

Penfield Barrel Medic

Medicago truncatula



Seeding Rate	kg/ha
Dryland	10 - 15
High Rainfall/Irrigation	15 - 20

Seed Treatment	Goldstrike LongLife®
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Description
Early maturing spineless barrel medic with tolerance of SU herbicide residues

Market Segment/Target
Grazing and hay production

Features
New early barrel medic from SARDI breeding program
Spineless barrel medic
SU herbicide residue tolerance

Benefits
First medic variety with elite combination of spineless trait and SU herbicide residue tolerance in a barrel medic
Good grazing tolerance
High forage and seed yields

Range	
Low Bloat™	N
Super N Fixer™	N
XtraLeaf®	N

SEED AGRONOMY TABLE	
Maturity	N
Hard Seed Level (description)	9
Waterlogging Tolerance	Fair
Flowering	80-90 days

Hard Seed Level 1 = Least Hard 10 = Most Hard
Burr Burial Strength 1 = Very Weak 10 = Very Strong

ESTABLISHMENT GUARANTEE®

At S&W Seed Company Australia we're so confident about our seed genetics and seed quality, we will replace seed at half the original purchase price if it fails to establish satisfactorily in the first thirty days*

STRENGTHS

Spineless pods do not get caught in sheep wool. Tolerant to boron.
Palatable at all growth stages, including dead leaves and stems, and seedpods over summer
High nutritive value with high protein content
Fixes atmospheric nitrogen, benefiting cereal crops grown in rotation
As a grass-free pasture in rotation with cereals it is a disease break for various cereal pathogens including cereal cyst nematode, root lesion nematode, take-all and crown rot
Provides non-selective weed control options for reducing risk of herbicide resistant weeds in cropping phases (eg. grazing, green manuring, hay production, spraytopping)
Hardseeded and once established will maintain a soil bank of seed reserves and will self-regenerate from that seed bank
More productive and persistent in low rainfall areas than sub clover
Outstanding complementary legume component for summer growing grass pastures in the subtropics

LIMITATIONS

Must not be sown too deeply
Winter production can be slow if autumn rains are late
Not well adapted to soils with pH (CaCl2) <5.8, deep sands, waterlogged or moderately saline areas
Herbicide options for broadleaf weed control are limited
Seed harvest requires specialist vacuum harvesting machinery
Lush and/or pure stands can cause animal health problems

PASTURE TYPE AND USE

Used as a self-regenerating autumn to spring growing annual legume in dryland cereal/livestock zones in southern Australia, in rotation with winter cereals, grain legumes and canola, and in association with grass in permanent pastures in the subtropical grain and pastoral zone. Once established its hard seededness allows it to regenerate from a seed bank after 1 to 3 years of crops.

WHERE IT GROWS

Rainfall: Barrel medic requires an annual rainfall of 250 to 700 millimetres. A growing season rainfall of 150 to 300 millimetres. Early flowering varieties are suited to lower rainfall zones.

Temperature: It is an autumn to spring growing annual, best-suited to areas with mild growing seasons (15 to 25°C.) However, it will tolerate higher and lower temperatures.

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PLANT DESCRIPTION

Plant: Semi-prostrate annual legume, 15 to 30 centimetres high, with metre side branches from near the base.

Stems: Prostrate to ascending, green and hairy.

Leaves: Made up of three wedged shaped leaflets, matt green, hairy on both sides and toothed on the end margin. The central leaflet stalk is longer than the other two, while in most clovers (*Trifolium* spp.) they are all of similar length.

Flowers: Yellow, pea-like and in small clusters of 2 to 4.

Pods: Barrel shaped, 4 to 8 millimetres long, hardening when ripe, 3 to 5 coils, spines of variable length and 5 to 7 seeds per pod.

ESTABLISHMENT

Grasses: Annual ryegrass, volunteer cereals or sown cereals for grass/ legume hay production, and with a range of summer growing grasses in the Subtropics.

Grasses and/or Cereal: Annual ryegrass, volunteer cereals or sown cereals for grass/legume hay production, and with a range of summer growing grasses in the Subtropics.

Legumes: Other annual medics (*Medicago* spp.), sub clover, lucerne. Sowing/planting rates as single species: 10 to 15 kilograms per hectare in southern Australia, 4 to 6 kilograms per hectare in the subtropics. Ensure seed is Goldstrike LongLife® treated.

Sowing/Planting rates in mixtures: 3 to 5 kilograms per hectare in southern Australia, 2 to 3 kilograms per hectare in the subtropics (3 to 4 kilograms per hectare if undersown with crops). Undersowing with cereal grain or forage crops is an excellent management option for establishing barrel medic. Low sowing rates of the cereal grain crop (e.g. 15 kilograms per hectare) are essential for success with undersowing. Ensure seed is Goldstrike LongLife® treated.

Sowing time: Sown April-June. Typically dry sown into the previous year's cereal stubble before the opening rains or into a moist, weedfree seedbed soon after the break. Shallow sowing (1-2 cm) is essential with press wheels, harrows or prickle chains to improve soil-seed contact and establishment.

Inoculation: Goldstrike LongLife® Treated. The use of Goldstrike LongLife® seed treatment is recommended to reduce damage from insects at seedling stages.

Fertiliser: Phosphorous is generally the single most limiting macronutrient for barrel medics; sulphur may be required on some soils in the subtropics. Some soils, particularly infertile sands, may also be deficient in important trace elements (eg. Cu, Zn, Mo and Co), some of which are directly involved in nitrogen fixation.

MANAGEMENT

Maintenance fertiliser: Generally barrel medics are grown in fairly close rotation with other crops which, if adequately fertilised, provide enough residual nutrients to maintain general soil fertility and medic growth. However, when sown in extended pasture phases on infertile soils in both southern Australia and the subtropics are likely to require topdressing with superphosphate at least. Soil testing is required to determine the need, timing and appropriate application rates. The trend towards high analysis fertilisers (eg. DAP, MAP) in broadacre farming has also resulted in zinc deficiencies becoming more common on some soil types. Plant tissue testing is a more sensitive test for micronutrient deficiencies, some of which can be addressed in the short term with foliar sprays.

Grazing/Cutting: Establishment: defer grazing in the first year until plants are well established and then only graze lightly until flowering. Remove stock until medic has finished flowering and producing pods, to maximise seed-set for subsequent regeneration. Paddocks should not be "crash" grazed or cut for hay in the first year if the stand is expected to regenerate.

Weed Potential: Low environmental weed potential due to its preference for moderately fertile soils, and because of its specific rhizobial requirements, high palatability and readily grazing preference. As a selfregenerating plant it can be a weed of crops in crop/pasture rotations but easily controlled in cereals with a range of inexpensive broadleaf weed herbicides. Fewer options in grain legumes crops.

Major Pests: Good resistance to blue green aphid and spotted alfalfa aphid but susceptible to red legged earth mite, lucerne flea, cowpea aphid and sitona weevil.

Major Diseases: Phoma black-stem, rhizoctonia bare-patch and powdery mildew.

Herbicide Susceptibility: Tolerant of grass-selective herbicides. Some herbicides available for selective control of certain broadleaf weeds. Spray-grazing and spray-topping techniques using sub-lethal doses of less-selective herbicides also available. Tolerant of some herbicide residues from cropping phase, particularly sulfonylurea herbicide residues in low rainfall areas with alkaline soils.

REGENERATION

In crop/medic rotation systems, it is best to defer grazing at the break of the season until the ground is covered and/or medics are well established (approx. 6 leaves, 2 to 3 centimetres height, less than 1000 kilograms per hectare dry matter). Set stock to control upright grasses, weeds and to encourage prostrate growth, increasing grazing pressure as necessary to prevent overly 'bulky' pastures in early spring. Reduce grazing pressure if possible whilst medic are flowering to maximise pod and seed-set. In grass/medic pastures in the subtropics, moderate to heavy grazing in the late summer is needed to utilise the grass and minimise the competition for light by the establishing medic. This grazing management should be applied sequentially year by year as it will not be possible or desirable to graze all paddocks in this way each year. Summer grazing (southern Australia) carefully monitor grazing of dried residues over summer, as over grazing of pods, especially in the first year and on hard setting soils, will reduce future pasture regeneration.

ANIMAL PRODUCTION

Feeding value: Has high levels of crude protein and digestibility. Digestibility ranges from 55 to 75 per cent DMD, (equates to ME energy of 8 to 10 megajoules per kilogram DM) and crude protein from 17 to 23 per cent depending on growth stage.

Palatability: Highly palatable.

This variety was developed during a collaborative project between, MLA, SARDI and S&W Seed Company.



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