

L71

LUCERNE *Medicago sativa*



Seeding Rate	kg/ha
Dryland	4 - 8
High Rainfall/Irrigation	10 - 20

Seed Treatment	Goldstrike LongLife® XLR8™
-----------------------	----------------------------

Description
Developed through partnership between NSW DPI and S&W Seed Company. Regularly outperforms under dryland and irrigated conditions.

Market Segment/Target
Grazing, hay and silage

Features
Highly grazing tolerant
High pest and disease rating
High leaf retention

Benefits
Highly persistent
Offers a high quality flexible option
Produces high quality hay

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

SEED AGRONOMY TABLE	
Maturity	N
Hard Seed Level (description)	N
Waterlogging Tolerance	N

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

Perennial, year round production
Deep rooting, extracts water and nutrients from depth, restricts water table recharge
Moderate tolerance of soil salinity and sodicity
Responds quickly to spring and summer rainfall (or irrigation)
Dual purpose (grazing and hay)
Highly productive
High nutritive value

LIMITATIONS

Susceptible to waterlogging
Needs rotational grazing
Can cause bloat in cattle

PASTURE TYPE AND USE

Medium term perennial (3 to 5 years); year-round production, predominantly in the spring/summer but with varying levels of winter production (winter activity). Used for conservation, particularly hay production; as a 'ley' legume in cropping rotations (often called a 'phase' legume in such systems in southern and western Australia); and as a medium-term legume in long term grass pastures in the subtropics.

WHERE IT GROWS

Rainfall: In rain grown stands, 500 to 1200 millimetres annually (subtropics); 250 to 800 millimetres annually (southern and western Australia).

Soils: Lucerne requires deep, well drained soils (sands to moderately heavy clays) with a slightly acid to alkaline pH. It is intolerant of high levels of exchangeable aluminium and even short periods of waterlogging.

Temperature: Optimum temperatures for dry matter production range from 15 to 25°C in the day and 10 to 20°C during the night. However, this will vary with the winter activity level of the cultivar.

PLANT DESCRIPTION

Plant: Deep rooted, upright, perennial legume.

Stems: Erect from 40 to 80 centimetres high at 10 per cent flower.

Leaves: Comprise three smooth, slightly toothed, oval, wedge shaped to pointed leaflets, sometimes with white crescent shaped markings. Leaf veins strong, straight with little branching. Broadly triangular stipules with 1 or more small teeth occur at the point of leaf attachment to the stem.

Flowers: Pea flowers, mostly purple in colour, and about 8 millimetres across, borne in clusters up to 4 centimetres long at the tops of branches.

Pods: 4 to 5 coils in a spiral, spineless with a hard outer surface; produced in clusters; 1 to 5 seeds per pod.

Seeds: Small, green to yellow to light brown in colour; kidney shaped; 440,000 to 500,000 seeds per kilogram.

ESTABLISHMENT

Legumes: 2 to 12 kilograms per hectare for dryland hay or grazing, depending on annual rainfall. 8 to 20 kilograms per hectare for irrigated hay production. Sow into a finely worked, moist, weed-free seedbed at 1 to 2 centimetres; cover with light harrows/weldmesh. On light soils rolling is desirable to improve seed moisture contact. Direct-drilling can work but failures occur and caution is warranted.

Sowing/Planting rates in mixtures: 0.25 to 1 kilogram per hectare in a grass pasture, depending on the makeup of the legume component of the stand.

Sowing/Planting rates as single species: Early autumn to early winter; late April is ideal. In southern Australia districts with an eight month or more growing season, lucerne is best sown between late August and October, ideally on a winter fallow. Late Spring sowings are dictated by wet years.

Inoculation: Goldstrike LongLife® XLR8™ treated. The use of Goldstrike LongLife® XLR8™ seed treatment is recommended to reduce damage from insects at seedling stages.

Fertiliser: On marginal fertility soils, responses to magnesium, manganese, zinc, molybdenum, boron and copper can occur. Establishment on acid soils is often made possible following the spreading/incorporating 1 to 5 tonne lime per hectare. Aluminium toxicity can occur on soils with pH of lower than 5.5 (water) or 4.7 (calcium chloride). Based on soil test, potassium (K), phosphorus (P) and sulphur (S) levels need to be maintained at the following levels: K: 0.3 metres. Equivalent to 100 grams; P: 25 milligram per kilogram; S: 10 milligrams per kilogram.

MANAGEMENT

Maintenance fertiliser: Maintenance fertiliser needs to be applied regularly in irrigated lucerne where large quantities of nutrient are removed in hay. Based on soil test, potassium, phosphorus and sulphur levels need to be maintained at the levels indicated above.

Grazing/Cutting: Timing of grazing or cutting should be matched to the build up of carbohydrate reserves in the plant's roots. Levels in the roots are lowest about 2 weeks after grazing or cutting and reach their maximum at full bloom, somewhere between 4 to 8 weeks after the previous defoliation (dependent on time of year and winter activity level of the cultivar used). Cutting for hay is best done at 10 per cent flower or when the basal shoots are 3 to 5 centimetres in length. It should be rotationally grazed for long term persistence, whether grown as a pure stand or in mixed swards. It should be grazed off in 1 to 2 weeks followed by spelling for 4 to 8 weeks, depending on time of year and winter activity level of the cultivar used.

Ability to Spread: Low. Lucerne is usually cut or grazed before seed matures. If lucerne seed is dropped or spread by livestock, it rarely establishes effectively owing to soil and soil water constraints. In lucerne producing environments, it may be found on road verges but not in adjacent paddocks subject to grazing.

Weed Potential: Low, in keeping with its inability to spread.

Major Pests: Red legged earth mite, spotted alfalfa aphid, blue green aphid, pea aphid, lucerne flea, jassids or leafhopper, vegetable jassid, white fringed weevil, sitona weevil, small lucerne weevil, lucerne crown borers, lucerne leaf roller, weed web moth or cotton webspinner, cutworms, wingless grasshoppers, thrips, lucerne seed web moth, native budworm, lucerne seed wasp, mirids, mites, snails.

Major Diseases: Seedling disease: Damping off.

Leaf and stem diseases: Alfalfa mosaic virus, lucerne yellows, bacterial leaf and stem spot, witches broom, common leafspot, Stemphylium leaf spot, Leptosphaerulina leaf spot or pepperspot, rust, downy mildew, Cercospora leaf spot, Phoma black stem, powdery mildew.

Root and crown diseases: Phytophthora root rot, Colletotrichum crown rot, Rhizoctonia canker (most significant,) violet root rot, Acrocalymma crown and root rot, Stagonospora crown and root rot, Fusarium wilt, bacterial wilt, Sclerotium blight and Sclerotinia rot.

Herbicide Susceptibility: Herbicides can be used to take out grasses or broad leaved weeds selectively, or can be used preplanting or post-planting to tackle weeds at different stages of crop development. Mature lucerne is difficult to remove with herbicide. Follow agronomist recommendations and check labels for the herbicides that are registered for use in lucerne or to remove lucerne.

ANIMAL PRODUCTION

Feeding value: Lucerne is highly digestible (60 to 75 per cent), is a good source of crude protein (15 to 25 per cent), and has high levels of metabolisable (8 to 11 megajoules per kilogram dry matter).

Palatability: Very Palatable.

Production Potential: Daily live weight gains for beef cattle range between 0.7 kilograms per head per day from stemmy lucerne to 1.5 kilograms per head per day from young, leafy regrowth. Live weight gains of 300 to 400 grams per head per day are achievable with lambs.

Livestock Disorders/Toxicity: There are few problems. To avoid cattle bloat, nitrate poisoning and red gut, do not graze immature/lush lucerne, especially with hungry stock (pre-feed with dry roughage).