 'Bela Vista' has performed well in areas with average annual temperature as high as 27 °C. Some types have good frost tolerance, sustaining no damage at temperatures of -4 °C.

Light

Poor to moderate shade tolerance, like other members of the *Plicatula* group, [Paspalum atratum](#) and [P. leptum](#). Adaptation to conditions of 50% light interception has been reported.

Reproductive development

Commencement of flowering varies with provenance, from early February to late March in the southern hemisphere subtropics, e.g. northeast Argentina.

Defoliation

Tolerant of low grazing and regular cutting, although best results obtained from more lenient management. Very easy to cut with scythe or mower. Recommended to cut or graze when the stand is about 60 cm high.

Fire

Original stand depleted by fire, but stand recovers from seedlings.

Agronomy

Guidelines for establishment and management of sown forages.

Establishment

In controlled environment, germination and speed of germination are highest at 20–35 °C. Other factors are probably the same as for the closely related [P. atratum](#) ("Reports of dormancy levels in fresh seed vary from low to quite high, but, even with dormant seed, germination reaches acceptable levels after 3–4 months. Germination of fresh seed can be improved from about 20% to nearly 100% by removal of the lemma and palea. Seed has a very limited 'shelf life' under ambient conditions, and may remain viable for less than a year. Seed storage for several years should be at low temperature and low relative humidity.") Seed is normally sown at up to 15 kg/ha in pure swards or 10 kg/ha with other species, either broadcast or in rows 0.5–1 m apart. Establishes rapidly from seed, or from rooted tillers.

Fertilizer

Survives at low fertility but responds to nitrogen applications of the order of 150–200 kg N/ha/yr.

Compatibility (with other species)

Good growth form to grow with legumes. Lower growing types are not aggressive, but taller types may be more competitive.

Companion species

Grasses: [Paspalum atratum](#), [Setaria sphacelata](#).

Legumes: [Arachis pintoi](#), [Centrosema molle](#), [Desmodium intortum](#), [Listia bainesii](#), [Lotus uliginosus](#), [Neonotonia wightii](#), [Trifolium repens](#), [Vigna parkeri](#).

Pests and diseases

Subject to *Pythium* blight in some situations. A leaf spot, possibly caused by *Helminthosporium* sp., can be a problem on older leaves under high rainfall conditions. *Bipolaris micropus*, *Curvularia geniculata*, *Epicoccum sorghinum*, and *Fusarium incarnatum* have been isolated from severe leaf-spotting in Rio Grande do Sul, Brazil. Resistant to or little affected by nematodes (*Meloidogyne javanica*, *M. arenaria*, *M. hapla* and *M. incognita*). Resistant to attack by spittle bugs/cigarrinha/salivazo [*Deois flavopicta* and *Zulia entreriana* Hemiptera: Cercopidae], but susceptible to burrower bugs (*Scaptocoris* sp. Hemiptera: Cydnidae).

Ability to spread

Seedlings develop close to parent stand.

Weed potential

Little indication of weediness.

Feeding value

Nutritive value

High leaf to stem ratio. Nutritive value varies with age of material and soil nutrient status (including fertilizer use). As with all C4 grasses, CP levels, leaf proportion and digestibility all decrease, and DM content increases, with increasing maturity. Reported CP values are 8–13%, often lower than for other grasses tested, and IVDMD 53–67%.

Palatability/acceptability

A very leafy grass that is well eaten by cattle and horses.

Toxicity

No record of toxicity.

Production potential

Dry matter

Yield ranges reported are 4–25 (mostly 10–20) t DM/ha/yr, depending on genotype, N fertilization and moisture availability.

Animal production

Has produced up to 370 kg live weight/ha over a 222 day period.

Genetics/breeding

Aposporous apomict; $2n = 4x = 40$, possibly also $2n = 20$.

Seed production

Like *P. atratum*, flowering may be disrupted if the stand is cut or grazed low within 2 months of commencement of flowering, destroying the elongating apical meristem. Seed tends to be shed as soon as it matures (shatters). Yields of seed for various genotypes range from very low to about 500 kg/ha.

Herbicide effects

Very susceptible to atrazine.

Strengths

- Leafy and palatable forage.
- Tolerant of poor drainage and flooding.
- No serious pests or diseases.
- Tolerant of low temperatures.

Limitations

- Leaf diseases have been observed in high rainfall areas.
- Low to moderate DM yields.

Internet links

<https://apsjournals.apsnet.org/doi/full/10.1094/PDIS-12-16-1746-PDN>

<http://www.scielo.br/pdf/aabc/v89n3/0001-3765-aabc-201720160662.pdf>

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Cultivars

'Bela Vista' (BRA 003824, CIAT 26985, ATF 1053) Released in Brazil and SE Asia. Collected from Mato Grosso do Sul, Brazil. Similar to *Paspalum atratum* but productive, softer leaves, very palatable.

'Siempre verde' (BRA 003824 – the same accession as 'Bela Vista') Released in Rondônia state, Brazil. Tall to 2 m. Higher nitrogen and phosphorus concentrations during the rainy season than other grasses tested.

'Chané FCA' Released in Corrientes Province Argentina (2002). Collected from Santa Cruz, Bolivia (16° S, 480 m asl, 1,200 mm/yr). Late flowering perennial. Produces up to 21 t DM/ha of good quality forage from spring to autumn. No serious diseases and resistant to spittle bug and spider mite.

'Azulão' (No. 586) Released in Rio Grande do Sul, Brazil (1980s). Collected in Paraguay. 1.5–2.0 m tall, dark green to blue leaves, well accepted by animals, good frost resistance, late flowering. Similar DM yield to 'Baio', but higher leaf proportion and IVOMD (56.2%).

'Baio' Released in Rio Grande do Sul, Brazil. Origin unknown. Similar DM yield to 'Azulão', but lower leaf proportion and IVOMD (53.3%).

'Duro' Released in Brazil (date and origin unknown). No data available on its attributes.

'Ramírez' Released in Argentina (1969). Origin unknown. Represents var. *guenoarum*.

'Rojas' Released in Paraguay (1953). Origin unknown. Easily established from seed; grows on a wide range of soils. Palatable, drought tolerant, tolerates trampling by animals, requires high level of grazing management. Represents var. *rojasii*.

'Veludoso' Released in Brazil (date and origin unknown). Hairy leaves, medium to high palatability.

'Wintergreen' Released in Zimbabwe (1963). Origin unknown. No longer used commercially.

'No. 844' Released in Brazil and Paraguay (1976). Origin unknown. Sage green leaves, hairy leaves, early flowering, large spikelets (3.5 mm).

Promising accessions

CPI 39962 Origin São Paulo, Brazil (21°S, 460 m asl, rainfall 1,200 mm). In evaluation in the Northern Territory, Australia, ~80 cm tall, good DM production (15 t/ha) and seed yields (175 kg/ha), some spread at Mt Bunday, NT.

CPI 27682, CPI 39964, CPI 39966 Selected in Australia (Queensland); negligible frost damage at -4 °C.

BRA 010707 (CIAT 26668, CPAC 3135). Well-adapted to poor drainage and occasional flooding conditions on an infertile plinthaquox soil in the cerrado in Mato Grosso do Sul (Brazil).

FCAP-43 Brazil. Good DM production in several Amazonian states.

BRA 014851 Brazil. High DM production and quality in the Amazonian state of Amapá.

