



# Sulla

## Scientific name(s)

*Hedysarum coronarium*

## Strengths

- Short lived perennial for crop/pasture systems
- Produces large quantities of high quality forage in winter-spring, and regenerates quickly from persisting plants and regenerating seedlings in autumn in the second year
- Non-bloating due to condensed tannins that also convey a defence from bacterial and insect damage; and thus attractive to cattle producers
- Reputedly anthelmintic but confirmation required in Australia, particularly with barber's pole worm (*Haemonchus contortus*)
- Deep tap-rooting legume that conveys environmental benefits and results in extended spring growth
- No seed bank/weed problems in future cropping phases

## Limitations

- Does not tolerate waterlogging or saline soils
- Dormant during the summer months
- Susceptible to two root rotting diseases, *Rhizoctonia solanii* AG 2-2, and *Sclerotium rolfsii* in the subtropics
- Must be managed to set seed in the first year, so that regeneration maximises plant population and performance in the second year

## Plant description

**Plant:** Biennial or short lived perennial, semi prostrate to erect habit, growing 0.3 to 1.6 m tall.

**Stems:** Stems thick but succulent and palatable, becoming more woody when mature.

**Leaves:** Pinnate with 7 to 15 pairs of round to oval leaflets with a terminal leaflet, succulent, upper surface hairless with lower surface hairy.

**Flowers:** Red to crimson with up to 35 florets per flowering head.

**Pods:** Segmented with 3 to 8 egg shaped segments per pod which break up when mature; pods have a rough short thorny surface.

**Seeds:** Creamy white to light brown, slightly flattened, circular to kidney shaped, 190,000 to 230,000 seeds /kg.

## Pasture type and use

A short term, ley legume for use in cropping systems; makes high levels of high quality dry matter production in winter-spring; can be grazed or cut for hay (less leaf drop than lucerne, but thicker stems are more difficult to dry) or silage; is not suitable for use in grass/legume pasture.

## Where it grows

### Rainfall

500-900 mm (subtropics); 550-900 mm (southern and Western Australia)

### Soils

Adapted to well-drained, neutral to alkaline calcareous clay to loam soils having a pH range of 6.5 - 8.7 (water) or 5.8-8.0 (calcium chloride)

### **Temperature**

Winter growing, so can withstand frosts, produces more first year DM if sown in mid- rather than late-autumn.

## **Establishment**

### **Companion species**

Sown alone as a legume forage crop

### **Sowing/planting rates as single species**

5 - 10 kg/ha; target an establishment of at least 25 plants/m<sup>2</sup>

### **Sowing/planting rates in mixtures**

Not applicable

### **Sowing time**

Mid autumn to early winter

### **Inoculation**

Specific inoculant WSM 1592

### **Fertiliser**

Based on soil test, in low P and S situations it will be necessary to apply 10-15 kg P and 10 kg S/ha, and other deficient nutrients.

## **Management**

### **Maintenance fertiliser**

Based on soil test, in low P and S situations it will be necessary to apply 10-15 kg P and 10 kg S/ha, and other deficient nutrients.

### **Grazing/cutting**

Should not be set stocked or crash grazed. It should be grazed when it is 40-50 cm in height to no lower than 15 cm, as most regrowth comes from the leaf axils rather than from the crown. Regrowth is generally slower than with lucerne and the grazing interval should be 6-10 weeks depending on conditions that determine the rate of regrowth.

### **Seed production**

About 100 kg/ha of clean seed in the first year and 250 kg/ha in the second year.

### **Ability to spread**

Will maintain good plant populations into the second season through plant survival and recruitment from seed set in the first year. Unlikely to spread beyond the area where sown.

### **Weed potential**

Very low

### **Major pests**

Appears highly tolerant to lucerne aphids. Helicoverpa (native budworm or Heliothus) larvae may attack sulla before and during early flowering causing some damage and the lucerne parasitic seed wasp can reduce seed yields. It is moderately resistant to red-legged earth mite and lucerne flea.

### **Major diseases**

It is resistant to clover scorch disease, but susceptible to Sclerotium rolfsii and Rhizoctonia solanum AG 2-2, and moderately susceptible to Phytophthora medicaginis. It is reported to be susceptible to powdery mildew but not with the same severity as with medics.

### Herbicide susceptibility

No grass or broadleaf herbicides are yet registered for use in sulla; seek advice from your agronomist. Dual Gold (pre-emergent) and Bromoxynil, Jaguar and 2,4DB (post-emergent) severely limit the survival and production of sulla.

## Animal production

### Feeding value

The crude protein content can be up to 26%, digestibility to over 80% and metabolisable energy (10.5-13 MJ/kg DM; in New Zealand, lambs grazing sulla grew up to 25% faster than those grazing ryegrass/white clover pastures and had higher dressing out percentages.

### Palatability

Extremely palatable for both sheep and cattle.




### Production potential

Under ideal conditions, 8-12 t DM/ha in 1st year; 12-20 t/ha in 2nd.

### Livestock disorders/toxicity

None known

## Cultivars

Group	Cultivar	Seed source/Information
Short term legume in cropping rotations - Grazing/Conservation	Wilpena 	Wrightson Seeds
	Flamenco 	Ballard Seeds Seed Distributors
Short term legume in cropping rotations - Grazing	Moonbi 	Wrightson Seeds

 Denotes that this variety is protected by Plant Breeder's Rights Australia