

Factsheet

GLYCINE A PERSISTENT PRODUCTIVE FORAGE LEGUME FOR DRIER PARTS OF THE CARIBBEAN

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CHARACTERISTICS

Glycine is a deep rooted, trailing/climbing perennial legume originating from Africa which is also found in the East and West Indies and tropical Asia. It is clearly related to "rabbit vine" (*Teramnus labialis*) but considerably more productive in the dry season. Its leaves have fine short hairs on the undersides and the flowers are small and white.

Glycine is best adapted to areas of rainfall of 750-1500 mm (30-60 in). It is moderately drought tolerant; the cultivar Tinaroo stands up better to extended droughty periods in Barbados and Antigua than Cooper. It does not like high rainfall conditions - 1800 mm (72 in). However, it grows well on heavy cracking clay soils provided they are not waterlogged for long periods. It is not suited to acid podzolic soil. It performs best in deep, freely drained latosolic soils and prefers free-draining loams to clays with a pH above 6.5. Glycine is not very productive on the shallow, calcareous soils in the



GLYCINE (*Neonotonia wightii*)

low rainfall areas - less than 1000 mm (40 in) of the region, but it has shown more tolerance of salinity than other tropical legumes.

ESTABLISHMENT

Glycine is more difficult to establish than siratro because the seed is only half the size, seeding vigour is much less and nodulation is more delayed. Consequently it is more susceptible to weed competition. Because of the high degree of hardseededness scarification just before seeding is advisable.

Ideally, seedbeds should be thoroughly prepared for optimum germination and plant establishment; however, reasonable success is possible with minimum tillage or even with direct drilling (sod seeding). Oversowing is very risky and a practice that cannot be recommended.

The seeding rate for glycine is 2-4 kg per ha (2-4 lb per ac). The scarified seed should be planted at a

depth of 1.0–1.5 cm (0.5–0.75 in). It is suited both to pure stand or mixed with grasses. Glycine grows well and is more productive in association with a wide range of grasses including the guineas (*Panicum maximum*), elephant (*Pennisetum purpureum*) pangola (*Digitaria decumbers*) and the Bermudas (*Cynodon dactylon*) cv Coast Cross 1 and Tifton 68.

Early growth is highly susceptible to weed competition but when established can suppress weeds. Swiping the weeds mechanically will allow glycine to become well established after which it will assume control.

Glycine is extremely susceptible to 2, 4-D but as it matures (3–4 months) it becomes more tolerant; and can withstand some spray drift from adjoining fields.

Because it is slow to start CARDI does not recommend that glycine be planted as the sole legume in association with the grasses mentioned earlier. CARDI recommends mixing glycine with siratro (*Macroptilium atropurpureum*) and Teramnus (*Teramnus labialis*) in a ratio 2:2:1. This mixture should be planted with the grasses mentioned previously at the rate of 5 kg per ha (5 lb per ac).

GRAZING AND CUTTING

Glycine has good palatability and will stand-up well to grazing or cutting on an eight week cycle. CARDI's research in Antigua and Barbados showed that when cut at 3.75–5 cm (1.5–2 in) forage dry matter yield ranged between 2.3 and 2.9 t per ha per cutting. The total dry matter yield per annum ranged between 11.5 and 14.5 t per ha.

Glycine planted at the rate of 2–4 kg per ha (2–4 lb per ac) is widely used for hay in Brazil where it is cut at the early flowering stage, dried and baled. The Australians report green matter yields of 9.8 t per ha from a mixed sward of green panic (*Panicum maximum*) grass and glycine. This mixed forage ensiled readily when 60 kg of molasses was added per tonne of green material during the ensiling process.

FEEDING VALUE

The nutrient content of the whole plant sampled at the early seed pod stage is listed below: The analyses are based on results from Antigua, Barbados and Trinidad.

Analysis			
NUTRIENT	Antigua (Tinaroo)	Barbados (Tinaroo)	Trinidad (Tinaroo)
	Per cent		
Protein	18.2	20.2	17.4
Fibre	30.3	31.6	-
Fat	-	6.6	-
Calcium	0.92	0.95	1.36
Phosphorous	-	0.26	0.24
Ash	2.25	2.78	-

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