



Upper Murray Seeds®
Sow much better

Lucerne Guide

Silverado and Silverosa GT



Australian Seed Federation
SOWING SEEDS



Close up of lucerne flowers.



Lucerne produces significant volumes of high quality, out-of-season feed.



Travis Thompson is really impressed with his high performance, dual purpose Silverosa GT.



Veteran lucerne grower Brad Forsyth shown here in a 5-year-old crop of Silverado which is highly productive despite being flooded twice.

Silverado & Silverosa GT: The best lucerne you can get

Australian lucerne producers can do so much better when they grow the outstanding 'Silver' varieties of lucerne, specifically bred in Australia to meet the unique demands of our environment and management practices.

The 'Silver' lucernes were bred by Dr Ian Kaehne to create truly multi-purpose plants, drawing on his 40-plus years' experience in lucerne science and breeding. The phenomenal results achieved by Silverado and Silverosa GT confirm that these varieties can be grown in most locations in Australia and they will perform beyond expectations.

Dr Kaehne bred Silverado to provide multiple benefits: premium quality lucerne with inbuilt, broad-spectrum disease and pest resistance, very high winter activity, more tolerance to grazing than other highly winter-active varieties, rapid regrowth and superior heat and cold tolerance. Silverado is truly multi-purpose and can be used for both hay and grazing.

Dr Kaehne's patented Silverosa GT has set another standard in multi-purpose lucerne because it is extremely persistent and disease-resistant, very grazing tolerant and salt tolerant. Silverosa GT is a winter-active variety which provides premium quality feed with high levels of CP and ME.

Dr Kaehne explains: "I started breeding Silverosa GT by combining salt tolerance, grazing tolerance, disease resistance, pest resistance and selecting under extremely saline field and glasshouse conditions. Silverosa GT has become a benchmark lucerne like Silverado."

Travis Thompson needs a high volumes of top quality feed every day to keep his herd of more than 500 cows on an even plain of nutrition at Binnowie Dairy near Wagga Wagga, NSW.

"Upper Murray Seeds advised me to sow 27ha of Silverosa GT under a centre pivot in spring and I couldn't be happier with the result. The following summer was brutally hot and dry but the Silverosa GT did a fantastic job of producing top quality hay for the cows' daily feed mix. I'm impressed with the amount of leaf on the plant and the soft stalks. We grazed the stand through until spring when it was again used to supply hay to the dairy."

Brad Forsyth, a lucerne grower for over 30 years, used to grow L55 and L56 and other public varieties for both silage and hay. Since being impressed by trials of the 'Silver' varieties, Brad has grown Silverado for the past 7 years and Silverosa GT for 4 years on his property near Monto, QLD.

"I currently have 100ha of Silverosa GT and Silverado under centre pivots. Both varieties have good leaf-to-stem ratio and hold their leaf if cutting is delayed due to unstable weather, whereas other varieties lose their leaf. I have found both to be very persistent and they generally provide 9-10 cuts per year.

"Flooding is a risk on my property. My first Silverado stand was ploughed out 12 months after the paddock flooded whereas other varieties died instantly after the flood. Another stand of Silverado sown in 2012 recovered from inundation in 2013 and 2015 and I expect it to be productive for a few more years.

"Over 3 years, the UMS lucernes have averaged annual yields of 23.4 t/ha DM (Silverado), and 20.7 t/ha DM (Silverosa GT), with excellent hay quality because of no real effects from pests or diseases and a high leaf-to-stem ratio. My 'Silver' lucernes have year-round growth and are the best performers ever!"



Plant Breeders Rights

SILVERADO and SILVEROSA GT are protected by Plant Breeder's Rights. Unauthorised commercial propagation or any sale, conditioning, export, import or stocking of propagating material of these varieties is an infringement under the Plant Breeder's Rights Act, 1994. SILVEROSA GT is protected under Patent.



WINTER ACTIVITY 9



Overview

Silverado is the benchmark winter-active lucerne for quality of production and stand life.

- Highly persistent in dryland and irrigation
- Highly winter active
- Premium quality combined with high production rates
- Resistant to leaf, stem and crown diseases
- Resistant to root-rot, root lesion and stem nematodes
- Highly aphid resistant
- Rapid regrowth after grazing and cutting
- Tolerates prolonged periods of set-stocking
- Superior cold and heat tolerance

Plant Characteristics

- Erect growth habit
- Excellent mature leaf:stem ratio



Silverado showing its strength in early spring under colder than normal conditions. Note strong leaf density from top to bottom and the traditional fine stem.

Disease or Pest Resistance Profile

Leaf and Stem Diseases	Silverado	Silverosa GT
Stemphylium Leaf Spot	Resistant	Resistant
Pepperspot (Leptosphaerulina)	Resistant	Resistant
Rust	Highly Resistant	Highly Resistant
Downy Mildew	Highly Resistant	Highly Resistant
Phoma (Spring Blackstem)	Resistant	Resistant
Common Leafspot	Resistant	Resistant
Lucerne Yellowing Disease	Highly Tolerant	Highly Tolerant
Root and Crown Diseases		
Phytophthora Root Rot	Highly Resistant	Highly Resistant
Anthraxnose	Highly Resistant	Highly Resistant
Stagonospora Crown Rot	Highly Resistant	Highly Resistant
Fusarium Crown Rot	Highly Resistant	Highly Resistant
Rhizoctonia Crown Rot	Moderately Resistant	Moderately Resistant
Nematodes		
Root-Knot Nematodes	Highly Resistant	Highly Resistant
Root Lesion Nematodes	Highly Resistant	Highly Resistant
Stem Nematode	Moderately Resistant	Moderately Resistant
Aphids		
Spotted Alfalfa Aphid	Highly Resistant	Highly Resistant
Blue-green Aphid	Highly Resistant	Highly Resistant
Pea Aphid	Highly Resistant	Highly Resistant

Performance Benchmarks

	Silverado	Silverosa GT
Hay and forage quality	High	Very high
Leaf and stem disease resistance	High	High
Leaf/stem ratio in mature stands	High	Very high
Forage and hay palatability (sweetness)	High	High
Yield Potential	High	High
Summer production	Very high	Very high
Winter activity and production	High (9)	High (7)
Frost and cold tolerance	High	High
Stem height at maturity	Tall	Tall
Regrowth after grazing (all seasons)	Rapid	Rapid
Crown width and density of fine stems	High	Very high
Stand Life	High	Very high
Persistence in irrigation and high rainfall	Long term	Long term
Persistence in moderately acid soils	Long term	Long term
Persistence in dryland production	Long term	Long term
Tolerance to salinity	Moderate	Very high
Tolerance to intense grazing	High	Very high
Tolerance to frequent cutting (28 days)	High	Very high

Silverosa GT

LUCERNE



WINTER ACTIVITY 7



Overview

Silverosa GT is the ultimate multipurpose, grazing-tolerant lucerne. It is highly productive, has inbuilt disease and pest resistance, combined with high levels of forage quality and salt tolerance.

Silverosa GT growing on saline soil retains its high quality and palatability.

- Premium quality lucerne offers high levels of production under intensive rotational or extended continuous grazing as well as fodder production
- Very high yields of both forage and hay
- Regrows rapidly after grazing and cutting
- Tolerates high levels of salinity up to 10,000ppm (mg/L)
- Australian bred to suit all lucerne growing areas

Plant Characteristics

- Erect, broad-crowned, leafy growth habit
- Very high leaf:stem ratio in mature stands
- Very palatable fine leafy stems in both hay and forage
- Dense, fine-stemmed regrowth
- High levels of ME and CP

Salt Tolerance

Saltlander technology in **Silverosa GT** extends the potential range for growing lucerne into more saline soils where the key factor is long-term persistence. Most established lucerne stands will withstand short-term saline shock.

Not all plants in a lucerne variety are equally salt tolerant because of genetic variation between them. Hence, as salinity levels increase, expect a lower proportion of plants to survive.

Silverosa GT should not be expected to survive in extremely saline areas.

Site-to-site variation in survival will also be affected by the chemical composition of salts and interactions with other soil factors such as pH and soil moisture/water profiles.

Silverosa GT is not a GM variety.



The truly dual-purpose Silverosa GT (grazing tolerant) also produces top quality hay.

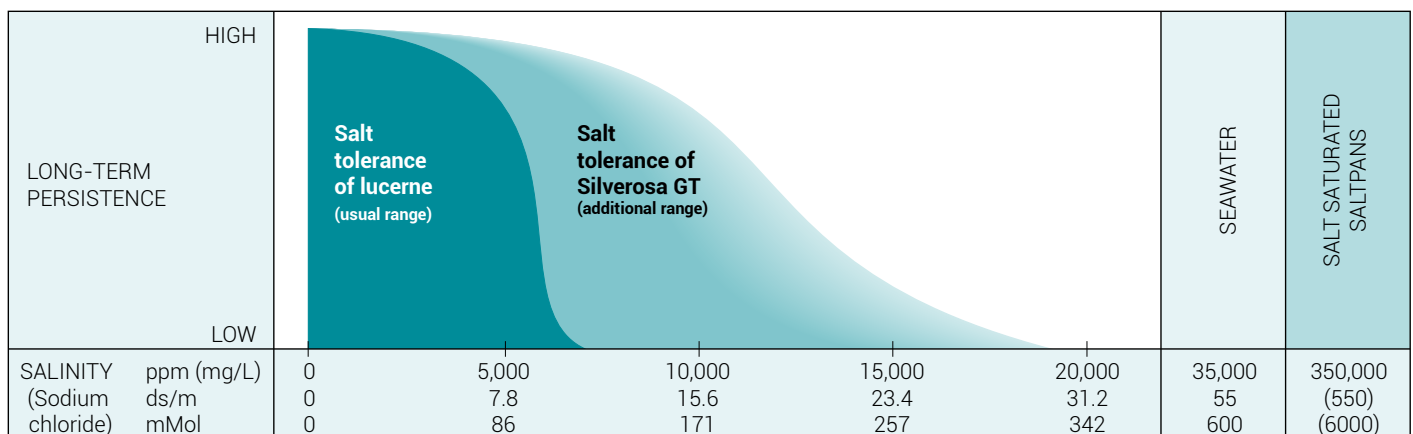


Monto QLD 40 days after sowing

Sardi 7 (Series 2)

Silverosa GT

Silverosa GT has very high seedling growth rates and excellent establishment rates.



Sow much better, grow much better, yield much better



Scientific Name

Medicago sativa

Area of Adaptation

- Dryland conditions to winter cold to subtropics
- Best adapted to areas with average annual rainfall of more than 325mm.

Soil Type

Lucerne grows well on a wide range of well drained soils including deep loams, sands, loam over gravel or clay. Lucerne does not produce as well on shallow soil types and is sensitive to prolonged waterlogging. Upper Murray Seeds highly recommends liming before sowing lucerne if soils are acidic. All lucernes are sensitive to high aluminium levels common in low pH soils, this reduces root development and hence plant productivity.

Fertility

All lucerne will benefit from annual phosphorus, sulphur and potassium applications in soils having low availability of these elements, especially if removing hay/silage from the paddock. Local practices for trace element management of legumes should be followed.

Disease and Pest Management

Monitor lucerne regularly during emergence for insect damage from pests such as RLEM, aphids and lucerne flea and spray if required. Both Silverado and Silverosa GT are highly resistant to spotted, blue-green and pea aphid species. They also have good levels of resistance to nematodes (eg highly resistant to root-knot nematodes, resistant to root-lesion nematodes and moderately resistant to stem nematode). Phytophthora root rot, Anthracnose and Fusarium crown rot can severely damage lucerne however both Silverado and Silverosa GT are highly resistant to these diseases.

Weed Control

Spray out any old pasture/crops with a knock-down herbicide prior to sowing and speak to your Upper Murray Seeds agronomist about the correct rate to use depending on the size of weeds present. Also consider using a pre-emergent herbicide such as trifluralin.

Weed control in young lucerne can be challenging due to its slow seedling growth. Most broad-leaf herbicides cannot be applied until the lucerne is at the third trifoliate leaf stage. Weeds need to be treated when small. Once a stand is established (>1 year) there are more winter cleaning options and herbicide efficacy is improved.

Seed Size

440,000 - 500,000 seeds per kg
(Source: *Pasture Varieties used in NSW 2006-2007*, Bev Zurbo, 2006)



Five randomly selected plants from both varieties in a 2013-sown lucerne trial in south east SA were dug up October 2016. Compare and contrast leaf retention and note the superior leafiness of Silverado in the bottom half of the plant.

Sowing

Lucerne will establish successfully whether it is sown in autumn, winter or spring. The time of sowing normally depends on the rainfall and climate of the region.

Silverado and Silverosa GT are better suited to autumn establishment because seedlings are highly frost tolerant. Delayed sowing allows the opportunity to improve weed control and seedbed preparation. For spring established lucerne aim to sow mid-August onwards as the soil temperature and daylight start to increase.

Sow the seed at 4-8kg/ha (dryland) or 15-25kg/ha (irrigated) at approximately 1cm depth. Lucerne seed must be inoculated with the AL strain of rhizobium to ensure effective nodulation and prompt establishment. Oversowing of established lucerne is advised because of competition from existing plants.

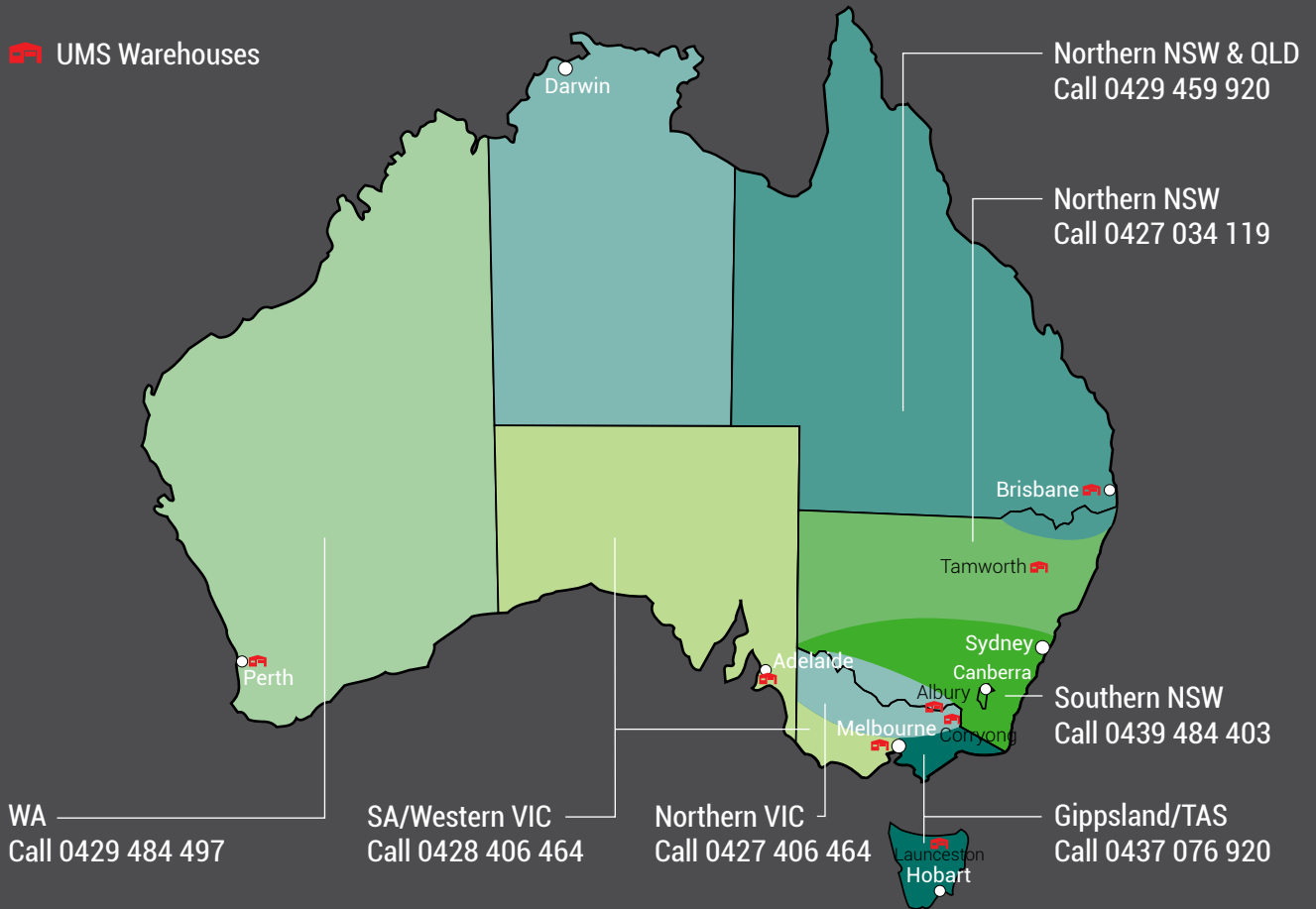
Grazing

Allow the stand to reach approximately 20cm high and ensure that the plants cannot be pulled out prior to grazing. Allow lucerne to flower in its first year to strengthen its crown and taproot.

Monitor the first grazing carefully and remove stock before they begin to graze near the crown of the plant. Rotational grazing (or strip grazing) is preferable for maximising productivity of the stand. Silverado and particularly Silverosa GT can withstand prolonged set-stocking. Avoid damaging the crown of the lucerne plant.

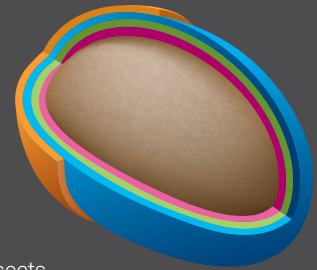
Feed Quality

Silverado and Silverosa GT are both highly regarded due to their ability to produce top quality, out-of-season feed. They have a high leaf:stem ratio, excellent palatability and digestibility. Silverado and Silverosa GT have high levels of metabolisable energy (ME) and are a reliable source of crude protein (CP).



SupaCote™ Seed Coating

UMS SupaCote™ helps protect seed from pests, improves germination and enhances plant growth. Lucerne is usually treated with SupaCote™ and supplied ready to sow.



The benefits of seed coating include:

- Protection against fungal diseases
- Protection from biting and sucking insects
- Promoting seedling vigour and plant establishment
- Facilitating the application of rhizobia (required to aid nodulation and promote good plant health).

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