

Understanding Lucerne



- How to increase the value of the feed produced
- Break through developments in grazing tolerance
- How to choose a lucerne
- Pest and disease ratings
- Best management practices

Background

Lucerne is one of the most widely used and adapted fodder species fit for a variety of farming situations. It is commonly referred to as “The King of Fodders” and offers a number of benefits to Australian farmers. Lucerne’s main growing period is during spring, summer and autumn, offering the opportunity for farmers to produce high quality hay and or silage as well as finishing stock at times when stock prices can be at a premium.

The benefits of growing lucerne are extensive and if done well, will repay many times over. Some of the benefits include high quality feed, high dry matter production, flexibility of use, nitrogen fixed into the soil and it is a perennial species which means it should last for many years.

Research

In 1997 PGG Wrightson Seeds set up a long-term commitment to lucerne research and development in Australia. The focus for PGG Wrightson Seeds research was to evaluate a range of lucernes that were high yielding, high quality and persistent, as well as having improved resistance to pests and diseases.

Our approach was to focus on variety selection based on the specific needs of various farming operations around Australia. This meant identifying a highly winter active variety for irrigated hay production, and a variety to meet the needs of a dryland mixed farming operation which uses lucerne for their livestock and cropping rotation.

PGG Wrightson Seeds were also one of the first companies to evaluate lucerne developed specifically for survival under long periods of continuous grazing. As a result of this extensive research PGG Wrightson Seeds have commercialised two lucernes that have surpassed the standard test protocols for grazing tolerance under Australian conditions.

PGG Wrightson Seeds are currently evaluating a number of new varieties and technologies from various local and international programmes, including Forage Genetics International, Cal/West Seeds, and new lines from our South America operation. In addition our Australian research programme is looking at new breeding goals with unique material for high yielding, persistent winter activity, while still maintaining the high disease resistance required in the northern New South Wales and Queensland environment.

Understanding Dormancy Groups

Lucernes have a dormancy number which has been developed to assist farmers choose the right dormancy of lucerne to meet their farming operation. The table below explains the difference between dormancies.

Dormancy	Character	Details
1-3	Winter Dormant	No winter growth – very short growing season
4-5	Semi-Winter Dormant	Very little growth in winter but excellent persistence and summer quality for hay and or grazing. Excellent broadacre and specialist hay/grazing types but may need other species for winter feed
6-7	Winter-Active	Dense and reasonably persistent, dual purpose types
8-9	Highly Winter-Active	Up to 3,000kg/DM in winter. Ideal short term stands for South West Victoria, good seedling vigour and fast recovery from cutting
10-11	Very Highly Winter-Active	Best suited to Northern New South Wales and Queensland for short-term hay stands

Grazing Lucerne

Lucerne can provide high quality feed during times of the year when a grass pasture base cannot supply feed of adequate quality. For most, this is over the late spring through to autumn period. Farmers require a lucerne that can provide good quality for both grazing as well as conserved fodder, but more importantly require a lucerne that will persist for a long time. In most cases, lucerne is rotationally grazed, but does need the ability to withstand some set stocking under difficult seasonal conditions.

Choosing a Lucerne For Your Operation

Mixed Farming

Mixed farming operations need to be able to adjust their focus between crop and livestock enterprises based on the relative commodity prices at the time. They need a lucerne with some winter activity for finishing lambs or steers that can persist under set stocking during harsh seasonal conditions. It needs to have good grazing tolerance, persist and produce well for up to 8 years if prices are good.

A lucerne for mixed farming must also be capable of producing high yields and fixing good levels of nitrogen, so that if crop prices are more favourable, it can be sprayed out and the paddock cropped. PGG Wrightson Seeds Stamina® 5 has emerged from a long evaluation process in both Australia and the USA and is proven to deliver high yields, have good quality and be persistent under the harshest conditions and poorest grazing management over a long period of time.

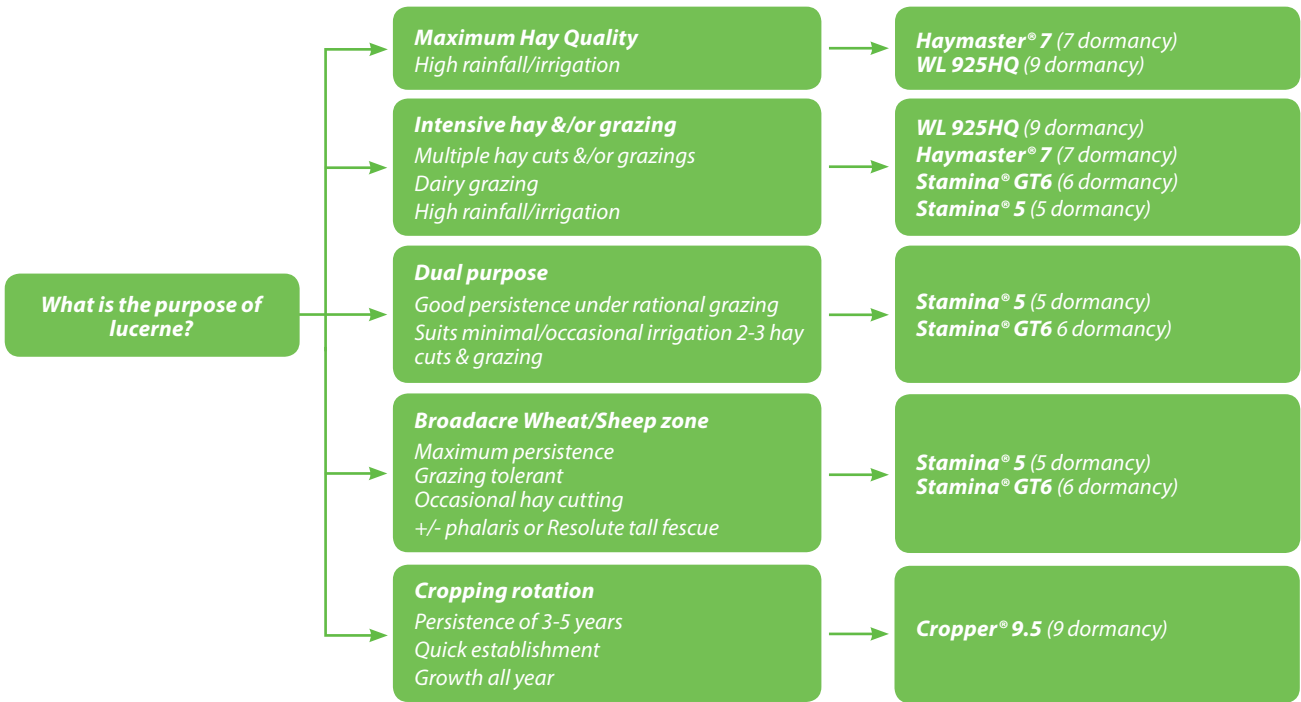
Crop Rotation

Farmers growing lucerne in a rotation with cropping need to look to a lucerne variety that will establish quickly, provide good winter and warm season production and fix maximum nitrogen over the short 3-5 year lucerne phase. In many cases, the lucerne may be sown under a cereal highlighting the need for the lucerne chosen to have excellent establishment vigour.

PGG Wrightson Seeds Cropper 9.5 is ideal as part of a crop rotation due to its outstanding performance of all attributes required in a cropping programme. Its excellent forage production and good seedling vigour offers Australian farmers the opportunity to plant a lucerne with excellent performance characteristics.

Which lucerne Should I Sow

The chart below provides a quick reference guide to understand which lucerne will best fit your farming operation needs.



Variety Selection

Select the appropriate variety based on your requirements and the agronomic characteristics to suit your situation

	Dormancy	Aphids		Root & Crown Diseases			Stem Nematode
		Spotted Alfalfa Aphid	Blue Green Aphid	Phytophthora Root Rot	Collectotrichum Crown Rot	Bacterial Wilt	
WL 925HQ <small>lucerne (9) performance bred</small>	9	High Resistance	High Resistance	High Resistance	Moderate Resistance	Moderate Resistance	Resistant
Haymaster 7 <small>lucerne (7) performance bred</small>	7	High Resistance	High Resistance	High Resistance	Moderate Resistance	Resistant	Resistant
Stamina 5 <small>grazing tolerant lucerne (5) performance bred</small>	5	High Resistance	Resistant	Resistant	High Resistance	High Resistance	High Resistance
Stamina GT6 <small>grazing tolerant lucerne (6) performance bred</small>	6	High Resistance	Resistant	Resistant	High Resistance	High Resistance	High Resistance
Cropper 9.5 <small>lucerne (9.5) performance bred</small>	9	High Resistance	High Resistance	High Resistance	Moderate Resistance	Moderate Resistance	Resistant

High Resistance..... >51%
Low Resistance 6-14%

Resistant..... 31-50%
Susceptible 0-5%

Moderate Resistance 15-30%

Lucerne Agronomy Checklist

The following checklist has been developed to assist you to get the most out of your lucerne.
For any assistance please contact your local Pasture Specialist on 1800 619 910.

Preparation

Paddock Selection

- Ensure the paddock is suitable for growing lucerne
- Soil test for correct soil and nutrient status:
 - pH (CaCl₂ test) 5.0-7.5 pH (water test).....5.8-8.2
 - aluminium <15mg/kg water salinity<2.2 ds/m
 - Soil salinity<2ds/m sodium<6%
 - Ca:Mg >2:1
- Check drainage of irrigation bays:
 - well-levelled bays with no hollows at least 1:800 slope
 - able to irrigate & drain within eight hours

Seedbed Preparation






- Prepare well in advance
- Create a fine, firm seedbed, clean of any weeds

Pest Control

- Remove as many weeds as possible during previous crop or pasture phase
- Use pre-emergent for wireweed/hogweed, annual ryegrass, and other grass weeds
- Consider post-emergent options for grass and broadleaf weeds
- Early control is critical to provide establishment for new lucerne
- Monitor for Red Legged Earth Mite, lucerne flea and aphids as these can be devastating to lucerne at any time, especially during establishment.

Variety Selection

Select the appropriate variety based on your requirements and the agronomic characteristics to suit your situation

	On farm hay/silage		Specialised Hay		Dual purpose (grazing and hay)		Grazing Tolerance	
 WL 925HQ <small>lucerne (9) performance level</small>	10	10	7	6				
 Haymaster 7 <small>lucerne (7) performance level</small>	10	10	7	6				
 Stamina 5 <small>grazing tolerant lucerne (5) performance level</small>	8	7	10	10				
 Stamina GT6 <small>grazing tolerant lucerne (6) performance level</small>	8	7	10	9				
 Cropper 9.5 <small>lucerne (10) performance level</small>	8	7	7	6				

1	2	3	4	5	6	7	8	9	10
Inferior					Moderate		Excellent		

Sowing Rates

When sowing lucerne PGG Wrightson Seeds recommends you use the same sowing rates for bare or coated seed. Rates can vary based on soil type, the intended use and previous practices.

<i>Kg/ha</i>	<i>Rainfall Guide</i>
2-4kg/ha	Up to 400mm
4-12kg/ha	400-600mm
12-15kg/ha	600-700mm
15-20kg/ha	750-900mm
20-25kg/ha	900+ or irrigation

Inoculation

When sowing lucerne PGG Wrightson Seeds recommends you use the same sowing rates for bare or coated seed. Rates can vary based on soil type, the intended use and previous practices.

Autumn Sowing

- Under irrigation or dryland where soil temperatures are 15-25 degrees Celsius and plants can establish before cold winter temperatures (and frosts)
- Better suited to winter-active and highly winter-active varieties

Late Winter-Spring Sowing

- Enables plants to establish into increasing soil temperatures and allows good control of winter germinating weeds
- Plant early enough to ensure top soil is not drying out whilst seeds are trying to germinate
- Suited to all dormancies but especially more dormant cultivars

Moisture

Sow into good moisture, with good soil friability – not sticky

Depth

10-15mm – drop or shallow drill, cover with light harrows or mesh and roll to maximise germination

Insect Control

Red Legged Earth Mite should be controlled prior to sowing or treatment immediately post – sowing Preferably use Superstrike® treated seed as part of a programme.

Plant Density

- Stands are variable at 12 plants/m² dryland and 30/m² irrigated
- For irrigation, 120-130 plants/m² at establishment

Managing Your Lucerne

Cutting / Grazing

- Allow new lucerne stands to flower prior to the first cutting or grazing
- Lucerne carbohydrate reserves need to be replenished between grazings and cuttings
- Graze for periods of 7-14 days followed by adequate spelling
- Allow 28 days (winter-active) and 35 days (winter-dormant) between cutting or grazing during growing season
- Spell during winter prior and post any herbicide applications

Fertiliser

- Based on nutrient removal, lucerne needs be fertilised regularly to maintain its nutrient requirements
- Nutrients removed per tonne of hay:
 - Phosphorus 2-3kg Potassium 15-20kg
 - Calcium 13-17kg Sulphur 2-4kg
- Maintain visual observations of stand health and if unsure take follow-up soil or plant tissue tests to identify problems

Managing Your Lucerne (continued)

Weed Control

- Usually undertaken in mid/late winter after good germination of weeds
- Identify weeds correctly and seek advice as to most appropriate herbicide(s) to use and correct rates
- Rotate herbicide groups over time to avoid herbicide resistance problems
- Ensure that the label for all chemicals is read and understood so as to know the withholding period (WHP), rainfastness and other important information about the chemical prior to use

Learning

For more information about brassica the following is available at pggwrightsonseeds.com.au

Forage Focus

Stamina® 5

Forage Focus

WL 925HQ

Forage Focus

Stamina® GT6

Forage Focus

Haymaster® 7

Research Paper

Evaluation of grazing tolerant Lucerne

LETS GROW TOGETHER

Planning your forage and seed requirements in advance can make a big difference to your productivity. For over 75 years PGG Wrightson Seeds have been working with farmers to get the balance right.

To discuss your growth plans call your Sales Agronomist now.