



SEED DISTRIBUTORS TECH SHEET



L70 Lucerne winter active (*Medicago sativa*)

L70 is available to the Australian domestic market having been a successful export replacement for Aurora. With significant Australian production of L70 now coming on stream this allows us to position this exciting new Aurora replacement with Australian farmers. The ability of L70 to achieve consistent seed yield returns now allows us to position the new L70 Lucerne at a very competitive price. L70 exhibits excellent forage traits and good disease profile.

L70 vs. Aurora

- L70 offers higher disease and pest package compared to Aurora.
- Superior forage genetics - higher leaf to stem ratio.
- Minimum 90% germination standards (current minimum certified standard for Aurora-60%.)

• L70 seed production is derived from dryland seed production stands only. This is to ensure the dryland integrity and performance of L70, when utilised in standard cereal undersowing practices and marginal dryland grazing enterprises.

• These attributes, combined with superior plant genetics, makes L70 an excellent new Lucerne option over Aurora. This gives Australian farmers higher returns and extra confidence with the Establishment Guarantee program that commons based lucerne cannot offer or compete against.

WINTER ACTIVITY	7
MIN RAINFALL (mm)	350
SEEDING RATE	Kg/Ha
DRYLAND	4-6
HIGH RAINFALL/IRRIGATION	10-15

Multiple Pest and Disease resistance chart

Variety	Winter Activity	Spotted Alfalfa Aphid	Blue Green Aphid	Pea Aphid	Phytophthora Root Rot	Anthrax-nose	Bacterial Wilt	Fusarium Wilt	Stem Nematode	Root Knot Nematode
L70	7	HR	HR	ND	R	R	R	ND	R	ND

HR = High Resistance, R = Resistant, MR = Moderate Resistance, LR = Low Resistance, S = Susceptible, ND = No Data.

Lucerne Agronomic Information

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

- Short-term persistence in some regions (mainly due to disease susceptibility).
- Susceptible to waterlogging.
- Needs rotational grazing.
- Can cause bloat in cattle.

Plant description

Plant: Deep rooted, upright, perennial legume.

Stems: Erect from 40 - 80 cm high at 10% 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 one or more small teeth occur at the point of leaf attachment to the stem.

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

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

Seeds: Small, green to yellow to light brown in colour; kidney shaped; 440,000 - 500,000 seeds/kg.

Pasture type and use

Medium term perennial (3 - 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 - 1200 mm/annually (subtropics); 250 - 800 mm/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.





L70 Lucerne



Temperature:

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

Establishment

Companion species: Lucerne is often sown as a pure sward. It is very competitive but if sown at a low rate it will grow with species such as early-flowering sub clover/annual medics, phalaris and Mediterranean types of tall fescue to boost winter production. It can be grown with chicory and a range of tropical grasses.

Sowing/planting rates as

single species: 2 - 12 kg/ha for dryland hay or grazing, depending on annual rainfall. 8 - 20 kg/ha for irrigated hay production. Sow into a finely worked, moist, weed-free seedbed at 1-2 cm; 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.

* ensure seed is treated

Sowing/planting rates in mixtures:

0.25 - 1.0 kg/ha in a grass pasture, depending on the makeup of the legume component of the stand.

* ensure seed is treated.

Sowing time: Early autumn to early winter; late April is ideal. In southern Australia districts with an 8 month or more growing season, lucerne is best sown between late August & October, ideally on a winter fallow. Late Spring sowings are dictated by wet years.

Inoculation: Treated.

The use of **XLRB** 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 1-5 t lime/ha. 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 m. equiv/100g; P: 25 mg/kg; S: 10 mg/kg.

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 - 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% flower or when the basal shoots are 3 - 5 cm 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 1-2 weeks followed by spelling for 4-8 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 leaf spot, Stemphylium leaf spot, Leptosphaerulina leaf spot or pepper spot, 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 broadleaved weeds selectively, or can be used pre-planting 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.



L70 (left) exhibiting higher leaf carrying trait compared to older plant genetics exhibited in Aurora (right)



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L70 Lucerne

Animal production

Feeding value: Lucerne is highly digestible (60 - 75 %), is a good source of crude protein (15 - 25 %), and has high levels of metabolisable (8 - 11 MJ/kg DM).

Palatability: Very palatable.

Production potential: Daily live weight gains for beef cattle range between 0.7 kg/head/day from stemmy lucerne to 1.5 kg/head/day from young, leafy regrowth. Live weight gains of 300 - 400 g/head/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).

Chemical options in Lucerne

Herbicide Group	Post emergent, seedling and established lucerne							
	Pre-sowing	Bromoxynil	Spinnaker [®]	Raptor [®]	Jaguar [®]	Fusilade [®] , Verdicut [®]	Select [®]	2,40-B Triflamine
Grassweeds								
Ryegrass				Suppression				
Barely Grass								
Orome Grass								
Wild Oats								
Silver Grass				Suppression				
Broadleaf/Weeds								
Capeweed								
Wild Radish				Suppression				
Wineglass				Suppression				
Wild Mustard								
Wild Turnip								
Drumstick				Suppression				
Crop stage	PS	1+ Leaf	1+ Leaf	2- Leaf	3+ Leaf	2-3 Leaf	1- Leaf	2 to 5 leaf
Weed stage	PS	2-5 Leaf	PS 3 Leaf					

Established Lucerne only				
Herbicide Group	Simazine - Simazine [®]	Spray Seed [®]	Paraquat - Shiquat [®] 250	Diuron - Diuron [®]
Grass Weeds				
Ryegrass				
Barely Grass				
Orome Grass				
Wild Oats				
Silver Grass				
Broadleaf/Weeds				
Capeweed				
Wild Radish				
Wineglass				
Wild Mustard				
Wild Turnip				
Drumstick				
Crop stage	At Least one year old			

Shading: control of major weeds/leaf - 1+ leaf PS, pre-sowing PS, pre-emergent or post-emergent only, post-emergent only, C: Indazole, O: Nitrate, Urea, Thiocarb D: On-tron, Insa, Dinitro acids, Pyridine, T: Nicotinic acid L: D: pyridine. Herbicides for weed control in lucerne as indicated by shading.

PS: Pre-sowing any herbicide, consult your agronomist and the product label regarding safe and effective use.

Combined information provided courtesy of Pastures Australia and Seed Distributors



Disclaimer: Seed Distributors has taken all reasonable care in the preparation of this publication. The information contained is thought to be correct at the time of publication. Always seek professional advice from your local agronomist or Seed Distributors representative prior to purchasing any products.



L70 Lucerne

Penfield Station Liveweight gain trial L70 vs Aurora 2011/12

Trial results:

g/Day Weight Gain for the total trial (12 weeks) (6/2/2011 - 27/2/2012)

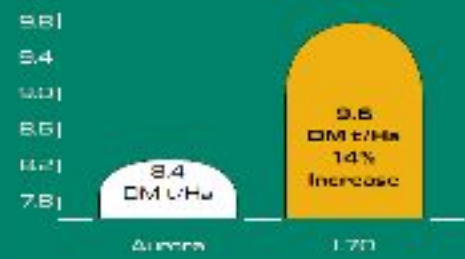


7% increase in daily weight gain achieved with L70 lucerne

Trial details:

- An irrigated 6Ha paddock was divided into 12 half Ha sections, 6 were sown with L70 and 6 sown with Aurora of the 10th of May, 2011 (sowing rate 15 Kg/ha)
- 14 Angus steers were split into grazing groups of 7 steers each, with an average starting weight of 207 kg
- The 2 groups simultaneously grazed L70 and Aurora throughout the entirety of the trial
- The trial ran for 12 weeks, divided into 4 grazing periods of 3 and a half weeks, in which each section of both varieties would be grazed for a half a week, a levelling cut was made after each grazing
- Each group of cattle spent equal time on each of the varieties, swapping a total of 2 times
- No other source feed or supplements were given to the animals

Commercial Forage Yield Trial 2010/2011 - Kg of DM/ha produced



Feed Conversion Rate

	kg/Day DM consumed	g/Day Weight Gain	Kg DM/ Kg Weight Gain
L70	9.4	922	10.2
Aurora	10	863	11.5

Cattle required 10.2 kilograms of L70 lucerne for every 1 kilogram of weight gain. They needed 11.5 kilograms of Aurora lucerne to achieve the same weight gain.

