Tripsacum andersonii

Scientific name

*Tripsacum andersonii* R. Gray

This species has commonly been referred to as *Tripsacum laxum* Nash in most agricultural literature. This name is not accepted by GRIN, but *T. andersonii* is not recognised by the USDA. Information from both names is used here.

Synonyms

*Tripsacum fasciculatum* Trin. ex Aschers.

Family/tribe


Common names

Guatemala grass, Guatemalan gamagrass; zacate prodigio (Latin America); rumput jagung, rumput jelai (Malaysia); ya-kuatemala (Thailand).

Morphological description

Robust perennial grass, forming large mats up to 5 m across with tangled stolons and rhizomes; shallow-rooted. Flowering culms up to 3 m tall, up to 5 cm diameter at the base. Leaf blades up to 120 cm long and remarkably (up to 10 cm) wide, shortly tomentose on the upper surface, under surface and upper leaf sheaths are glabrous. Terminal and axillary inflorescences can have 5–8 slender racemes.

Distribution

Native to:
Central and northern South America.

Now widely distributed throughout the tropics as a fodder plant.

Uses/applications

Perennial fodder bank for cut-and-carry mainly, especially useful as green feed during dry conditions. Also used for low to moderate quality silage. Used as a stout hedgerow (living fence) or for contour strips with or without companion legume on hill land, especially that growing cassava (*Manihot esculenta*). Planted as a break to reduce insect pests in run-down tea plantation land in Sri Lanka, and to combat bacterial wilt of potatoes in Burundi. Used for soil erosion control, mulching and as a soil conditioner in drained swamps in Malaysia.

Ecology

Soil requirements

Best in fertile, well-drained soils but can tolerate low pH and some Al. Can grow on ultisols, oxisols, peats, acid sulphate soils and very acid coastal marine sands. Grows well on podsolic soils in Surinam.

Moisture

Requires reliable rain or soil moisture but can remain green over a short dry season; reported to tolerate drought better than *Pennisetum purpureum*. Tolerant of waterlogging and flooding.

Temperature

Generally grown in the humid tropical lowlands but at moderate altitudes (to 1,800 m asl) in the tropics, e.g. in east and central Africa, but could not grow in wet peat lands at high altitude in Burundi; reported temperature range: 18–30°C.

Light

Good growth under 50% shade.

Reproductive development

Seed is sterile.

Defoliation

Will not tolerate grazing or frequent cutting. Best cut at 30-day intervals during the wet season and 42–45-day intervals in the dry season.

Fire

Unlikely to be burned but will recover from the coarse basal stems and rhizomes.

Agronomy
**Agronomy**

Guidelines for the establishment and management of sown pastures.

**Establishment**

Always planted from stem cuttings with 3 nodes, rooted culms or rhizomes (800–3,000 kg/ha) at spacings of 0.5 m x 1 m. Can be cut 4–6 months after planting.

**Fertiliser**

Heavy fertiliser applications needed for optimum growth as herbage removal quickly extracts soil nutrients.

**Compatibility (with other species)**

May be grown with twining legumes (that rarely persist under the grass cutting regime) or with companion rows of shrub/tree legumes.

**Companion species**

Legumes: *Desmodium intortum*, *Calliandra calothyrsus*, *Leucaena leucocephala*, *Sesbania sesban*.

**Pests and diseases**

No information available.

**Ability to spread**

The clump base of tangled stolons and rhizomes can expand to a few metres diameter if left uncut.

**Weed potential**

Local problem in unmanaged stands due to high labour requirement to dig out rhizomes.

**Feeding value**

**Nutritive value**

Much depends on the frequency of cutting because the heavy stems become very fibrous with maturity; generally low in protein relative to digestible carbohydrate if not managed and fertilised. With adequate N fertiliser, crude protein of leaf remains high even at late maturity. Said to be poorer quality than *Pennisetum purpureum*, but this would depend on relative stages of growth.

**Palatability/acceptability**

Good when leaf is young.

**Toxicity**

None reported.

**Production potential**

**Dry matter**

Annual DM yields of 18–22 t/ha, cutting at 10–25 cm above soil surface.

**Animal production**

Silage made from *Tripsacum* and sugar cane reduced milk yield by 19% compared to silage with maize (*Zea mays*). LWGs of 280 g/head/day over 10 months with rotational grazing in Surinam.

**Genetics/breeding**

2n = 54–72. *T. andersonii* is regarded as a hybrid between species of *Tripsacum* and *Zea*. DNA banding patterns suggest hybridisation between diploid *T. latifolium* with *T. laxum* to give triploid *T. latifolium*, which then hybridised with *Zea luxurians*. Highly uniform morphology suggests a single hybrid origin.

**Seed production**

Seed is sterile.

**Herbicide effects**

No information available.

**Strengths**

- Highly productive under good conditions.
- Leaf-only production under proper management.
- Makes strong hedgerow.
- Stays green during moderate dry season.
Limitations

- Poor quality feed under infrequent cutting.
- Planting from cuttings labour intensive.

Other comments

More persistent than *Pennisetum purpureum*, but may be less productive and of lower nutritional value.

Selected references


Internet links


Cultivars

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<tr>
<th>Cultivars</th>
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<tr>
<td>‘IJ 1213’</td>
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Promising accessions

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