



A collaboration between AWI, GRDC, MLA, RIRDC and Dairy Australia

# Snail medic

## Scientific name(s)

*Medicago scutellata*

## Strengths

- Well adapted to alkaline, cracking clay soils.
- Useful in crop/pasture rotation systems.
- Vigorous seedlings and high DM production.
- Good tolerance to redlegged earth mite.
- Less likelihood of bloat than with other medics.

## Limitations

- Poor persistence in long term tropical grass pastures.
- Not adapted to soils with pH <6.0.
- Regenerating seedlings can be a weed problem in winter crops.

## Plant description

**Plant:** Semi-erect to erect, self-regenerating, cool season annual legume, growing to 50cm tall

**Stems:** Soft, semi erect, branching and hairy

**Leaves:** Comprise three elliptically shaped, hairless, leaflets (sometimes with short hairs on the upper surface, and short to longer hairs on the lower surface); 15 - 30 mm long, 7 - 20 mm wide; leaf margin serrated; purple flecking( generally sparse) in some cultivars.

**Flowers:** Yellow to orange yellow, about 10 mm wide, 1 - 3 in a cluster.

**Pods:** Large (13 mm), spineless, globe -shaped, comprising 5 - 6 coils; straw coloured to grey to dark grey when mature, , containing 6 - 10 seeds.

**Seeds:** Yellow or yellow-brown, kidney shaped seed, 50,000 - 130,000 seeds /kg

## Pasture type and use

Generally winter growing annual ley legume in dryland cereal growing regions of southern and subtropical Australia, where it is grazed by livestock or cut for hay. It is suited for hay production because of its upright growth. It may be used as a legume component in permanent grass/legume pastures in the cooler subtropics.

## Where it grows

### Rainfall

Requires an annual rainfall of 300 - 700 mm

### Soils

Suited to neutral to alkaline medium loams to heavy clay soils that are; regenerates best on self mulching soils.

### Temperature

A winter/spring growing annual that can withstand low temperatures, although production is limited by frosts. More productive when sown in early autumn.

## Establishment

### Companion species

Often grown with winter cereals such as oats for grass/legume hay production; sown with other medics including barrel medic in the subtropics and gama medic in southern Australia. It regenerates later than barrel, strand and burr medics.

### Sowing/planting rates as single species

4 - 6 kg/ha in the subtropics

4 - 10 kg/ha in southern Australia

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

Sow at a rate depending on the proportion in the mix, but generally 3 - 4 kg/ha in the subtropics and 2 - 4 kg/ha in southern Australia.

### **Sowing time**

Early autumn to early winter.

### **Inoculation**

Group AM

### **Fertiliser**

Where soils are low in nutrients, particularly phosphorus (P) and/or sulphur (S), it would be beneficial to apply 10 - 15 kg P and 10 kg S/ha annually, and copper (Cu), zinc (Zn) and molybdenum (Mo) if they are deficient. Soil tests will determine the need and appropriate rates. In permanent pasture, fertilise according to deficiencies identified in soil tests.

## **Management**

### **Maintenance fertiliser**

Snail medic is generally grown in rotation with crops. If the soils are deficient, particularly in P and S, the crops are fertilised accordingly. In a rotation system, there should be sufficient residual fertiliser for good medic production. Soil tests will determine the need and appropriate fertiliser rates.

### **Grazing/cutting**

In the establishment year, delay grazing until plants are well established. Graze leniently until flowering then remove stock to maximise seed set.

Rotationally graze in following years. Snail medic is susceptible to heavy grazing. Pods may be eaten by sheep grazing the pasture during the summer and on soils that are not self-mulching, this may reduce the seed reserve significantly.

### **Seed production**

Average seed production is 400 - 500 kg/ha with up to 1,000 kg/ha in good seasons. Pods ripen over an extended period and drop from the plant at maturity. Seed is harvested using vacuum harvesting equipment. Hard seed levels vary between cultivars, but are always moderate to high.

### **Ability to spread**

Small amounts of seed are spread in the dung following ingestion by livestock. Seed can also be spread through hay.

### **Weed potential**

Low weed potential as snail medic is palatable and readily eaten by livestock, and is limited in its soil adaptation. Being a self regenerating annual with a staggered germination, it can be a weed of cereal and grain legume crops

### **Major pests**

Some tolerance to redlegged earth mite, lucerne flea and spotted alfalfa aphid, but susceptible to bluegreen aphid.

### **Major diseases**

Susceptible to root rot, alfalfa mosaic virus, and black stem fungus/phoma.

### **Herbicide susceptibility**

Susceptible to residual herbicides from a cropping phase, particularly sulfonylurea on alkaline soils.

## **Feeding value**

### **Palatability**

Readily eaten by livestock as green feed or hay.

### **Production potential**

Live weight gain of 1 kg/day with cattle or 300 g/day with lambs can be expected.

### **Livestock disorders/toxicity**

Occasionally red gut in sheep; can cause bloat in cattle, though with a lower probability than other medic.

### **Cultivars**

<b>Cultivar</b>	<b>Seed source/Information</b>
Sava	Australian Herbage Plant Cultivars
Silver	Seed Distributors
Essex	Australian Herbage Plant Cultivars
Kelson	Australian Herbage Plant Cultivars

### **Further information**

Annual medic (DPI&F, Qld)

Snail Medic (Tropical Grassland Society)

Snail Medic (NSW DPI Agnote DPI-267)

Lloyd, D, O'Brien, S, Johnson, B, Pengelly, B and Wurst, M (2006). Pasture Legumes for Subtropical Grain and Pastoral Systems - the Ute Guide (PIRSA, GRDC)

Wurst, M (2004). Pasture Legumes for Temperate Farming Systems - the Ute Guide (PIRSA, GRDC)

### **Acknowledgements**

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### **Author and date**

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