

LOCAL NAMES

English (Spanish clover, silverleaf desmodium, silverleaf Spanish clover, Spanish tick-clover); German (spanischer Klee); Spanish (pega, desmodio plateado)

BOTANIC DESCRIPTION

Desmodium uncinatum is a large trailing perennial legume with stems that may grow several metres long and can root at the nodes if they touch moist soil. The cylindrical or angular stems are covered with short, hooked hairs that stick to hair or clothing.

Leaves alternate, trifoliate with pointed leaflets (up to 10 cm long x 5 cm wide); the upper side dark green with an irregular generally pyriform silvering about the midrib, the lower side lighter green and uniform in colour, both covered with whitish hairs. Petioles 2-7 cm long. Stipules short, brown, caducous.

Flowers in long paired racemes on stalks up to 50 cm long, widely open when flowering, pink becoming bluish after flowering.

Pods curved, 5-7 cm long and easily break transversely at maturity into 4-8 segments, covered with short hooked hairs that stick to animals and clothing. Seeds mainly light brown with mixture of olive-green to cream, 200,000–220,000/kg.

BIOLOGY

Establishment and growth during the first year are slow but thereafter peaks of growth occur in spring and autumn with a slight depression in the heat of mid-summer.

Desmodium uncinatum is self-fertile, but cross-pollination is important for improved and satisfactory seed set. Seed matures about mid-June when the branches die back.

Seed pods attach to clothing and the coat of animals and spread widely.

ECOLOGY

Widespread in pastures throughout the tropical and subtropical world; limited to areas of up to 1000 m elevation in tropical Brazil. With its stronger taproot, *D. uncinatum* is drought tolerant. It grows in wet soils and tolerates short term flooding, poor drainage and shaded conditions. It is fairly tolerant light frosts, soil acidity but not salinity. Companion legumes include *Desmodium intortum*, *Macroptilium atropurpureum*; grasses include *Setaria sphacelata*, *Chloris gayana*, *Pennisetum clandestinum*, *Paspalum notatum*.

BIOPHYSICAL LIMITS

Altitude: up to 2,000 m

Temperature: 15- 30°C

Rainfall: >1000 mm

Soil type: Adapted to a wide range of soils, from sands to clay loams with an open texture, lighter and more friable soils with moderate fertility; pH 5.5-7.

DOCUMENTED SPECIES DISTRIBUTION

Native: Argentina, Bolivia, Brazil, Colombia, Ecuador, El Salvador, Nicaragua, Paraguay, Peru, Uruguay, Venezuela

Exotic: Australia, Cameroon, Ethiopia, Fiji, Honduras, India, Indonesia, Kenya, Mexico, Niue, Papua New Guinea, Tanzania, Uganda, US, Zimbabwe



The map above shows countries where the species has been planted. It does neither suggest that the species can be planted in every ecological zone within that country, nor that the species can not be planted in other countries than those depicted. Since some tree species are invasive, you need to follow biosafety procedures that apply to your planting site.

PRODUCTS

Fodder: Silverleaf can be sown in permanent grazing pastures but also used for cut-and-carry, for green or conserved feed. Expected legume yields 4–7 t/ha; and legume/grass yields of 15 t/ha DM.

SERVICES

Erosion control: Abundant leaf fall and runner decay provide a deep duff layer for ground cover under the plants and for mulch.

Soil improver: Soil nitrogen in silverleaf planted areas can increase at 90-150 kg/ha.

TREE MANAGEMENT

Seeds should be sown in early summer at the rate of 2.2 kg/ha, no deeper than 1 cm.

Seedling establishment is initially slow, but the established legume starts to grow soon after the cool season. High levels of fertility are needed for satisfactory growth and phosphorus, potash, sulphur and molybdenum should be applied before planting and as maintenance.

'Silverleaf' should be grown with cold-tolerant grasses like *Setaria*, or other tussock species. It can be grown with creeping grasses but does not persist under heavy grazing.

Wind is a danger to *Desmodium uncinatum* leading to pod shatter while seed heads are standing; they should be protected by being laid down in a swath so that any seed drop is caught in the crop. Satisfactory yields can be obtained from direct heading in the field.

Weed competition should be reduced in the early stages by slashing, and grazing should commence after about 16 weeks. Top growth should be eaten down rapidly and the stock removed for four to eight weeks between grazings.

To control leaf-eating caterpillars, DDT at 0.55 kg/ha active ingredient should be sprayed onto the foliage, with an interval of 30 days before the pasture is grazed.

GERMPLASM MANAGEMENT

The seed crop should be mowed when 50 percent of the seed is ripe, allowed to dry in a swath for 10–14 days before threshing. Machine-harvested seed usually does not need treatment to break dormancy. Seed storage behaviour is described as orthodox.

Seed should be inoculated with specific 'Desmodium' group rhizobium (CB 627) before planting. Peak nodulation occurs 1 month before flowering.

PESTS AND DISEASES

Pests include the foliage and root-chewing larvae of the weevils *Amenmus quadrituberculatus* and *Leptopius* spp; whitefringed weevil (*Graphognathus leucoloma*) causes similar (but less) damage. Beetles, caterpillars and grasshoppers are common in moist climates. A pod-borer attacks the pods; *Meloidogyne javanica* and *Radopholus similis* attack the roots with less severe damage. It is susceptible to little-leaf and to anthracnose caused by *Colletotrichum dematium* f. *truncata*.

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SUGGESTED CITATION

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