



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

Sphere medic

Scientific name(s)

Medicago sphaerocarpus

Strengths

- More tolerant of acidic soils than other commercially available annual medics
- Better suited to crop rotations than subterranean clover, due to higher hard seed levels
- Deep roots, which allow it to remain green for up to 2 weeks into late spring than subterranean clover
- Resistant to Phoma blackstem (*Phoma medicaginis*)
- More tolerant of redlegged earth mite than subterranean clover at the seedling stage

Limitations

- Susceptible to blue green aphids
- Overgrazing during flowering can markedly reduce seed set
- Large pods on the soil surface are readily eaten by sheep, resulting in seed loss if grazing management is not controlled over summer
- High hard seed levels can result in thin stands in the year after sowing (recommendation is to crop in the second year)

Plant description

Plant: semi-prostrate to prostrate self-regenerating annual.

Stems: prostrate to semi-erect, multi-branched

Leaves: almost round, dark green and hairless; leaf veins clearly visible

Flowers: pale yellow, average four flowers on each stalk

Pods: spherical to oval-shaped pods (7-9 mm long), comprising 5-6 tightly compressed pod coils and short, straight spines (about 1 mm long).

Seeds: pod contains 7-8 yellow-brown, kidney shaped seeds, of similar size to subterranean clover.

Pasture type and use

Sphere medic is the most acid tolerant of the currently available annual medics and is suited to ley farming systems in sandy loam to clay loam soils with a pH > 4.8 (CaCl₂).

Where it grows

Rainfall

Sphere medic is best suited to areas with 350-550 mm annual rainfall.

Soils

Sphere medic grows well on a range of soil types, ranging from sandy loams to clay loams and with pH 4.8 - 8.0 (CaCl₂). It is not suited to sowing on deep sands or highly acidic soils.

Sphere medic has some tolerance of transient waterlogging, but not of extended periods of waterlogging.

Sphere medic has better tolerance of salinity than subterranean clover, but is not as tolerant as burr medics.

Temperature

Frost tolerance unknown.

Establishment

Companion species

Compatible with many annual legumes (e.g. subterranean clover, biserrula, serradella, rose clover, gland clover and burr medic), depending on soil type and could also be sown with perennial grasses (e.g. Italian ryegrass).

Sowing/planting rates as single species

Sow 8-10 kg/ha as a pure forage or seed crop.

Sowing/planting rates in mixtures

Sow 2-3 kg/ha of sphere medic with 3 kg/ha each of subterranean clover and other annual legumes for a mixed pasture.

Sowing time

Sow sphere medic as close to the break of season in autumn as possible.

Inoculation

Seed of sphere medic must be inoculated with group AM rhizobia.

Fertiliser

Sow with 100 to 150 kg/ha superphosphate, or super/potash if on light soils.

Management

Maintenance fertiliser

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Grazing/cutting

Sphere medic can be grazed heavily in winter and early spring. Grazing must be reduced from flowering onwards to achieve good seed yields. During this time stock can be transferred to subterranean clover pastures.

Sphere medic pods are large and very accessible to sheep on the soil surface. Grazing management needs to be controlled over summer to ensure that high numbers of pods are not eaten, leading to a reduction in seed reserves and poor legume persistence.

Seed production

Sphere medic needs to be vacuum harvested, like other annual medics. Grazing must be reduced from flowering onwards to achieve good seed yields.

Ability to spread

Limited.

Weed potential

There have not been reported cases of sphere medic growing within native vegetation.

Major pests

Sphere medic is susceptible to attack by blue-green aphids. It is more tolerant of redlegged earth mite than subterranean clover, particularly at the seedling stage.

Major diseases

Sphere medic is resistant to Phoma blackstem (*Phoma medicaginis*)

Herbicide susceptibility

There are no broadleaf herbicides currently registered for use on sphere medic. It is particularly sensitive to MCPA and Raptor®. Control weeds in winter with heavy grazing. Grass weeds can be safely controlled with common grass-selective herbicides.

Animal production

Feeding value

Herbage produced by sphere medic is of high quality, with quality likely to be similar to other annual medics and lucerne up to the stage of early flowering. Sphere medic loses quality from the commencement of flowering through to maturity.

Palatability

Sphere medic appears to be very palatable to stock.

Production potential

Sphere medic will stay green for up to 2 weeks longer than subterranean clover in late spring. It also has the potential to produce more feed.

Its relatively large seeds results in a vigorous seedling. Sphere medic has the potential to produce more autumn-early winter feed than subterranean clover in intensive pasture-crop rotations.

Livestock disorders/toxicity

No livestock disorders have been reported but, as with most legumes, could cause bloat in cattle in very pure sphere medic swards.

Its resistance to Phoma blackstem should result in low levels of the chemical coumestrol, which can cause infertility problems in ewes.

Cultivars

Cultivar	Seed source/Information
Orion	Ballard Seeds AusWest Seeds

Further information

For more information, phone Phil Nichols (08 9368 3547) or Brad Nutt (08 9368 3870, Department of Agriculture and Food Western Australia, and Brian Dear (02 6938 1856) or Belinda Hackney (02 6938 1858), New South Wales Department Primary Industries

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Author and date

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