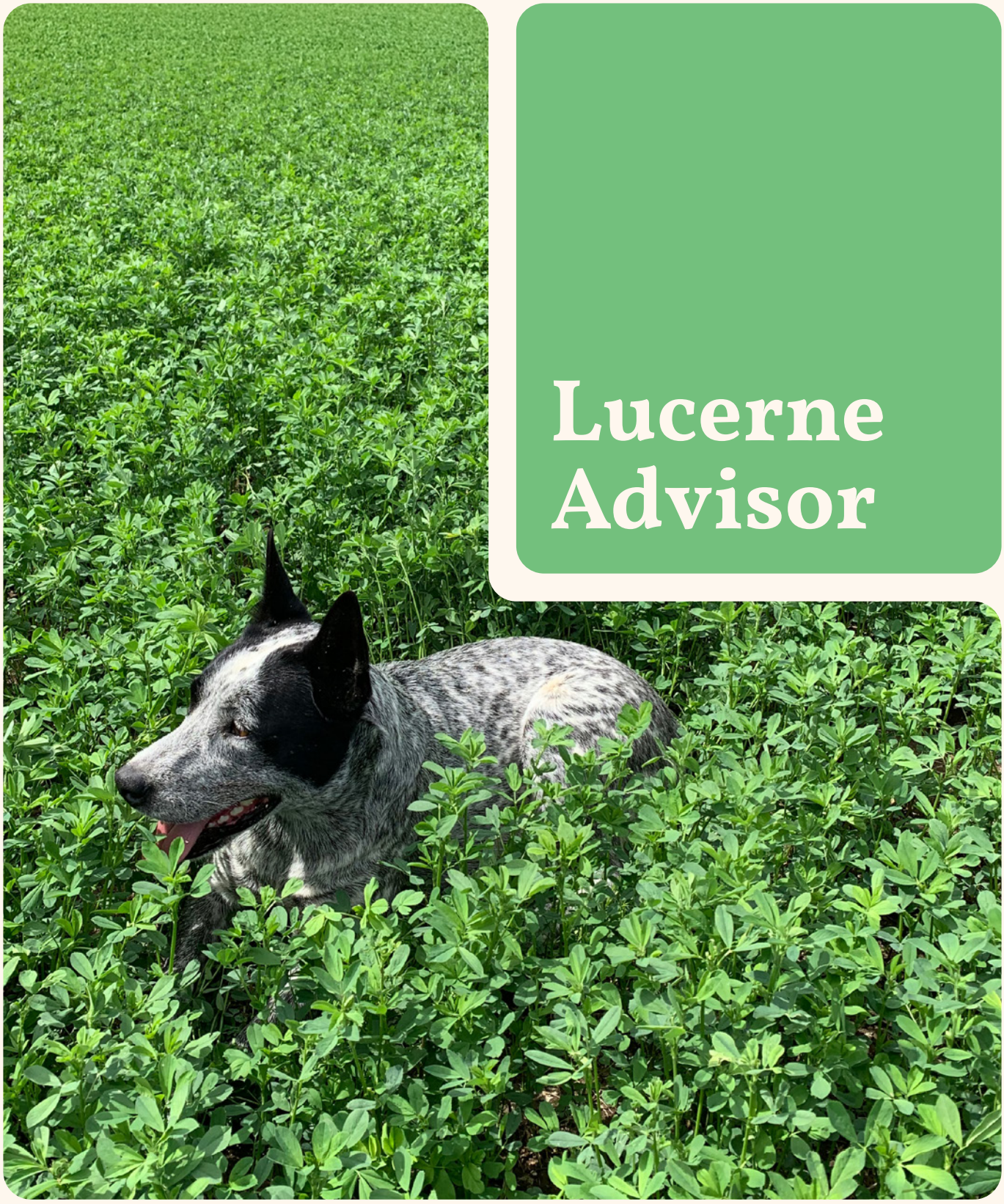


Lucerne Advisor

AlfaGen SEEDS

Establishment Guarantee

At AlfaGen Seeds, we stand behind the quality of our proprietary seed and always aim for the best outcome for our farmers.

Our Establishment Guarantee is straightforward: if your seed doesn't establish successfully within 30 days, we'll replace it at half the original price. It's a commitment that helps you save on replanting costs and plant with confidence, knowing we're here to support you.

Plant with confidence, backed by the support of AlfaGen Seeds.

Terms and conditions apply

It all starts with a seed

Why choose AlfaGen Seeds?

At AlfaGen Seeds, our roots run deep into the land we love. No jargon, just real talk about how we can make a real difference. We understand the soil under your fingernails, the early morning starts and the sheer determination it takes to make things grow. With decades of hands-on experience and local know-how, we're here to share what we've learned. Australian grown, our knowledge comes straight from the field, farm-tested for Aussie conditions.

Our aim is simple - to support Aussie farmers with the best seeds, the right information and a helping hand. We'll provide you with not only top-notch seeds but also the knowledge and tools to help you grow.

It all starts with a seed.

AlfaGen SEEDS

World-leading lucerne varieties

For over 40 years, AlfaGen Seeds has been at the forefront of developing world-class lucerne varieties. Based in Australia, our global breeding program is tailored to the unique needs of Australian environments.

We focus on both dormant and non-dormant lucerne varieties, offering high forage yield, exceptional quality, and strong resistance to pests and diseases. Our varieties are designed to thrive in diverse conditions, including areas with elevated salinity, ensuring reliable performance across a wide range of environmental challenges.

Collaboration with our sales team keeps the breeding program aligned with customer needs. End-user feedback informs every stage of development, from plant selection to seed production, ensuring our varieties meet real-world demands.

Our process involves selecting plants from major lucerne-growing regions and crossing them to produce first-generation (F1) seeds. These breeding lines undergo rigorous trials for dormancy, forage yield, salt tolerance, pest resistance, and more. Only lines meeting AlfaGen's high standards progress to seed build-up and eventual commercialisation—a process that takes up to seven years to perfect.

This meticulous approach guarantees elite genetics in every product - including some exciting new varieties on the horizon!

We offer a complete range of dormancy levels from 3 to 10 to meet the needs of your farming system, from cut-and-carry to grazing. When you choose AlfaGen Seeds, you're investing in premium, high-performing lucerne seeds backed by decades of expertise and innovation.

Why choose AlfaGen Seeds lucerne?

1. Global lucerne breeding program
2. Range of winter activity, with dormancy available from 3-10
3. Elite forage yields and quality
4. Rapid regrowth after cutting or grazing
5. High resistance to pests and diseases
6. Suited to a variety of environmental conditions
7. AlfaGen Seeds Establishment Guarantee

Highly winter active

Highly winter active lucerne varieties are suited to areas with a long growing season and systems where a high level of winter forage production is required. They are early maturing with rapid regrowth, producing high forage yields.

L91®

LUCERNE

:Medicago sativa

L91® lucerne is a top choice among highly winter active varieties in the Australian market, ideal for forage production in short cropping rotations. With a good pest and disease resistance package and superior yields compared to Sequel, L91® offers a more profitable solution for farmers.

Dormancy	Highly winter active 9
Grazing tolerance	Low — X — High
Sowing rate	
Dryland	4-10kg/ha
High rainfall/irrigation	18-25kg/ha
Seed treatment	Goldstrike XLR8®

⊕ **Economical choice**

Offers great value, delivering strong quality and yield at an affordable price point

⊕ **Rapid establishment in cooler months**

Increased planting window

⊕ **Highly winter active**

Maximising year-round production

L97

LUCERNE

:Medicago sativa

L97 lucerne sets a new standard in the highly winter active category, delivering excellent forage yields without compromising quality. Bred in saline conditions, it extends the range of soils where lucerne can thrive. With outstanding winter growth, L97 ensures consistent, high-quality feed year round, for grazing or cutting.

Quick Seed Facts

Dormancy
- Highly winter active 9

Sowing rate
- Dryland 4-10kg/ha
- High rainfall/irrigation 18-25kg/ha

Suitability
- Hay, silage, grazing

Grazing tolerance
Low — High

Seed treatment
- Goldstrike XLR8®

Autumn
- Ideal autumn sowing is in April while soil temperatures are still warm and theres soil moisture available

Spring
- Ideal spring sowing starts in late August when soil temperatures start to rise and there is available soil moisture

- **Increased salt tolerance**

  A leading variety in trials evaluating cultivars for salt tolerance

  Allowing for faster, more reliable establishment in adverse conditions

  Suited to a range of soil types, producing exceptional forage in both saline and non-saline conditions

- **High quality, dual purpose**

  Increased leaf to stem ratio, producing high quality forage, suitable for both grazing & hay production systems

- **Bred in Australia, specifically for Australian conditions**

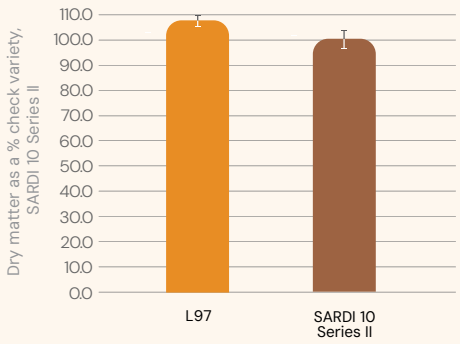
  Promotes sustainability by offering a seed variety that is aligned with the needs of Australian farmers

- **Highly winter active**

  Producing high forage yields all year round

  Extended cutting and grazing opportunities in autumn and winter

Multi year, multi site average dry matter production,as a % check variety



LSD: (P=0.05) = 2156.5 CV = 15 Mean = 20331

Figure 1 shows the dry matter production from trials based at Keith in SA from 2022–2024. The long-term forage data demonstrates an increase in forage production of L97, of up to 7% over the life of the trials when compared with the check variety.

Pest & disease rating

Spotted alfalfa aphid	HR
Blue green aphid	R
Pea aphid	HR
Phytophthora root rot	R
Anthracnose	LR
Bacterial wilt	MR
Fusarium wilt	R
Stem nematode	MR
Root knot nematode	HR

Pest & disease rating scale:

High resistance	(HR)	=	> 50%
Resistance	(R)	=	31-50%
Moderate resistance	(MR)	=	15-30%
Low resistance	(LR)	=	7-14%
Susceptible	(S)	=	0-6%

L97

LUCERNE

Exceeded all expectations

When Trevor Kelly moved from Western QLD into the Eastern Downs area, he decided that he wanted to grow lucerne for the local hay market.

Trevor was racing the clock to plant in the desired window (August) with no prior experience in growing the crop and a paddock that he had to start from scratch.

With the hopes of a La Nina influence and the help of a recently installed centre pivot, Trevor rolled the dice and planted in early November at approximately 25kg/ha.

Combined with cooler temperatures and regular rainfall, L97 got up and going. The first cut was taken in January and the quality of lucerne, leaf retention, and fine stemmed characteristics in the hay of the first cut have been impressive.

"I'm also pleased with the regrowth and how it got growing again after the January cut." Indicated Trevor.

L97 was the preferred option when selecting a variety for Trevor as his irrigation water is a little "hard." It hasn't required much irrigation with the way the season has unfolded, but plenty of irrigation will need to be undertaken down the track with a traditional winter season.

The yield of L97 out of the peak of its season has also been impressive.

"The L97 has produced 1825 small square bales off the 34-acre paddock, which I'm very happy with." commented Trevor.

Top
Trevor Kelly in his paddock of L97

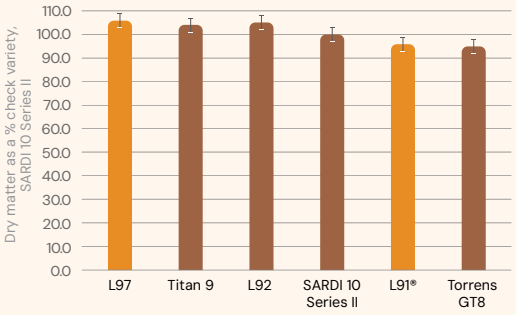
> *"The yield out of the peak of its season has been impressive"*
>
> Trevor Kelly
> Eastern Downs, QLD

New highly winter active genetics

The AlfaGen Seeds lucerne breeding program has a long history of developing highly winter active varieties with outstanding forage yields and quality, with robust pest and disease packages.
The current commercial highly winter active portfolio available for farmers is no exception.

Over the last five years, the AlfaGen lucerne breeding team has developed new lucerne varieties in the 8 to 10 dormancy ranges that consistently outperform current commercial varieties. The graph below shows that customers can produce up to an extra 16% DM/ha/year, growing AlfaGen elite varieties, based in the extensive multi-season and multi-site evaluation program.

Multi year, multi site, average dry matter production as a % of check variety



LSD: (P=0.05) = 2156.5 CV = 15 Mean = 20331

Figure 1 shows the dry matter production from trials based at Keith in SA from 2022–2024.
The long-term forage data demonstrates an increase in forage production of L97, of up to 7% over the life of the trials when compared with the check variety.

L97

LUCERNE

The ideal salt tolerant option

L97 lucerne was a clear leading variety in three salt evaluation trials, with assessment processes conducted in increasing levels of salt tolerance in the lab, greenhouse regrowth potential under non-saline and saline irrigation, and field production at a saline field site Pecos, TX, USA.

TABLE 1

Quality Parameter	Field	Field	Lab	Greenhouse
Type	Soil	Water	Water	Water
Source	Hoban silty clay loam	Pecos River alluvium	NAAIC[3]	NAAIC[3]
Total Dissolved Salts	2131 ppm	2950 ppm	0–20 000 ppm	0 or 3840 ppm
Electrical Conductivity	3.33 dS/m	4.06 dS/m	0–31.25 dS/m	6.00 dS/m
pH	8.9	7.1		
Sodium Absorption Ratio	13.6	11.7		
Sodium (Na)	1491 ppm	702 ppm		
Classification/Rating	Sodic Soil[1]	Class 5: Unsuitable[2]		

[1]Sodic Soil if: EC > 4.0 dS/m, pH > 8.5, SAR > 13 (Waskom et al 2007; Havlin et al 1999)
[2]Class 5: Unsuitable if: TDS > 2100 ppm (Fipps 2003; Provin and Pitt 2022)
[3]Water solution prepared according to NAAIC protocols

Table 1: Summary of soil and water quality parameters for field, lab and greenhouse methods (Scasta J. D., Trostle C. L., Foster M. A., 2012)

Table 2: Summary comparison of Lucerne cultivars across three experiments assessing germination under increasing levels of salt tolerance in the laboratory, greenhouse regrowth potential under non-saline and saline irrigation, and field production at a saline field site Pecos, TX, USA (Scasta J. D., Trostle C. L., Foster M. A., 2012) Scasta J. D., Trostle C. L., Foster M. A. Evaluating Alfalfa (Medicago sativa L.) Cultivars for Salt Tolerance Using Laboratory, Greenhouse and Field Methods. Journal of Agricultural Science, Vol. 4, No. 6; 2012

The findings

In trials evaluating lucerne cultivars for salt tolerance assessing germination in the laboratory, greenhouse for regrowth potential and forage yields in field production, it was found that L97:

- Was the leading variety in the field evaluation, producing the highest yield (kg/ha) in salt conditions of 2131ppm in soil and 2950ppm in irrigation water
- Germinated in saline levels up to 20 000ppm
- Produced high forage and good regrowth under 3840ppm of irrigation water

TABLE 2

Laboratory				Greenhouse			Field	
Percent germination at three salinity levels (1.0%, 1.5% & 2.0%)			IC (50)	Average saline yields	Salt control ration (SCR)		Three year fresh forage average per cut	
Cultivar	**1.0%**	**1.5%**	**2.0%**	**MPa**	**grams**	**SCR value**	**kg/ha**	**Final rank**
Sala	98[a]	82[ab]	86[a]	-3.40	2.87[ab]	0.949[a]	11 534[abc]	1
SW97	98[a]	96[a]	32[bcde]	-1.03	2.88[a]	0.901[abc]	12 008[a]	2
CW59	98[a]	96[a]	34[bcd]	-1.07	2.73[abc]	0.805[bcd]	11 312[abc]	3
A801	100[a]	90[ab]	34[bcd]	-1.02	2.97[abc]	0.792[cd]	11 668[ab]	4
A802	98[a]	88[ab]	42[bc]	-1.10	2.60[bcd]	0.761[d]	11 944[a]	5
P58N	96[a]	80[ab]	26[bcde]	-0.86	2.89[a]	0.932[ab]	9982[a]	[t]6
CW39	100[a]	88[ab]	32[bcde]	-0.99	2.59[bcd]	0.744[d]	10 794[abcd]	[t]6
FGR1	90[a]	84[ab]	36[bcd]	-1.01	2.56[cd]	0.798[cd]	10 962[abcd]	8
TS80	84[a]	76[b]	38[bcd]	-0.97	2.67[abcd]	0.913[abc]	10 063[cd]	9
TS00	82[a]	78[ab]	24[bcde]	-0.79	2.61[bcd]	0.804[bcd]	9620[d]	[t]10
FG91	88[a]	78[ab]	8[de]	-0.72	2.58[bcd]	0.800[cd]	10 771[abcd]	[t]10
Bars	96[a]	76[ab]	6[de]	-0.72	2.46[d]	0.812[bcd]	10 197[bcd]	[t]10
†AZ90	NE	NE	NE	NE	2.48[d]	0.984[a]	NE	
†Mesa	90[a]	78[ab]	36[bcd]	-0.94	NE	NE	NE	
†Malo	86[a]	74[b]	50[b]	-1.17	NE	NE	NE	
‡ AZ88	NE	NE	NE	NE	1.836[e]	0.690[d]	NE	
‡ Sara	78[a]	80[ab]	10[cde]	-0.71	NE	NE	NE	
‡ Ramb	22[b]	2[c]	0[e]	-0.31	NE	NE	NE	
Mean ± SE	88 ± 4.7	78 ± 5.3	31 ± 5.1	NE	2.607 ± 0.06	0.914 ± 0.02	10 904 ± 233	
P-value	0.005	0.000	0.009	NE	0.000	0.004	0.021	
LSD (0.05)	23	22	33	NE	0.250	0.132	919	

Means within columns followed by the same letter are not different according to Fisher's protected Least significant differences (LSD) at the 5% level of significance (a = 0.05).

NE - Indicates a check cultivar 'Not Evaluated' in that experiment or for significance
SE - Standard Error
† - Tolerant check cultivar
‡ - Non-tolerant check cultivar; [t]tie

Winter active

Winter active lucerne varieties are suited to areas where some winter feed is required and longer growing seasons occur. These varieties are the perfect option in a dual purpose system, where persistence and extended grazing potential are important.

Q75®

LUCERNE

:Medicago sativa

Year-round production with exceptional quality in hay, silage and grazing systems

Dormancy	Winter active 7
Grazing tolerance	Low — X — High
Sowing rate	
Dryland	4-10kg/ha
High rainfall/irrigation	18-25kg/ha
Seed treatment	Goldstrike XLR8®

- ⊕ Excellent leaf retention with large leaf size
- ⊕ Winter active for year round production
- ⊕ High pest and disease ratings

L71

LUCERNE

:Medicago sativa

A high-yielding, high-quality, winter active lucerne with strong persistence under heavy grazing and anthracnose pressure

Dormancy	Winter active 7
Grazing tolerance	Low — X — High
Sowing rate	
Dryland	4-10kg/ha
High rainfall/irrigation	18-25kg/ha
Seed treatment	Goldstrike XLR8®

- ⊕ Excellent grazing tolerance
- ⊕ Latest lucerne to come out of the NSW DPI breeding program
- ⊕ Resistance to three strains of anthracnose

L70

LUCERNE

:Medicago sativa

L70 has a good pest & disease package with superior yields over Aurora, making it a more profitable option

Dormancy	Winter active 7
Grazing tolerance	Low — X — High
Sowing rate	
Dryland	4-10kg/ha
High rainfall/irrigation	18-25kg/ha
Seed treatment	Goldstrike XLR8®

- ⊕ Improved genetics over Aurora
- ⊕ Cost-effective option
- ⊕ Good pest and disease package

The L70 advantage

- ⊕ L70 offers higher winter growth over Aurora
- ⊕ Superior forage genetics - higher leaf-to-stem ratio
- ⊕ Minimum 85% germination standards exceed the current minimum certified standard for Aurora of only 65%
- ⊕ These attributes, combined with superior plant genetics, makes L70 an excellent new alternative to Aurora

L70 offers producers higher returns and allows them to plant with confidence knowing they are covered by the Establishment Guarantee program, whereas common lucernes are not.

Leaf trait comparison

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

Agronomic features

AlfaGen L70 has become a leading winter active lucerne variety in the Australian market and an excellent fit for both grazing or forage production. The L70 advantage compared to Aurora include the following agronomic characteristics:

- ⊕ **Better establishment vigour**

  Consistently faster to establish, providing a competitive edge. Ideal for undersowing crops or in pasture mixes
- ⊕ **Higher winter production (activity rating of 7 vs. 6)**

  Faster to recover after cutting or grazing and extends growth to bridge late-autumn and early spring feed gaps
- ⊕ **High resistance to more pests and diseases**

  Improved persistence across all rainfall zones
- ⊕ **Very good forage quality**

  Fine stems and superior leaf retention compared to other winter active varieties

Disease rating comparison

Variety	Spotted alfalfa aphid	Blue green aphid	Phytophthora root rot	Anthracnose	Bacterial wilt	Stem nematode
L70	HR	HR	R	R	R	R
Aurora	HR	HR	R	MR	LR	R

L70 vs. Aurora

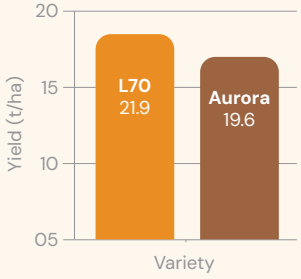
Yield results & pricing comparison

L70 offers very competitive pricing to Aurora and therefore similar hectare input seed costs

	L70	Aurora
Total yield	21.9 t/ha	19.6 t/ha
Hay returns/ha at $400t	$8760/ha	$7840/ha
Extra hay returns	**$300 per hectare, per year**	

AlfaGen Seeds, 2021-2024 dry matter production trial, Keith SA

Trial results



11% yield increase

	Increased forage quality	Better disease profile	Higher DM production	Increased germination %	Establishment Guarantee
L70	✓	✓	✓	✓	✓
Aurora	✗	✗	✗	✗	✗

Dormant and semi-winter-dormant

Winter dormant lucerne varieties have no growth in winter and semi-winter-dormant lucerne varieties have little growth over the winter months. These varieties are the perfect option in systems where winter growth is not critical. They have excellent persistence and outstanding hay and forage quality.

GTL60®

LUCERNE
:Medicago sativa

GTL60® sets the standard for grazing tolerant varieties. It's outstanding tolerance allows for more frequent grazing rotations

Dormancy	Semi-winter-dormant 6
Grazing tolerance	Low — X — High
Sowing rate	
Dryland	4-10kg/ha
High rainfall/irrigation	18-25kg/ha
Seed treatment	Goldstrike XLR8®

- **Unparalleled for grazing tolerance**
- **A true-to-type grazing tolerant variety**
- **Bred specifically for Australian conditions**
- **High forage quality**

L56®

LUCERNE
:Medicago sativa

L56® is the ultimate dual-purpose lucerne variety for Australian conditions suiting a wide range of soil types and enterprises. With its low and broad crown and excellent pest and disease rating, L56® can produce high-quality hay or a persistent grazing paddock, depending on the grower's needs.

Dormancy	Semi-winter-dormant 5
Grazing tolerance	Low — X — High
Sowing rate	
Dryland	4-10kg/ha
High rainfall/irrigation	18-25kg/ha
Seed treatment	Goldstrike XLR8®

- **Exceptional seedling vigour**

  Reduced time to first cut, maximising profitability of lucerne stand from an early stage
- **Versatile all-rounder**

  Suitable for a wide range of enterprise systems including livestock grazing and fodder production on both dryland and irrigation, making it a versatile choice for farmers
- **Strong pest and disease rating**

  Forms the basis of a healthier plant stand that provides increased persistence across a range of environments
- **Ability to retain leaf under stressful conditions**

  Increases the production of fodder as well as the plant's ability to recover from either a defoliation event or prolonged periods of dry spells

Q63

LUCERNE

:Medicago sativa

Q63 is a high-yielding, premium-quality lucerne variety. With moderate winter activity, it offers strong production even outside the peak season. It recovers quickly from grazing and fodder use, thanks to its high leaf-to-stem ratio that enhances forage quality. Q63 also boasts excellent resistance to pests and diseases.

Quick Seed Facts

Dormancy
- Semi-winter-dormant 6

Sowing rate
- Dryland 4–10kg/ha
- High rainfall/irrigation 18–25kg/ha

Suitability
- Hay, silage, grazing

Grazing tolerance
Low — High

Seed treatment
- Goldstrike XLR8®

Autumn
- Ideal autumn sowing is in April while soil temperatures are still warm and theres soil moisture available

Spring
- Ideal spring sowing starts in late August when soil temperatures start to rise and there is available soil moisture

- **The benchmark for high yielding, semi-winter-dormant lucerne**

  Consistently producing up to 15% more dry matter than other standard varieties on the market
- **Exceptional seedling vigour**

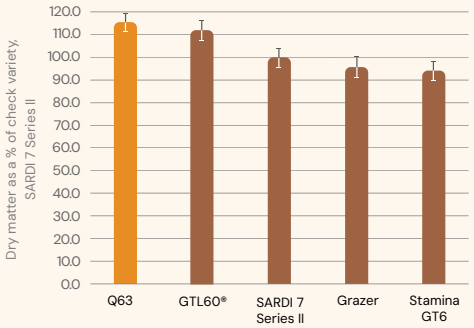
  Reduced time to first cut maximising profitability of lucerne stand from an early stage

  Increased flexibility in early herbicide application
- **Moderate winter activity**

  Higher growth rates coming out of the winter period than winter dormant varieties
- **Excellent leaf-to-stem ratio with a large leaf size**

  High-quality hay and silage production

Multi year, multi site, average dry matter production as a % of check variety



LSD: (P=0.05) = 1822.9 CV = 13.5 Mean = 19063.0

Figure 1 shows the dry matter production from trials based at Keith in SA from 2022–2024. The forage data demonstrates an increase in forage production of Q63, of up to 15% over the life of the trials when compared with the check variety.

Pest & disease rating

Spotted alfalfa aphid	R
Blue green aphid	MR
Pea aphid	HR
Phytophthora root rot	R
Anthracnose	R
Bacterial wilt	R
Fusarium wilt	R
Stem nematode	MR
Root knot nematode	R

Pest & disease rating scale:

High resistance	(HR)	=	> 50%
Resistance	(R)	=	31–50%
Moderate resistance	(MR)	=	15–30%
Low resistance	(LR)	=	7–14%
Susceptible	(S)	=	0–6%

Q63

LUCERNE

Withstands tough conditions

Extreme weather conditions have put Q63 lucerne to the test, but the new variety has risen to the challenge.

Producing chaff for a Queensland-wide market means quality is at the top of the list for Geoff and Angela Hose of Cressbrook Creek Chaff at Toogoolawah and they have been successfully growing Q75® lucerne for many years. “Growing high-quality lucerne consistently is the key to making a premium lucerne chaff product that end users are happy with,” Geoff said.

High leaf retention traits are a crucial factor in variety selection, ensuring lucerne quality is maintained during the frequent volatile weather conditions experienced in the northern regions of Australia. While Geoff has been pleased with the consistent and robust Q75®, he is committed to trialling new varieties with very high-quality traits, and in April 2021, the new Q63 was sown at 25kg/ha under irrigation.

The crop experienced very dry conditions during establishment through to the first and second cuts, then extreme rainfall conditions through November and December. Despite the tough conditions, Q63 produced the premium product Geoff and Angela require. “With the dry start, it seemed to hang on and yield really well considering the season,” Geoff explained. “We’re only on the third cut, but it’s certainly starting to show its true colours and responds well after being cut. When we are cutting it, we noticed heaps of leaf retention and it cuts really nice chaff.”

With a high pest and disease rating and high leaf-to-stem ratio, Q63 has ticked a few more boxes for Geoff.

Top
Geoff & Angela Hose

Bottom
A crop of AlfaGen lucerne

> *We noticed heaps of leaf retention and it cuts really nice chaff*

Geoff Hose
Toogoolawah, QLD

Above
Geoff Hose, Cressbrook Creek Chaff,
Toogoolawah, QLD

Q63

LUCERNE

Trials produced high-quality hay

Wade Alexander of Mundubbera in the North Burnett Region of Queensland owns and operates a beef cattle and intensive lucerne hay production enterprise.

He produces very high-quality hay into large square 8x4x3 bales targeting the intensive beef feedlot market and dairy producers.

Wade has been an avid user of the L56® lucerne variety for many years and has been awarded several prizes for hay quality through the Feed Central National Hay Quality Awards in past years.

Wade said, "A consistently high-quality hay end product is the key to my enterprise success, and this ensures that long-term market relationships are maintained well into the future."

Besides existing varieties, trialling new varieties on the farm is essential in evaluating their suitability to specific regional climatic conditions.

Q63 lucerne was sown in early May 2021 under irrigation and has displayed many of the key quality characteristics Wade is looking for in a new variety.

Q63 trials producing high-quality hay Wade said, "Key characteristics I look for are a fine stem with a lot of leaf present, high leaf retention, a prompt recovery after cutting is important, and a strong insect and disease tolerance is desired."

Wade said in its first year in production, "It looks great and has established very well, and it is currently producing a very high-quality bale with excellent yields."

Top
A crop of Q63

Bottom
Wade Alexander, Mundubbera, QLD

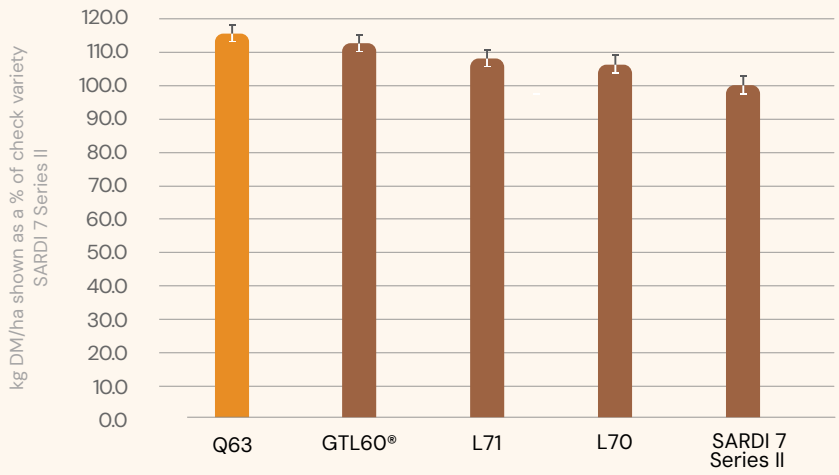
> *"It looks great and has established very well, and it is currently producing a very high-quality bale with excellent yields"*
>
> Wade Alexander
> Mundubbera, QLD

New winter genetics out perform current varieties

The AlfaGen Seeds lucerne breeding program has a long history of developing winter active varieties with outstanding forage yields and quality, with robust pest and disease packages. The current commercial winter active portfolio available for customers is no exception.

Over the last five years, the AlfaGen lucerne breeding team has developed new lucerne varieties in both the 6 and 7 dormancy ranges that consistently outperform the current commercial varieties. The graph below shows that customers can produce up to an extra 15% of dry matter, growing AlfaGen elite varieties, based in the extensive multi-season and multi-site evaluation program.

Multi year, multi site, average dry matter production as a % of check variety



LSD: (P=0.05) = 1822.9 CV = 13.5 Mean = 19063.0

Grazing tolerant lucerne selection trial

PENFIELD RESEARCH STATION
TRIAL SOWN 14/09/2011 | GRAZED 24/11/2011 – 23/11/2016

AlfaGen Seeds has taken the term 'grazing tolerant' very seriously with its selection of new lucerne material. The ability to select plant germplasm through a five-year intensive grazing trial has proven critical to giving farmers confidence in new lines coming through the AlfaGen lucerne breeding program. The strength of this trialling model will be replicated in the future with more selections being made with this key grazing tolerance trait.

The trial protocol was established in conjunction with NSW DPI and IP Australia to give a measure of true grazing tolerance. After the lucerne was established, it was grazed every three weeks (or when grazing was required) to a residual height of about 30 millimetres.

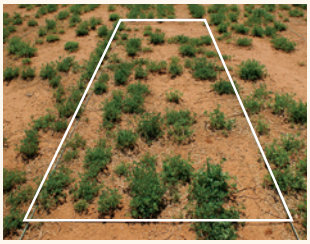
Approximately 20 Merino wethers were used for grazing the trial each time, this was the number of animals adequate to graze the trial down within at least a three to four day period so we could manage frequent grazing events but not expose the lucerne to extended periods of set stocking.

The basis of this grazing management was to make sure the lucerne was put under frequent grazing pressure but not deliberately set stocked. In the first three-year period, the trial was grazed 32 times, and in the recent two-year period, was grazed 18 times.

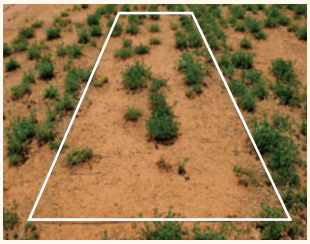
Plant counts were taken initially, and results have been measured based on the percentage of residual plant counts remaining after the three and five-year periods.

Initially, the trial was established at a dryland sowing rate of four kilograms per hectare, resulting in an average starting plant count of 37 plants per metre square, which suited our target of 30-40 plants per metre square based on our average annual 420 millimetres rainfall.

The results shown in the graph on this page now indicate the updated results after five years of the trial period, which have shown some significant differences in the performance of varieties, and quite a variation in the results that were seen after the three year period was measured. In particular, some of the highly winter active material has distinctly dropped off in the recent two years.

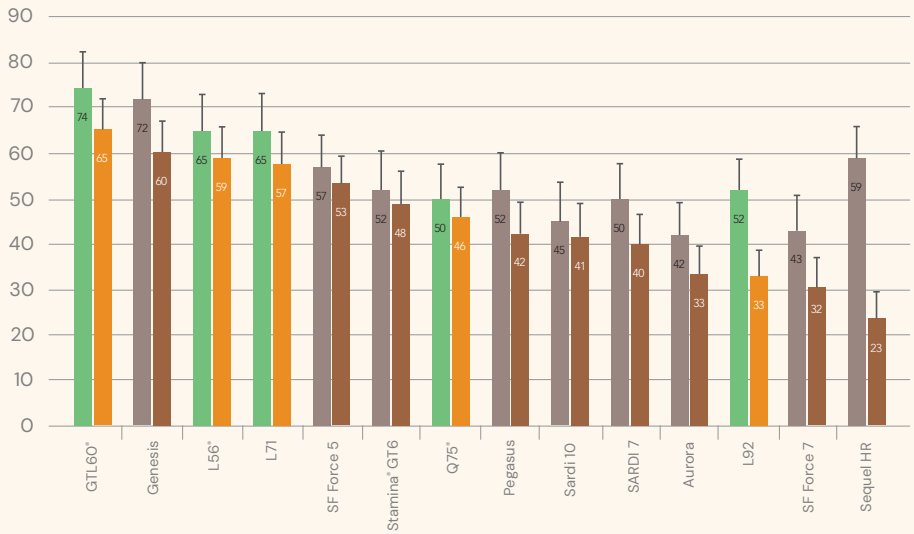


GTL60® Lucerne



Stamina® GT6

Percentage of residual plants after three and five years of grazing



3 year count
November, 2014
Av.5%LSD=22.1

5 year count
November, 2016
Av.5%LSD=18.7

Lucerne stands are grazed to restrict flowering over a three year period to increase pressure on plants.

Q31®

LUCERNE

:Medicago sativa

Q31® lucerne sets the benchmark for hay quality in the Australian market. It is a winter dormant variety with excellent leaf retention and large leaf size. Q31® lucerne is a high-quality option with flexible cutting times. Its increased tillering ability and fine stems make it a perfect option in premium-grade hay, chaff, and silage systems.

Quick Seed Facts

Dormancy
- Winter dormant 3

Sowing rate
- Dryland 4-10kg/ha
- High rainfall/irrigation 18-25kg/ha

Suitability
- Grazing, hay, silage

Grazing tolerance
Low — High

Seed treatment
- Goldstrike XLR8®

Autumn
- Ideal autumn sowing is in April while soil temperatures are still warm and theres soil moisture available

Spring
- Ideal spring sowing starts in late August when soil temperatures start to rise and there is available soil moisture

- **High leaf to stem ratio**

  For premium quality hay and silage production
- **Winter dormant**

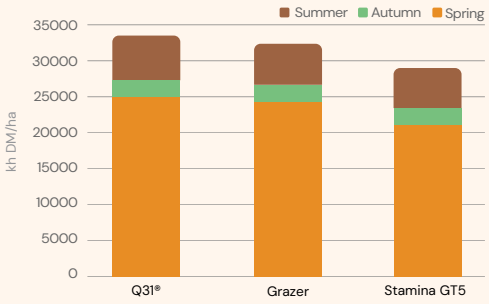
  Increased flexibility in cutting times
- **Low, broad crown**

  Improved tiller production delivering finer stems and higher quality hay/chaff
- **Strong summer production**

  Larger, less frequent hay cuts through critical hay production period

  Decreasing mechanical traffic – reducing cost of hay production

Forage yield production kg DM/ha Keith SA 2023-2024



LSD (P=0.05) = 1801.9 CV = 15.47 Mean = 16476

Figure 1 shows the dry matter production from trials based at Keith in SA from 2023-2024. The forage data demonstrates an increase in forage production of Q31® when compared with other commercial varieties. This trial is still ongoing.

Pest & disease rating

Spotted alfalfa aphid: R	Bacterial wilt: HR
Blue green aphid: MR	Fusarium wilt: R
Pea aphid: MR	Stem nematode: HR
Phytophthora root rot: HR	Root knot nematode: HR
Anthracnose: HR	

Pest & disease rating scale:

High resistance	(HR)	=	> 50%	Low resistance	(LR)	=	7-14%
Resistance	(R)	=	31-50%	Susceptible	(S)	=	0-6%
Moderate resistance	(MR)	=	15-30%				

Q31®

LUCERNE

Produces hay in a difficult season

Grazier and prime hay producer Warren Park, located in Hunter Valley, NSW found the 2021 – 2022 hay season difficult. But not because of a lack of rain.

"We've only probably made 20% of our usual amount of prime hay so far this season," remarked Warren. "It's been a fabulous season in terms of rain, but the weather has not been conducive to hay production. We've avoided cutting, looked for a forecast with a clear run, and still had rain once we've cut."

Targeting the small bale prime hay market, Warren uses a combination of Q31® and L56® lucerne, growing about 105 hectares and 50 hectares respectively.

"I'm glad I've been using the Q31® for hay this season. If it had been a 7 (dormancy), it would be a purple stalky mess." Warren added. The features of Q31® that have most benefited him this season is the longer cutting interval and the characteristics of finer stems with more leaf being retained. "Like I said, we've tried to pick out windows of fine weather, so some cuts have been much later than ideal. While it may not be the best hay I've ever made, it's far better quality than if I was using another variety."

Warren also uses lucerne as a base component for many of his grazing pastures, sometimes extending the life of existing stands with the addition of pasture species or fodder production by direct drilling oats in autumn for cutting in spring.

> *"We've benefited greatly this season from the longer cutting intervals of Q31®"*

Warren Park

Hunter Valley, NSW

Top
A Q31® based multi-species paddock

Bottom
Q31® stand recovering after cutting

Dormant & semi-winter-dormant lucerne

Dormancy characteristics	
Growth	95% summer, 5% winter
Cutting schedule	38–42 days
Number of cuts	4–5 per season
Crown type	Broad with crown below ground
Utilisation	Specialist (hay/silage/chaff) Long-term hay or pasture mix High rainfall or irrigation
Stand life	7+ years with good management

Lucerne plant characteristic of dormant/ semi-winter-dormant varieties, demonstrating their subterranean crown

Recommended varieties

GTL60®, Q63®, L56®, Q31

Winter active lucerne

Dormancy characteristics	
Growth	90% summer, 10% winter
Cutting schedule	33–35 days
Number of cuts	5–7 per season
Crown type	Broader & lower crown
Utilisation	Dual purpose (grazing/hay) Longer-term pasture or hay Dryland and irrigation
Stand life	5–7 years with good management

Lucerne plant characteristic of winter active varieties, expressing low broad crown

Recommended varieties

L70, L71, Q75®

Highly winter active lucerne

Dormancy characteristics	
Growth	80% summer, 20% winter
Cutting schedule	25–28 days
Number of cuts	7–10 per season
Crown type	Narrow & higher crown
Utilisation	Dual purpose (grazing/hay) Short-term cropping rotation Dryland and irrigation
Stand life	3–4 years with good management

Lucerne plant characteristic of highly winter active varieties, showing the narrower and slightly raised crowns

Recommended varieties

L97, L91®

Pests and diseases

Phytophthora root rot
:Phytophthora medicaginis

DESCRIPTION: Plants turn yellow, wilt and die. Areas of light brown discolouration up to five centimetres long occur on the taproot up to 30 centimetres below the crown. The Taproot below the discoloured area will rot away completely.

INCIDENCE: Occurs in Australia, particularly in heavy and/or poorly drained soils and wet conditions. The disease can be severe, killing large numbers of seedlings, scattered plants or large patches in mature seeds. In irrigated stands, plants can survive. Water availability keeps the taproots immediately below the crown alive, but forage yields are reduced.

SPREAD: The fungus spreads rapidly in water over considerable distances.

MANAGEMENT: Use resistant varieties and spell the paddock from lucerne. Do not rotate with chickpeas. Avoid waterlogging irrigated stands on heavy soils.

Colletotrichum crown rot or stem anthracnose
:Colletotichum trifolii

DESCRIPTION: Brown-black spots on the stems develop into well defined boat shaped lesions that are up to 25 millimetres long, dark around the edges with pale centres, and covered in raised dark spots.

The fungus can also enter the crown, causing a blue-black discolouration of five to eight centimetres into the taproot. In mature stands, the dead stems are white or straw coloured with a shepherd's crook appearance. Plant death occurs gradually.

INCIDENCE: Occurs throughout Australia in warm environments with high humidity. It is more severe from late summer to autumn. It is less likely in drier and cooler climates.

SPREAD: Spores spread in warm, wet weather from plant debris and from the crown of infected plants by raindrop splash and harvesting equipment.

MANAGEMENT: Use disease resistant varieties and, if crown rot and anthracnose have been severe, rotate the crop every three years with non-host plants.

Pea aphid (PA)
:Acyrthosiphon pisum

DESCRIPTION: Green in colour, though some may be yellow or pink. They are four to five millimetres long with dark bands around the antennae and spine-like projections on both sides at the rear of their bodies. Adults may have wings. Nymphs are smaller and wingless.

DAMAGE: PA sucks sap from the leaves causing wilting, stunting and curling, and odd-shaped plants. The top leaves often turn light green while the lower turn yellow and die. Honeydew excreted by PA makes foliage sticky, affecting hay and pasture quality. PA is a significant carrier of the alfalfa mosaic virus.

INCIDENCE: Common in southern Australia, Western Australia and New South Wales during dry conditions in spring and autumn, although economic levels of damage are rare.

MANAGEMENT: Monitor beneficial insects. Irrigate or graze the stand to reduce PA numbers. In irrigated hay stands, use insecticides if the infestation is heavy.

Fusarium wilt
:Fusarium oxysporum f.Sp.Medicaginis

DESCRIPTION: Initially, plants are stunted with wilted shoots and yellow leaves. The infection then bleaches the leaves and stems, eventually causing plant death. Dark red-brown streaks develop in a layer under the bark at the base of the stem forming a reddish-brown ring in the centre of the root.

INCIDENCE: Fusarium wilt is not common. The Fusarium fungus is widespread but rarely causes wilt. Fusarium wilt has not been identified in New South Wales.

SPREAD: The fungus survives for long periods in decaying plants. It invades small roots or wounds in the taproot during warm, wet weather.

MANAGEMENT: Controlled by crop rotation and resistant varieties.

Stem nematode
:Ditylenchus dipsaci

DESCRIPTION: Microscopic eelworms are individually difficult to see with the naked eye. Sometimes they mass on or just below the surface to form visible "eel-worm wool." These can survive desiccation and be transported in hay to start new infestations.

DAMAGE: Plants are dwarfed and distorted, with swollen shoots. Leaves are distorted and clustered towards the ends of stems. Plants die in patches.

INCIDENCE: Occur in southern Australia, common in irrigated stands on river flats, with the greatest severity in the spring.

MANAGEMENT: Sow resistant varieties, plough out badly infested stands and practice crop rotation.

Bacterial wilt
:Clavibacter michiganensis ssp.Insidiosus

DESCRIPTION: Yellow and stunted plants with small leaves are scattered through the stand. The inner bark of the taproot is white, while the exposed root centre is yellowish.

INCIDENCE: Common in southern Australia but has not been reported in the southeast of South Australia. It often occurs in autumn in irrigated stands. It is not found in the dry, inland subtropics of Queensland and northern New South Wales.

SPREAD: The bacteria persist in soil for more than ten years. The disease is spread by stem nematodes and through hay and machinery.

MANAGEMENT: Sow certified seed of resistant varieties.

Photo supplied by Cesar Australia Pty Ltd.
Photographer: Andrew Weeks

Spotted alfalfa aphid (saa)
:Therioaphis trifolii

DESCRIPTION: Adults are pale yellowish-green, two millimetres long, with six or more rows of black spots along their backs. Adults may have wings. Nymphs are smaller and wingless.

DAMAGE: Adults and nymphs suck sap from the stems or the undersides of lower leaves. Before that, leaf veins become yellow or white, and the leaves curl and drop off. SAA inject a toxin that can kill seedlings and mature plants.

Honeydew excreted by SAA causes foliage to become sticky and develop a black, sooty mould.

INCIDENCE: Occur throughout Australia in dry conditions, mainly in the spring and autumn.

MANAGEMENT: Plant resistant varieties. Monitor beneficial insects. Irrigate or graze the stand to reduce SAA numbers. In irrigated hay stands, use insecticides if the infestation is heavy.

Photo supplied by Cesar Australia Pty Ltd.
Photographer: Andrew Weeks

Bluegreen aphid (bga)
:Acyrthosiphon kondoi

DESCRIPTION: Adults vary from pale green-grey to dark green-blue and are three millimetres long and have tube-like projections on either side at the rear of their bodies. Adults may have wings. Nymphs are smaller and wingless.

DAMAGE: Adults and nymphs suck sap from the leaves and stems at the growing points, causing shortened internodes between the leaves at the top of each stem, stunted plants, leaf curling, and leaf yellowing. Honeydew excreted by BGA makes the foliage sticky and affects hay and pasture quality. BGA does not kill mature plants.

INCIDENCE: Occur throughout Australia, and most active during the cooler months, particularly dry conditions.

MANAGEMENT: Plant resistant varieties. Monitor beneficial insects. Irrigate or graze the stand to reduce BGA numbers. In irrigated hay stands, use insecticides if the infestation is heavy.

Photos supplied by Queensland Department of Primary Industries.

Pests and diseases (continued)

Measuring the resistance of major pests

Resistance level	Ultra high resistance HR+	High resistance HR	Resistance R	Moderate resistance MR	Low resistance LR	Susceptible S	No data ND
Plant resistance	= 50 - 85%	= >50%	= 31 - 50%	= 15 - 30%	= 7 - 14%	= 0 - 6%	= No Data

Multiple pest and disease resistance chart

AlfaGen Seeds lucerne varieties stand out in the Australian marketplace with superior pest and disease ratings.

Variety	Winter activity	Spotted alfalfa aphid	Blue green aphid	Pea aphid	Phytophthora root rot	Anthracnose	Bacterial wilt	Fusarium wilt	Stem nematode	Root knot nematode
Highly winter active										
L97	9	HR	R	R	R	LR	MR	R	MR	HR
L91®	9	HR	HR	HR	HR	HR	R	HR	R	ND
Sequel	9	R	R	ND	MR	R	ND	ND	MR	ND
Winter active										
L70	7	HR	HR	ND	R	R	R	ND	R	ND
L71	7	MR	MR	ND	R	R	ND	ND	ND	ND
Q75®	7	HR	R	HR	HR	HR	MR	HR	R	R
Aurora	6	HR	HR	ND	R	MR	LR	ND	R	ND
Dormant & Semi-winter-dormant										
GTL60®	6	HR	HR	ND	HR	HR	HR	ND	R	ND
Q63	6	R	MR	HR	R	R	R	R	MR	R
L56®	5	HR	HR	HR	HR+	HR	HR	HR	HR	HR
Q31®	3	R	MR	MR	HR	HR	HR	R	HR	HR

Lucerne born and bred in Australian conditions

By basing our global lucerne breeding program right here in Australia, we ensure a real local focus for the products we develop, and innovation for the right reasons —your farm's success.

We use this homegrown advantage to develop new lucerne varieties specifically adapted to Australian conditions. With a complete dormancy range, we offer a product for every unique farming situation, ensuring you can optimise yield and performance for your environment.

Lucerne best management practices

Paddock selection and preparation

Lucerne can be grown on a range of soils from deep sands to heavy clays. For best yield and persistence, select paddocks with:

- Optimal range soil pH(CaCl2) 5.0 - 7.5
- Good natural slopes (for good drainage within the paddock)
- Adequate fertility (nutrient levels)

A surface and subsoil soil test is recommended to determine the suitability for lucerne. Soil acidity affects every stage of lucerne production, from seedling establishment to stand survival.

Incorporate lime three to six months before sowing where topsoil pH(CaCl2) is below 5.0. Avoid soils with acid subsoils or high levels of subsoil exchangeable aluminium (above five percent). Apply gypsum to sodic soils (exchangeable sodium levels above six percent) to overcome surface crusting problems. Gypsum needs to be applied several months before sowing. Use deep ripping to break hard layers in the subsoil and to increase gypsum penetration to depth. Plan for weed control prior to and during the cropping phase to reduce the density and seed-set of major weeds. Lucerne is sensitive to herbicide residue problems.

The main carryover problems are associated with the triazines (e.g. simazine and atrazine), imidazolinones (e.g. Midas®, OnDuty®, Spinnaker® following dry seasons) and sulfonylurea herbicides (e.g. Glean®, Ally®, Logran® on high pH soils).

Test the soil using pots over summer or delay planting lucerne for at least one year after application of these residual herbicide groups.

Before sowing

If weeds are present before sowing, use knockdown herbicides. At sowing pre-emergent herbicides such as Trifluralin should be applied in autumn, between four weeks and seven days, and in spring, between four weeks and three days, before sowing occurs. These herbicides are a cheap option to control winter weeds (including annual ryegrass, wild oats, fumitory, annual phalaris, and wireweed). Maintain adequate stubble cover over summer but slash or late burn stubble before sowing. Use an appropriate cropping phase and/or sprays to reduce egg-laying mite populations in the growing season before lucerne establishment.
Monitor paddocks for soil-dwelling pests such as false wireworm and pink cutworm. Look for adequate soil moisture to 20 centimetres at the time of sowing. Pre-irrigation (where possible) and sowing into moisture is the best practice for lucerne establishment.

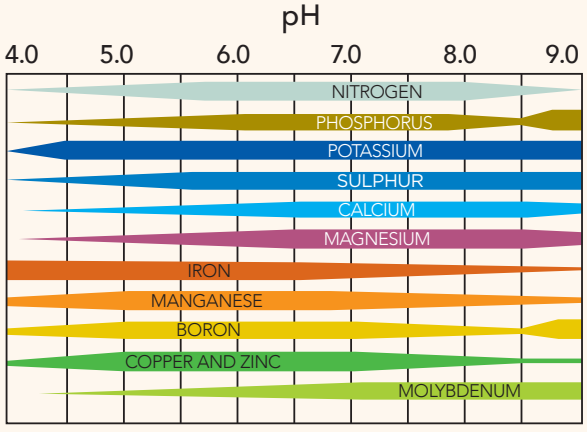
Fertiliser

Phosphorus is vital for early seedling growth and strong root development for better plant survival. Sow lucerne with a minimum of 15 - 20 units per hectare (dryland) and 20 - 40 units per hectare (irrigation). Banding fertiliser two to three centimetres below the seed is best. Molybdenum added to the fertiliser ensures good nodulation for greater nitrogen fixation by the lucerne. Lookout for adequate levels of sulphur, potassium, boron, and zinc.

Top-dress with P and K

After the seeding year, annual applications of Phosphorus (P) and Potassium (K) helps maintain stands and boost yields. Lucerne is a heavy user of soil nutrients, especially K.
The incidence of nutrient deficiencies of P and K is increasing, particularly in paddocks with a long-term history of cropping (without adequate fertiliser) or hay production. P deficient lucerne has fine, spindly stems; the leaves become narrow and often turn purple. A deficiency of K can reduce yield and is essential for efficient nodulation, plant health (especially leaf disease and retention under stress), stand persistence, and winter hardiness. White spotting of the leaf margins is a common characteristic of K deficiency in lucerne. A good fertiliser rule of thumb is to top-dress annually with 10 - 20 kilograms per hectare or after the first cutting (but before regrowth starts) with six kilograms of P and 25 kilograms of K per tonne of forage harvested during the season. Always remove weeds before top-dressing.

Use soil test results and strip tests to determine actual application rates needed for adequate fertility levels.



Available nutrients in relation to pH

Weed control

Management practices that maximise lucerne growth will normally suppress weeds. The aim of post-emergent weed control in established lucerne is to suppress the weeds from excessive competition or setting seed and not necessarily eradicate all the weeds.

Removing grasses and other weeds in mid-winter with a selective herbicide (winter cleaning) improves spring production and quality extends the useful life of the stand, and increases the benefit for the following grain crop.

Sowing technique

Lucerne should be sown into a level, firm, and slightly cloddy seedbed. A separate small seeds box and narrow points allow accurate seed placement with reduced soil disturbance. Plant lucerne paddocks first in your cropping program. If stand density is patchy and below ten plants (dryland) or 40 plants (irrigation), consider stand removal and re-seeding.

Lucerne is suited to under-sowing with winter crops or direct drilling into crop stubble after the grain harvest.
The seeding rate of the cover crop should be reduced by 50 percent and sown in skip (alternate) rows. A cover crop can help defray establishment costs and reduce soil erosion or wind sandblasting of lucerne seedlings on sand hills and sandy flats.

Seed depth and lucerne emergence

Depth (cm)	Percentage emergence		
	Sand	Loam	Clay
1.25cm (0.5 inches)	71	59	53
2.50cm (1.0 inches)	73	55	48
3.75cm (1.5 inches)	55	31	28
5.0cm (2.0 inches)	40	16	13

Seeding rates (kg/ha) and timing

Variety	Marginal dryland	Good dryland and tablelands	Irrigation and coast	Seeding time
L70, L71, Q75®, L91®, L97	2 - 4	4 - 8	10 - 20	Autumn, winter, spring
L56®, GTL60®, Q63	1 - 3	4 - 6	10 - 20	Autumn, spring
Q31®	1 - 3	4 - 6	10 - 20	Early autumn, spring

Guide to seeding rates of cover crops and companion species

Cover crops		Companion species	
Barley	20 - 30kg/ha	Sub clover and medics	2 - 3kg/ha
Lupins	40 - 50kg/ha	Phalaris	1kg/ha
Oats	25 - 35kg/ha	Cocksfoot	1 - 3kg/ha
Wheat	30 - 45kg/ha	Fescue	2 - 3kg/ha

Optimum plant populations per m²

Established plants per square metre (minimum density highlighted)

Situation	Cover crops or pasture mixes	Sown alone
Marginal dryland (<400mm annual rainfall)	5 - 15	10 - 15
Good dryland (400 - 600mm annual rainfall)	10 - 15	15 - 25
Very good dryland/tablelands (over 600mm annual rainfall cold climate	15 - 25	25 - 40
High rainfall/coastal (600mm annual rainfall warm climate)	25 - 40	40 - 60
Irrigation	Not recommended	60 - 130

Early management

Seed treatment or bare earth emergence spray for red-legged earth mites will pay dividends in the long run. Monitor seedlings carefully for aphids and use aphid-resistant varieties. Graze leniently the first time when the young stand is at least 20cm high and well anchored. Lucerne established under cover crops should be allowed to flower before first cut or grazing.

Grazing management

Rotational grazing is the preferred management system for lucerne. Grazing periods should be no longer than two weeks, followed by a three to six week rest period. This practice allows the plants to re-grow and replenish root reserves.

Larger mobs that fit the grazing unit (paddock size) allow quicker grazing. Alternatively, high stocking rates are greatly assisted with strip grazing and electric fencing. Changing to August lambing gives better utilisation of lucerne in pastures.

Maintain flexibility with stocking rates and grazing management. Conserve excess feed as hay or silage to fill feed gaps or provide additional income. Rotational grazing with all varieties during summer and autumn will maintain production and persistence at a high level.

Avoid grazing waterlogged paddocks because soil compaction and trampling will reduce yield and lead to poor persistence. Set stocking during spring in good years will not harm the stand and may reduce cattle bloat risk. To optimise stand longevity, allow lucerne to reach mid-flowering once during the year.

Too frequent cutting or set stocking for extended periods reduces overall yields, and reduces vigour, which allows weed invasion and ultimately results in the death of plants.

Irrigation

For high production of lucerne, irrigation management should aim to avoid any moisture stress. When water is in short supply, it is possible to extend the irrigation interval more than shallow rooted pasture to maintain lower levels of production.

Irrigation layout and practice should ensure water penetrates at least 80 to 100cm and permit drainage within eight hours to minimise waterlogging. Do not irrigate immediately after hay is harvested to reduce the risk of scalding, particularly during summer. Time the final irrigation to allow adequate dry-down of the soil surface to prevent soil compaction by harvesting machinery.

Sub-surface drip irrigation

Low volume emitters, moulded onto the internal wall of a polyethylene tube and buried 200mm to 300mm below the soil surface is recognised as the most efficient means of irrigating lucerne (95% WUE) and is becoming increasingly popular as water availability declines and the cost of water increases. These sub-surface drip irrigation laterals are spaced across the paddock at distances from 0.3 to 0.8m apart, depending on soil and crop requirements. As the water (and fertiliser) is delivered right to the root zone (where it is needed) in measurable and adjustable quantities, it not only saves water but has a positive effect on plant productivity, longevity and health.

As opposed to flood and spray irrigation, excess water does not collect on the surface, and hence growers can manage their cutting times more effectively, there is less weed growth, and no compaction is caused by harvesting equipment. Sub-surface drip irrigation also requires very little labour to operate and maintain.

Livestock health

Frequent observation of stock on lucerne is essential. Cattle grazing lucerne pastures during the bloat season (winter and spring) are susceptible to bloat. To manage bloat, use high stocking rates and avoid placing hungry stock on immature lucerne.

Allowing stock access to grass, stubble, or hay while grazing lucerne and using bloat oil and/or rumen capsules will effectively reduce the incidence of bloat. Vaccinate stock with "5 in 1" to prevent pulpy kidney, which is sometimes confused with bloat. Red gut can affect sheep and lambs that are grazing pure stands of lucerne during similar weather conditions, resulting in bloat. At the first sign of red gut (sudden death) affected flocks should be removed immediately. Manage red gut the way you would bloat for cattle.

Bloat reduction option

AlfaGen SOWsmart® Bloat Fighter Blend has been specially designed as a pasture blend option to reduce the instance of bloat on straight lucerne-based pastures. This mix has incorporated two lucerne companion species with zulumax arrowleaf clover and balance chicory to deliver a proven proven anti-bloating.

Haymaking

Before adopting a haymaking enterprise, organise a market in advance and consistently meet market requirements. Generally, aim for high quality and high yields to optimise animal performance and long-term profitability. Mechanical field losses during haymaking can be large (20 - 40%). Aim to mow early in the day and minimise handling during the curing process.

Chaff varietal selection

The traditional chaff market has been based around the horse feed industry. Lucerne has been a sought after product to meet the market requirements. When selecting a lucerne variety to target chaff quality, we look for material with a high leaf-to-stem ratio. Four AlfaGen lucerne varieties can be utilised, Q63, L56® or Q31® lucerne - semi winter dormant lines. The management of each line is essential to achieving the desired quality. With winter active lines, it is important to cut in the earlier stage of maturity to maintain maximum leaf compared to the stem. As the lucerne plant approaches budding, the stem elongates and thickens, and the leaf-to-stem ratio drops. With winter active varieties, the cutting and regrowth cycle is much shorter; therefore, the window of opportunity to cut at the right time is much narrower. However, with semi-winter dormant varieties, the regrowth cycle and time to maturity are much longer, giving more flexibility in cutting time to achieve the highest quality across a high percentage of cuts.

Nutrient removal

To maintain the health of lucerne stands, replace soil nutrients removed in hay. Soil and leaf tissue tests conducted annually in early spring help ensure other nutrients are adequate.

Nutrient removal

Nutrients	Amount removed in 1 DM of hay	Seasonally in 15 DM t/ha or hay
Nitrogen (N)	20 - 30kg	375kg
Phosphorus (P)	2 - 3kg	37kg
Potassium (K)	15 - 20kg	262kg
Sulphur (S)	2 - 4kg	45kg
Calcium (Ca)	13 - 17kg	225kg
Magnesium (Mg)	3 - 4kg	52kg

Source: university of nevada-reno. All values on a dry-matter basis.
Intake = % of body weight, cp = % crude protein, adf = % acid detergent fibre, ddm = % digestible dry matter.

Re-sowing and crop rotation

High-producing lucerne will generally require re-sowing after four to seven years. Winter active stands will often decline sooner than winter dormant ones. Thickening up an old and thinning lucerne stand fails more than it succeeds. It is best practice to completely remove old lucerne plants and allow at least three weeks between herbicide application and re-sowing. There are significant benefits in rotating lucerne paddocks with winter cereal or canola crops to control weeds, use soil nitrogen, break disease and insect cycles, manage in-crop herbicide resistance, and increase whole farm profits.

Measuring forage quality

Weight gain effect based on feed quality (180 to 275kg steer calves)

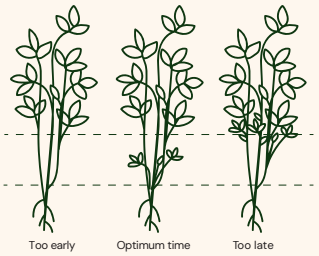
Nutrients	Pre-bud	Bud	Early	Full
CP	23	20	17	14
ADF	21	26	34	43
DDM	73	69	62	55
Intake	3.5	3	2.5	2
Daily Gain (kgs)	1	0.86	0.55	0.36

Cutting and grazing tips

Variety	Recommended grazing practice/ number of paddocks	Recommended cutting interval
L70, L71, Q75®, L91®, L97	Strict rotation/6 - 7 paddock rotation	25 - 28 days
L56®, GTL60®, Q63	Flexible grazing period (up to 3 weeks)/3 - 4 paddock rotation	33 - 35 days
Q31®	Flexible grazing period (up to 3 weeks)/3 - 4 paddock rotation	38 - 42 days

Bud development

The appearance of two centimetre long shoots from the crown on just over half the plants are the most reliable indicator of when to cut or graze for maximum productivity and persistence of lucerne.



Seed treatment options

At AlfaGen Seeds, we're dedicated to embracing new technology, continually enhancing our range to deliver cutting-edge solutions and superior performance in our leading forage products.

Goldstrike®

AlfaGen Seeds Goldstrike® is a high-quality seed coating with innovative technology which supports the crop during establishment and throughout the season, allowing for stronger and more vigorous plant growth. With Goldstrike®, farmers can be assured of a reliable establishment and higher yields of top-quality forage.

Goldstrike® for legumes

Every seed receives a micro-nutrient package and rhizobia inoculant, and Apron® XL fungicide is applied to lucerne and sub clover.

The rhizobia inoculation helps to improve nitrogen fixation and nutrient uptake, while the micronutrient package provides additional essential nutrients for optimal plant growth.

The premium fungicide, applied to lucerne and sub clover, helps to protect the seeds from soil-borne diseases during the critical early stages of plant growth.

XLR8®

XLR8® seed treatment is a film coating of Poncho® Plus insecticide on every seed, designed to give seedlings the best possible start. Poncho® Plus represents a significant advancement in seed treatments, offering broader pest control than any other insecticidal option. Its two powerful active ingredients protect eight crop and pasture types from a range of damaging pests for up to four weeks after sowing.

All AlfaGen Seeds proprietary lucerne products come with Goldstrike XLR8® seed treatment

Goldstrike®

Insecticide comparison chart

		Seed treatment			Bare seed and foliar spray		
		XLR8® broadleaf pasture	XLR8® grass pasture	Gaucho®	Chlorpyrifos	Ground spray dimethoate	SP foliar
Registered claims benefits	Redlegged earth mite	✓	✓	✓	✓	✓	✓
	Lucerne flea	✓	✓		✓	✓	
	Blue oat mite	✓	✓	✓	✓	✓	✓
	Cutworm	✓	✓		✓		
	Yellowheaded cockchafer		✓				
	African black beetle		✓				
Benefits	May offer Stress Shield™ benefits	✓	✓	✓			
	Up to four weeks systemic protection for emerging seedlings	✓	✓	✓			
	Protection against some soil pests	✓	✓		✓		
	Low impact on beneficial species	✓	✓	✓			
	Targeted chemical placement	✓	✓	✓			

We're here to help you grow

For technical advice, please contact your local Territory Manager

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Plant with confidence

ESTABLISHMENT GUARANTEE

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