Desmodium velutinum

Scientific name
Desmodium velutinum (Willd.) DC.

Synonyms
Desmodium lasiocarpum (P. Beauv.) DC.
Desmodium latifolium (Roxb. ex Ker Gawl.) DC.
Hedysarum lasiocarpum P. Beauv.
Hedysarum latifolium Roxb. ex Ker Gawl.
Hedysarum velutinum Willd.
Meibomia lasiocarpa (P. Beauv.) Kuntze

Family/tribe

Common names

Morphological description
Perennial, erect or semi-erect shrub or sub-shrub, up to 3 m high. Branches often dark red, yellow-brown when young, velutinous and short hooked-hairy. Leaves 1-foliolate, rarely 3-foliolate, ovate, ovate-lanceolate, triangular-ovate, or broadly ovate, 4-20 cm long and 2.5-13 cm wide, chartaceous to coriaceous, upper surface continuously appressed-pubescent, lower surface densely velutinous. Inflorescence often dense, terminal or axillary, racemose or paniculate, 4-20 cm long, with 2-5 flowers at each node; flowers purple to pink. Pods narrowly oblong, 1-2.5 cm long, 2-3 mm wide, with dense yellow straight hairs intermixed with short hooked hairs, 5-7-jointed. Seeds ovate, flat, 1.3-1.6 mm x 1.8-2.5 mm, yellow when ripe. Depending on the genotype, there are 320,000-830,000 seeds per kg.

Distribution
Native to:
Subtropical Asia (China, Taiwan, India, Indonesia, Laos, Malaysia, Myanmar, Sri Lanka, Thailand, Vietnam) and tropical Africa.

Uses/applications
No current use as research on this species has only recently begun. Its potential use is in cut-and-carry or permanently grazed systems.

Ecology

Soil requirements
Adapted to a wide range of soil pH, from very acid (pH 4.0) to alkaline. Adapted to low-fertility soils.

Moisture
D. velutinum prefers more humid climates of >1000->3000 mm rainfall/year. However, tolerates up to 5 months dry season.

Temperature
Grows at altitudes from 0-1,500 m asl, with average temperature above 20ºC.

Light
Has some shade tolerance as it grows in forest verges in New Guinea.

Reproductive development
Indeterminate flowering.

Defoliation
Little information available but it regrows well after infrequent severe defoliation in its native habitats.

Fire
No information available.

Agronomy
Guidelines for the establishment and management of sown pastures.

Establishment
Can be established by cuttings or through seed. For the latter, scarification is needed to break hardseededness. Distance between
rows 0.6-1.5 m, in the row 0.5-1 m, planted with 3-5 seeds per planting site.

**Fertiliser**

In Colombia, 15-20 kg/ha P is recommended for establishment.

**Compatibility (with other species)**

No information available.

**Companion species**

**Pests and diseases**

No information available.

**Ability to spread**

No information available.

**Weed potential**

A prolific seed producer.

**Feeding value**

**Nutritive value**

High nutritive quality of edible material, CP 16-27%, IVDMD 55-80%, depending on accession; very low amounts of tannins.

**Palatability/acceptability**

Moderately palatable to cattle; higher acceptability in the dry than in the wet season.

**Toxicity**

No information available.

**Production potential**

**Dry matter**

Up to 10 t/ha DM in 6 months under cutting on savanna soils in northern Nigeria.

**Animal production**

No information available.

**Genetics/breeding**

$2n = 22$.

**Seed production**

A prolific seed producer.

**Herbicide effects**

No information available.

**Strengths**

- Adapted to a wide range of soil pH.
- Grows on low-fertility soils.
- High nutritive quality.
- Moderately drought tolerant.

**Limitations**

- Still insufficiently researched.

**Other comments**

Persistence under cutting and grazing not clear.

**Selected references**


Inflorescences.

Hairy segmented pods and seeds.

Variation in ecotypes of *Desmodium velutinum*.

Erect shrub with simple leaves.

Flowers and pods.

Erect shrub with simple leaves.

**Cultivars**

<table>
<thead>
<tr>
<th>Cultivars</th>
<th>Country/date released</th>
<th>Details</th>
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<tbody>
<tr>
<td>None released to date.</td>
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**Promising accessions**

<table>
<thead>
<tr>
<th>Promising accessions</th>
<th>Country</th>
<th>Details</th>
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<tbody>
<tr>
<td>CIAT 13214, 13218, 23138, 23275, 23975, 23992, 23995, 23996</td>
<td>Colombia</td>
<td>Subhumid to humid environment. Selected in Santander de Quilichao (CIAT research station) for adaptation to acid soils, nutritive value and DM production.</td>
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<tr>
<td>CIAT 13953</td>
<td>Costa Rica</td>
<td>Subhumid to humid environment. Selected for DM yield across a range of environments from acid to moderately acid soils.</td>
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<tr>
<td>134 accessions under evaluation at CIAT (2004)</td>
<td>Colombia</td>
<td>Subhumid to humid environment. Selected in Santander de Quilichao (CIAT research station) for DM yield (&gt;190 g/plant/8 weeks), IVDMD (&gt;66%), adaptation to acid soils and drought (&gt;3 months).</td>
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Plant recovery from cutting/grazing.