

Tropical Forages

Axonopus compressus

Scientific name

Axonopus compressus (Sw.) P. Beauv.



Subordinate taxa:

Axonopus compressus (Sw.) P. Beauv. var. *jesuitica*
A.A. Araújo

Axonopus compressus var. *compressus*

Synonyms

Basionym: *Milium compressum* Sw.; *Axonopus compressus* var. *australis* G. A. Black

Family/tribe

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

Morphological description

Shallow-rooted stoloniferous and shortly rhizomatous perennial, with glabrous, oval-section ($\pm 3.5 \times 2.5$ mm) stolon internodes and bearded nodes; forms a dense mat with foliage 15–20 cm tall, and flowering culms mostly 30–45 (–60) cm; can be mowed to a turf. Leaf sheath compressed, keeled, glabrous or \pm hirsute; ligule a fringed membrane 0.5 mm long; blades shiny, flat or folded, 4–18 mm wide, and 2–16 cm long, glabrous or hairy on the upper surface, margins ciliate, apex broadly acute or obtuse. Inflorescence a panicle comprising 2 or 3 (rarely 5) slender, spikelike racemes, paired or sub-digitately arranged on a long slender peduncle; racemes (2–) 3–7 (–10) cm long; spikelets, 2–3.5 mm long, 1–1.25 mm broad, inserted alternately either side of a flattened rachis. 2.6–3 million seeds per kg.

Similar species

Differs from *A. fissifolius* in being more stoloniferous and in having stouter culms and stolons, broader leaves, and longer, more acute spikelets.

Common names

Asia: □□□ di tan cao (China); rumput pahit, papahitan, jukut pahit (Indonesia); tsurume-hishiba (Japan); cow grass, rumput parit (Malaysia); carabao grass, kulape (Philippines); ya baimaln, ya-malaysia (Thailand)

English: American carpet grass, blanket grass, broadleaf carpet grass, carpet grass, Dorrington grass, flat jointgrass, lawn grass, Louisiana grass, tropical carpet grass; savannah grass (West Indies); wide-leaved carpet grass

Europe: buffalo américain, herbe de la Louisiane, herbe gazon (French); Teppichgras (German); assonopo compresso (Italian)

Latin America: capim-bananal, pasto-chato (Brazil); alfombra, grama ancha, grama bahiana, grama brasileira, grama trenza, zacate amargo (Spanish); nudillo (Peru); barbacoa (Venezuela); bes-chaitgras (Suriname); cañamazo dulce (Cuba)

Pacific: kambutu ni vavalangi (Fiji)

Distribution

Native:

Northern America: Mexico, USA (Alabama, Arkansas (c.), Florida (s.), Georgia (w.-c.), Louisiana (s.), Mississippi (n.e.), South Carolina (s.), Texas (e.))

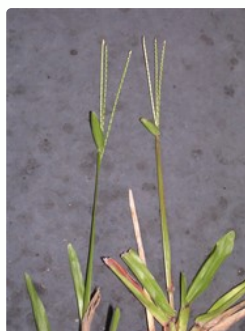
Caribbean: Antigua and Barbuda, Bahamas, Barbados, Cuba, Dominica, Grenada, Guadeloupe, Hispaniola, Jamaica, Martinique, Puerto Rico, St. Lucia, St. Vincent and Grenadines



Stoloniferous and shortly rhizomatous, mat-forming perennial,



Compressed, keeled leaf sheath



Inflorescence a panicle mostly comprising 2 or 3 spikelike racemes



Seed units



With *Grona triflora*



With *Desmodium incanum*, Vanuatu

Central America: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama

South America: Argentina, Bolivia, Brazil, Colombia, Ecuador, French Guiana, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela

Cultivated/naturalized:

Widely naturalized and used as a turf and forage in the humid tropics and subtropics, especially west tropical Africa, South Africa, India, the Philippines, Indonesia, Malaysia, Australia and the Pacific Islands

Uses/applications

Forage

Used as a naturalized component of permanent pasture; mostly grazed because generally too low growing to be useful in cut-and-carry systems or for fodder conservation.

Environment

A useful ground cover and turf in moist, low fertility soils, particularly in shaded situations. Provides excellent erosion control due to and facilitates reduced herbicide use when used as soil cover in tree plantations.

Ecology

Soil requirements

Adapted to well to moderately drained sandy or sandy-loam soils, but also to light clays and peats, flourishing in soils too infertile for *Paspalum dilatatum*. Best in acid soils with pH (5.0–) 5.5–6 (–7), iron chlorosis above pH 7. Low tolerance of salinity (<4 dS/m).

Moisture

Mostly found in areas with an annual rainfall of (800–) 1,000–4,000 (–5,000) mm. It is not very drought-tolerant, even less so than *A. fissifolius*. While preferring moist soils, it does not withstand prolonged flooding or permanently swampy conditions.

Temperature

Occurs from sea level to 3,000 m asl, and from near the equator to 27 (–32)° latitude, representing a significant range in average annual temperatures from (13.5–) 19 to 27 °C. Although found in the subtropics and upland tropics, it appears to be best adapted to the lowland tropics. Tops are burnt off by frost, but plants recover with the onset of warmer, moist conditions; less frost tolerant than *A. fissifolius*.

Light

It grows well in the shade, often forming a thick mat under dense tree canopies. It is considered a valuable ground cover under oil palm and rubber plantations.

Reproductive development

A. compressus flowers over a wide range of daylengths, flowering through much of the growing season in most environments.

Defoliation

It thrives under heavy grazing. Frequent grazing also helps to maintain it in a vegetative state.

Fire

Although mostly growing in areas where fire is not a problem, it recovers quickly from fire.

Agronomy

Guidelines for establishment and management of sown forages.

Establishment

Since commercial seed is often not available, [A. compressus](#) is usually propagated vegetatively. When seed is available, it is broadcast onto, or shallowly sown into, a well-prepared seedbed to give the best chance of establishment. Subsequent rolling helps maintain soil moisture and ensures close contact between soil and seed. Choice of sowing rate depends on quality of seedbed and the rate of ground cover required. With a good seedbed, where rate of cover is not an issue, 2–3 kg/ha of seed is adequate, while with a less well prepared seedbed or where rapid cover is important, 6–12 kg/ha may be necessary.

Fertilizer

Relatively low amounts of nitrogen can be fixed through non-symbiotic associations in the rhizosphere of [A. compressus](#). Even so, low rates of nitrogen can help to extend the otherwise fairly short growing season, and to maintain the sward in a vegetative state. It does not appear to be very responsive to phosphorus, growing well in low P soils.

Compatibility (with other species)

As soil nitrogen levels decline and under regular defoliation, *A. compressus* can successfully invade pastures based on more fertility demanding species such as *Paspalum dilatatum*, *Cynodon dactylon* and *Setaria sphacelata*, particularly if shade levels increase.

Companion species

Grasses: [Axonopus fissifolius](#), *Chrysopogon aciculatus*.

Legumes: [Arachis pintoii](#), *Grona heterophylla*, *G. triflora*, [Lotus uliginosus](#), *Trifolium repens*, [T. semipilosum](#), [Vigna parkeri](#).

Pests and diseases

It is not subject to any major diseases or insect pests, although it is attacked by grass webworm (*Herpetogramma licarsisalis*; Lepidoptera: Pyralidae), usually during rainy weather, and is an alternative host for *Rhizoctonia solani* and rice tungro spherical virus.

Ability to spread

It spreads more quickly vegetatively under favourable conditions than [A. fissifolius](#), but more slowly by seed, since it is a less prolific seed producer.

Weed potential

It can become a troublesome weed in the wet tropics.

Feeding value

Nutritive value

Forage quality is generally poor, but higher than for [A. fissifolius](#). CP level in 3-week regrowth following 100 kg/ha N has been measured at 22.3%, declining to 17.8% at 6 weeks.

Palatability/acceptability

It is slightly more palatable than [A. fissifolius](#), but less so than [Paspalum dilatatum](#).

Toxicity

No record of toxicity.

Feedipedia link

<https://www.feedipedia.org/node/498>

Production potential

Dry matter

Dry matter yields of 1–5 (–10) t/ha have been measured.

Animal production

Average daily liveweight gain of about 200 g/hd/day has been measured in steers grazing [A. compressus](#) over an extended period.

Genetics/breeding

$2n = 40$ (rarely 50 or 60). A cross-pollinating, heterogamous species, forming mostly sterile hybrids with other species in the complex.

Seed production

Seed can be harvested with a stripper type harvester.

Herbicide effects

No data, but probably similar to [A. fissifolius](#): "Susceptible to DSMA, bentazon, bromoxynil, 2,2-DPA and metsulfuron methyl. Tolerant of diclofop methyl."

Strengths

- Grows on poor soil.
- Good ground cover.
- Tolerates heavy grazing.
- Very shade tolerant.
- Tolerates poor drainage.

Limitations

- Poor drought tolerance.

- Low nutritive value.
- Low dry-matter yield.
- Short growing season.

Internet links

http://www.hear.org/pier/species/axonopus_compressus.htm

Selected references

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Cultivars

'Huanan' Released in China (2001) Shade tolerant; ecotype collected in Hainan.

Promising accessions

None reported.

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