

# Seraph

**STRAND MEDIC**  
*Medicago littoralis*



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

<b>Seed Treatment</b>	Goldstrike LongLife®
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**Description**  
Powdery Mildew resistant, SU residue tolerant strand medic

**Market Segment/Target**  
Regenerating annual pastures

**Features**  
Excellent early vigour and winter production  
Resistant to SU Herbicide and Powdery Mildew  
Adaptable to a wide range of soil types

**Benefits**  
Good adaptation to alkaline sandy loam in low rainfall  
Palatable at all growth stages  
High nutritive value with high protein content

<b>Range</b>	
Low Bloat™	N
Super N Fixer™	N
XtraLeaf®	N

<b>SEED AGRONOMY TABLE</b>	
Maturity	N
Hard Seed Level (description)	N
Waterlogging Tolerance	Fair
Flowering	90 days

## 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

Good adaptation to alkaline sandy loams in low rainfall (AAR less than 275 millimetres) temperate cropping zones  
Annual pasture legume, palatable at all growth stages including senesced dry matter and seedpods for grazing over summer  
High nutritive value with high protein content  
Fixes atmospheric nitrogen when effectively nodulated, 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 (*Heterodera avenae*), root lesion nematode (*Pratylenchus neglectus* and *P. thornei*), take-all (*Gaeumannomyces graminis var tritici*) and crown rot (*Fusarium pseudograminearum*)  
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 bank of seed reserves in the soil and will selfregenerate

## LIMITATIONS

Relatively small seeded and so must be shown shallow (1 to 2 centimetres) in year of establishment  
Winter production can be slow if autumn rains are late and insufficient leaf area is produced before soil and air temperatures fall  
Not well adapted to soils with pH water greater than 6.5 (pH CaCl greater than 5.8) deep sands, waterlogged or moderately saline areas  
Sensitive as seedlings to redlegged earth mite (*Halotydeus destructor*); as mature plants to lucerne flea (*Sminthurus viridus*) and pasture aphids (depending on cultivar)  
Herbicide options for broadleaf weed control are limited  
Harvest of seed generally requires specialist vacuum harvesting machinery

## PASTURE TYPE AND USE

Used as a self-regenerating autumn to-spring growing annual pasture, germinating after autumn rains, flowering in spring and setting seed in mid spring. Typically used in dryland cereal/livestock zones in southern Australia in rotation with winter cereals, grain legumes and canola, and may be used with other medics in association with grass in permanent pastures in the subtropical grain and pastoral zone. Once established its hardseededness allows it to regenerate from a soil-seed bank after short cropping phases of typically one to three years.

# Seraph

## WHERE IT GROWS

**Rainfall:** Adapted to Mediterranean and Temperate Zones of southern Australia to the subtropics in northern New South Wales and southern Queensland. Annual rainfall of 250 to 650 millimetres (growing season rainfall 175 to 300 millimetres).

**Temperature:** Strand medics are autumn-to-spring growing annuals suited to areas with mild growing seasons (15 to 25°C) but will tolerate higher and lower temperatures.

## PLANT DESCRIPTION

**Plant:** Semi-prostrate annual, 10 to 25 centimetres high, with multiple lateral branching from near the base.

**Stems:** Prostrate to ascending, green and hairy; stipules toothed.

**Flowers:** Small, yellow, pea-like and in small clusters of three to four.

**Pods:** Small, short barrel-shaped, 3 to 5 millimetre long, hardening at maturity, three to four coils, without spines or with short spines with no hooks and four to seven seeds per pod.

## ESTABLISHMENT

**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). Ensure seed is Goldstrike LongLife® treated.

**Sowing/Planting rates as single species:** 6 to 10 kilograms per hectare in southern Australia; 4 to 6 kilograms per hectare in the subtropics. Ensure seed is Goldstrike LongLife® treated.

**Sowing time:** Sown April to 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 to 2 centimetres) is essential with press wheels, harrows or prickle chains to improve soil-seed contact and establishment. Undersowing with cereal grain or forage crops, is an excellent management option for establishing strand medic as a component of grass/legume pastures in the subtropics where the grass is sown after the medic sets seed. Low sowing rates of the cereal grain crop (e.g. 15 kilograms per hectare) are essential for success with undersowing.

**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 annual medics. Sulphur and/or potassium may be required on some soils (especially sandy loams and/or in the subtropics). Some soils, particularly infertile sands, may also be deficient in important trace elements (eg. Zn, Cu, Mo and Co), some of which are directly involved in nitrogen fixation.

## MANAGEMENT

**Maintenance fertiliser:** Generally annual 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 medics are used in extended pasture phases on infertile soils in both southern Australia and the subtropics, they 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 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.

**Ability to Spread:** Colonises well from seed reserves. Some spread by seed in livestock faeces, pods adhering to sheep/wool or by movement of hay.

**Weed Potential:** Low environmental weed potential due to its preference for moderately fertile soils, and because of its specific rhizobial requirements, high palatability and grazing preference by livestock. As a self-regenerating 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:** Redlegged earth mite, lucerne flea, bluegreen aphid, spotted alfalfa aphid and sitona weevil.

**Major Diseases:** Phoma black-stem (Phoma medicaginis), rhizoctonia bare-patch (Rhizoctonia solani) and powdery mildew (Erysiphe trifolii). *Pratylenchus neglectus* root lesion nematode (nb should not build up nematode numbers but productivity is reduced in their presence, i.e. they are intolerant).

**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. Intolerant of some herbicide residues from cropping phase, particularly sulfonyleurea herbicide residues in low rainfall areas with alkaline soils (except cv. Angel).

## ANIMAL PRODUCTION

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

**Palatability:** Readily eaten by livestock as green feed or hay.

**Production Potential:** Excellent feed for growing and finishing livestock when in growing phase. Dry residues and seed pods provide useful adjunct for maintenance of sheep grazing crop stubbles. In general animals can be expected to make better live weight gain and wool production on legumes than grasses, as a result of higher intake and more efficient utilisation of high protein, high energy feed.

**Livestock Disorders/Toxicity:** Photosensitisation in horses, occasionally red gut in sheep, bloat in cattle. Phytoestrogens/coumestrols potentially can have negative effects on the reproduction of grazing livestock but this is rarely reported in annual medics.



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