New crown rust resistant oat

Selected for warm soil emergence making it a suitable choice for early sowing situations throughout Northern Australia

"With the lack of moisture, it had a hard run in the first part of the season"

Farmer Luke Felmingham is impressed with Jivets performance and yield despite a tough start

The critical nature of seeding depth

Why sowing into moisture with good seed to soil contact is essential
Contents

As always following a year of feed shortage, the requirements for early sown crops to start feeding hungry livestock will be in high demand. One particularly promising option for this sort of early sowing application is our new forage oat variety Bronco.
Brett Campbell of Wellington, New South Wales, has been trying to re-establish lucerne pastures on his river flats that were decimated by flood in 2016.

With 2017/2018 being one of the lowest rainfall periods on record for the district, Brett thought like many others surely 2019 would not be the same.

After consultation with his local rural store, Brett decided on a Pasture Genetics L70 Lucerne and Cavalier Spineless Burr Medic pasture.

"The country was ready to go, and then in mid-May, we started planting off the back of 15 millimetres of rain.

"Unfortunately, that rain was the last we saw for a while. Looking at the pasture, it was very patchy with a plant here and there," Brett explained.

Lucky for Brett, he was talking to a neighbour about the poor establishment of his pasture when his neighbour reminded him of Pasture Genetics Establishment Guarantee™ program.

"My neighbour had just made an Establishment Guarantee™ claim on his L70 Lucerne stand, so I thought I would look into it through my local rural store who then put me in touch with my local Pasture Genetics representative," Brett explained.

After going out and inspecting the paddocks with his local Pasture Genetics Territory Manager, Bretts Establishment Guarantee™ claim was approved.

"The season didn’t improve from then so we didn’t get a chance to replant, but we have the seed ready to go for next year.

"Coming off the back of another ordinary year, I think a program like Establishment Guarantee™ will be the difference between taking a punt and planting pasture and not,” Brett said gratefully.”

River flats decimated by flood in Wellington

By Jack Edwards

At Pasture Genetics we are so confident in our seed genetics and the quality of our proprietary products, we will replace seed at half the original purchase price if it fails to establish satisfactorily.

Unfortunately establishment failures can occur, Pasture Genetics’ Establishment Guarantee™ program is available for the vital 30 day period after planting, and provides growers with substantial savings should they need to replant their paddocks.

Pasture Genetics is the only forage company in Australia to offer Establishment Guarantee™. Plant with peace of mind and the support of Pasture Genetics.

Register at pasturegenetics.com within 30 days of planting to participate in the program.*

"Establishment Guarantee™

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*Terms and Conditions apply.
Rob Says

2019 proved to be a year of adversity for many. However, I’ve observed that as an industry, those involved in agriculture do so well to unite and move forward with positivity. 2020 presents us all with some exciting opportunities and the potential to turn things around.

As always following a year of feed shortage, the requirements for early sown crops to start feeding hungry livestock will be in high demand. At Pasture Genetics, we have had good production results with short term grasses and cereals for early sowing, so rest assured, when the time comes for sowing and the season breaks, there will be stock available and homegrown feed will not be far away.

One particularly promising option for this sort of early sowing application is our new forage oat variety Bronco. Bronco comes to market with full commercial release in 2020 after very strong results in wide-scale trial work in 2019. Even in a tough year, Bronco provided solid feed, with a robust nature surviving tougher conditions and great yield potential in more favourable seasonal circumstances. Excellent crown rust resistance and warm soil emergence characteristics will allow Bronco to be sown early with safety and provide a long season of production, and security of being able to safely lock up a crop at the end of a season for hay without the risk of an onset of crown rust.

Another exciting development at Pasture Genetics Penfield Research Station in late 2019 was the opening of the Benito Damin Laboratory and Education Centre. This state of the art facility was dedicated to the memory of my father Benito Damin, who had an unsurpassed passion for knowledge, excellence and education for the next generation and was one of the cornerstones behind the establishment of the Penfield Research Station operations as a whole. We have already hosted workshops and information sessions in the new space, and look forward to bringing many more groups of people through to utilise the Education Centre.

Now coming into another year where success is critical, and failure in crops is not an option, I would once again like to encourage you to please be very careful and purchase your seed from a highly reputable source such as Pasture Genetics and our retail partners. Our seed comes with extremely high-quality guarantees and we are proud to say that we have developed one of the most trustworthy seed production programs available to Australian growers. There should be good stocks of all seed types moving into the sowing season this year, but as always, plan and order early to avoid missing out.

As always, best of luck for the season ahead.
At Pasture Genetics we are always looking to new technology – constantly striving to improve our offering – bringing the latest technology, with even better performance to our leading forage products.

**Goldstrike®**
Pasture Genetics Goldstrike® includes rhizobia inoculation, micronutrient package and Apron® XL fungicide (where available on label). Goldstrike® is comprised of the highest quality seed and coating technology and is the best establishment package for pasture legumes.

**Goldstrike LongLife®**
Goldstrike LongLife® offers extended rhizobia storage life on a range of species. Goldstrike LongLife® can provide up to six months storage life on medic and sub clover, and up to 12 months storage life on lucerne.

**XLR8™**
XLR8™ treatment is a film coat application of Poncho® Plus insecticide.

Poncho® Plus is a significant advancement in the seed treatment market. It is an innovative insecticidal seed treatment that has registration across a range of pasture species and forage crops.

Poncho® Plus combines two robust compounds, imidacloprid and clothianidin, which increase the insect control spectrum above other seed treatment options. Poncho® Plus provides protection during establishment against a range of pests including Redlegged Earth Mite, Cutworm and Lucerne Flea. Poncho® Plus also offers added establishment vigour in the early growth stage of the plant.

The benefits from our XLR8™ seed treatment not only comes in the form of insect protection, but also shows long term benefit in assisting early seedling plant growth. This is demonstrated with greater root system development in seedlings, leading to higher overall pasture establishment and long-term pasture production.

Our XLR8™ seed treatment comes standard on all brassicas, herbs, and our premium proprietary lucerne varieties. Our XLR8™ seed treatment can be applied upon request to all seed products where registration is applicable.

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### Comparison Chart

<table>
<thead>
<tr>
<th></th>
<th>Micro Nutrient</th>
<th>Rhizobia Inoculation</th>
<th>Apron®XL Fungicide*</th>
<th>LongLife tested**</th>
<th>Poncho® Plus Insecticide</th>
<th>Gaucho® Insecticide</th>
<th>Film coat only</th>
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*Where available on label  **Six months storage life on medics and sub clovers, and up to 12 months storage life on lucernes.

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### Benefits

**Registered Chitin Benefits**

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Redlegged Earth Mite</th>
<th>Lucerne Flea</th>
<th>Blue Oat Mite</th>
<th>Cutworm</th>
<th>Yellowheaded Cockchafer</th>
<th>African Black Beetle</th>
<th>May offer Stress Shield™ benefits</th>
<th>Up to four weeks systemic protection for emerging seedings</th>
<th>Protection against some soil pests</th>
<th>Low impact on beneficial species</th>
<th>Targeted chemical placement</th>
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Lindsay Flavel

Lindsay Flavel
‘FLETCH’
ADMINISTRATION MANAGER

Lindsay is a seasoned agribusiness professional, with close to 20 years of experience in commercial and operational roles. As a loyal, reliable and innovative Administration Manager, he thinks there’s “nothing more satisfying than looking out on acres and acres of healthy crops”, and thrives on working closely with business partners to deliver great outcomes. On the weekends, you’ll find Lindsay listening to music, and spending time with his wife and kids.

Age:
A young 67

Children/grandchildren:
I have a beautiful family – three children, ages ranging from four to 36, and three cracking grandchildren aged from three to seven!

Pets:
I have always had pets, dogs of all varieties but also Siamese cats. We learn so much from having them in our lives and we shouldn’t be without them.

Period of Time at Pasture Genetics:
1 year

What lead you to taking the leap to work at PG:
After seven years with AusBulk (now Viterra) and 11 years with Elders, I was lucky enough to be given the opportunity to remain in the Agriculture industry by the Damin family.

Quote I live by:
Everything in moderation, including moderation.

My role in one sentence:
To work closely with the PG team to maintain an effective, efficient office environment to deliver great outcomes for our business partners.

Last thing I Googled:
‘Jethro Tull – Aqualung album lyrics’ (I love my music)!

Last book I read:
When the War Was Over - Cambodia and the Khmer Rouge Revolution by Elizabeth Becker.

Social network I use the most:
Don’t spend much time on Social media but visit Facebook occasionally to keep up with my busy family.

Tech gadget that changed my life:
Given my age, probably the wheel! but more recently my iPhone.

What I enjoy most about my work:
The customers I get to talk to and the people I work with.

What motivates me to work hard:
My beautiful family and the faint hope of retirement.

The virtues I most admire in people are:
Empathy, respect and loyalty.

My guilty pleasure is:
Chocolate, and I do enjoy a good red wine.

The travel experience on my bucket list is:
Rural Ireland and Cornwall.

If I could invite any three people to a dinner party it would be:
John Lennon, Martin Luther King and Michael Collins.

And I would cook:
Silverside, cauliflower and white sauce.
Happy Bees means Happy Trees

With James Cook
TERRITORY MANAGER YORKE PENINSULA, RIVERLAND SA AND MALLEE VIC

Bees play a very crucial part in the functioning and success of many horticultural crops such as apples, almonds and macadamias, just to name a few. For example, many varieties of almond trees need to be pollinated almost exclusively by pollinating insects in order to yield at all.

After many discussions and visits with almond orchardists and pollination specialists, there was a clear conclusion made that work needed to be done in researching companion species that could benefit both the pollinators and vital crops. While looking at companion species in almonds specifically, the crop is facing both the requirement of feeding pollinating insects as well as soil improvement and conditioning.

Working alongside these orchards and pollination specialists we conducted four years of research and trials. We trialled many different species of plants which we narrowed down to a select few and from this the SOWsmart® Pollinator Blend was born. We have put together a blend of five different early flowering varieties that combined provide an extended flowering window. The blend consists of Bee Ready Brassica (a very early flowering brassica variety), Samurai White Mustard, White Cloud Crimson Clover, Smart Radish and Presto Vetch.

The Pollinator Blend was initially designed to help "wake up!" and provide an early feed source for the bees and get them to work once they arrive in orchards. Beehives usually start to arrive on farm around late July/early August. We found to get full benefit from the Pollinator Blend blend it is best sown mid-late April. This fits the constraints of having a sowing window after the almond harvest, but still early enough for the species to be flowering at the right time. The Bee Ready Brassica is generally the first to flower and if sown at the appropriate time will be flowering prior to the almond trees and early enough for the bees. Having the Pollinator Blend in the ground benefits both the orchard and the apiarists, as it feeds the bees early and also keeps the bees local to the almonds and don’t forage too far away if the trees are not quite flowering at the time.

Some added benefits of the Pollinator Blend are that it brings in beneficial insects to the area. The legume (Presto Vetch and White Cloud Crimson Clover) component fixes nitrogen whilst the deep tap root on the Smart Radish helps break up the well compacted soil and improves water infiltration. A mix of species in general encourages biodiversity and soil development.

By sowing the blend at 40 kilograms per sown hectare, this creates a very dense plant mass which results in very good weed suppression. The blend will continue to flower while the almonds are flowering, this giving the bees plenty of feed source.

SOWsmart® is Pasture Genetics’ ready-to-sow proven pasture blend range, the product of its ongoing research and development. SOWsmart® aims to provide agronomically accurate blends of high-production pasture seed, based within environmental and managerial constraints. Pasture Genetics also offers custom blending for individual farmers or regions.

Image: SOWsmart® Pollinator Blend taken August 21, after a April 17 sowing, Loxton, South Australia.
SOWsmart® is Pasture Genetics’ ready-to-sow proven pasture blend range. It is the product of ongoing research and development, specifically the Forage Crop Program. SOWsmart® aims to provide agronomically accurate blends of high-production pasture seed, based within environmental and managerial constraints.

A range of autumn, spring, and subtropical blends are now available. Pasture Genetics also offers custom blending for individual farmers or regions.

---

**Green Manure Row**

**Blend**

Viticulture and Horticulture

<table>
<thead>
<tr>
<th>Min rainfall (mm)</th>
<th>400</th>
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</thead>
</table>

**Seeding Rate**

| 140–160 kg/ha |

| 50% Outback Forage Oats |
| 20% Dunn Forage Peas |
| 10% Timok Forage Vetch |

- This blend of highly productive annual species results in a green manure crop that produces maximum herbage biomass production.
- This adaptable blend should be incorporated into the soil prior to budburst in late winter or early spring.
- Improve soil nutrient status and physical properties, as well as management conditions while reducing your chemical input.

---

**WINS Row**

**Blend**

Viticulture and Horticulture

<table>
<thead>
<tr>
<th>Min rainfall (mm)</th>
<th>350</th>
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</thead>
</table>

**Seeding Rate**

| 80–160 kg/ha |

| 80% Moby Forage Barley |
| 17% Timok Forage Vetch |
| 3% Smart Radish |

- WINS is an acronym for Weed control, Interrow, Nitrogen and Soil conditioning. Specifically for lower rainfall areas, the SOWsmart® WINS Row Blend provides fast forage production early in the season.
- The blend produces copious amounts of dry matter and aids in weed suppression.
- It also provides organic matter back into the soil.
- Excluded from Pasture Genetics’ Establishment Guarantee™ Program.

---

**Pollinator**

**Blend**

Viticulture and Horticulture

<table>
<thead>
<tr>
<th>Min rainfall (mm)</th>
<th>350</th>
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</thead>
</table>

**Seeding Rate**

| 40–60 kg/ha |

| 50% Presto Purple Vetch |
| 12.5% Bee-Ready Brassica |
| 12.5% Smart Radish |
| 12.5% Sumarai White Mustard |
| 12.5% White Cloud Crimson Clover |

- Comprised meticulously of flowering varieties, the SOWsmart® Pollinator Blend is designed to stimulate bee activity.
- Its combination of flowering species exhibits, white, yellow and purple flowers boasting high nectar and pollen levels.
- Designed for pollination dependant enterprises.
- Utilised in midrow or exclusion areas for almonds, avocados, macadamias etc.

---

**Irrigated Row**

**Blend**

Viticulture and Horticulture

<table>
<thead>
<tr>
<th>Min rainfall (mm)</th>
<th>700</th>
</tr>
</thead>
</table>

**Seeding Rate**

| 40–50 kg/ha |

| 60% Impact Perennial Ryegrass |
| 20% Convoy Continental Cocksfoot |
| 15% Reisling White Clover |
| 5% Palestine Strawberry Clover |

- A combination of summer and winter active cultivars, this formulation of perennial grasses and clovers will be sure to produce a dense, green, permanent ground cover all year round with a prostrate growth habit to reduce mowing requirements.
### All Grass Row HR

**Blend**
- Viticulture and Horticulture

**Min rainfall (mm)**
- 550

**Seeding Rate**
- 40–50 kg/ha

- Drylander Diploid
- Perennial Ryegrass 50%
- Origin Winter Active Tall Fescue 30%
- Convoy Continental Cocksfoot 20%

- This pest and disease resistant blend shows vigour and persistence to compete with the intense weed pressure associated with higher rainfall or irrigated environments.
- Another advantage is the broad spectrum of herbicides that can be applied over this dense ground cover.

### All Grass Row LR

**Blend**
- Viticulture and Horticulture

**Min rainfall (mm)**
- 400

**Seeding Rate**
- 35–40 kg/ha

- Wimmera Annual Ryegrass 40%
- Drylander Diploid Perennial Ryegrass 40%
- Convoy Cocksfoot 20%

- This blend negates issues of nematodes, Light Brown Apple Moth and excess nitrogen levels, providing a dense, weed-competitive ground cover.
- Only the most resilient annual and perennial grass varieties have been selected to achieve longevity.

### Dryland Medic Row

**Blend**
- Viticulture and Horticulture

**Min rainfall (mm)**
- 550

**Seeding Rate**
- 35–40 kg/ha

- Drylander Diploid 60%
- Perennial Ryegrass Convoy Continental 20%
- SARDI Rose Clover 10%
- Silver Snail Medic 10%

- In neutral to high pH soils, this blend of perennial grasses and medic thrives producing solid ground cover.
- These cultivars provide vigour and persistence in a horticultural or viticultural application.

### Regen Row

**Blend**
- Viticulture and Horticulture

**Min rainfall (mm)**
- 400

**Seeding Rate**
- 35–40 kg/ha

- Wimmera Annual Ryegrass 70%
- Cavalier Spineless Burr Medic 10%
- Cobra Balansa Clover 10%
- Jaguar Strand Medic 10%

- All components of this blend are capable of self-seeding and regenerating season to season.
- It is an excellent option for marginal rainfall zones that struggle to maintain perennial grasses like tall fescue and perennial ryegrasses.
- It is critical that you allow the plants to reach full maturity to utilise its regeneration trait.

### Dryland Sub Clover Row

**Blend**
- Viticulture and Horticulture

**Min rainfall (mm)**
- 550

**Seeding Rate**
- 35–40 kg/ha

- Drylander Diploid 50%
- Perennial Ryegrass Convoy Continental Cocksfoot 20%
- Cobra Balansa Clover 10%
- Clare 2 Sub Clover 10%
- Dalsa Sub Clover 10%

- Specifically for dryer areas of neutral to acidic soils, this blend utilises some of the most resilient and productive varieties of grasses and clovers.
- This perennial blend performs in tough growing conditions, providing dense ground cover that assists in maintaining a weed-free row.
### Winter Express

**AUTUMN BLEND**

- **Min Rainfall (mm)**: 450
- **Seeding Rate**: 25-35 kg/ha
- **Jivet Tetraploid** 70%
- **Annual Italian Ryegrass**
- **Turbo Persian Clover** 20%
- **Longhaul Balansa Clover** 10%

- A blend of tetraploid annual ryegrass, persian and balansa clovers offers a highly winter active, fast to establish and high-quality forage source. Suitable for grazing, silage and hay.

### Perennial HR

**AUTUMN BLEND**

- **Min Rainfall (mm)**: 650
- **Seeding Rate**: 25-30 kg/ha
- **Ansia Diploid** 40%
- **Perennial Ryegrass**
- **Impact Diploid Long Rotation Ryegrass** 35%
- **Jumbo White Clover** 10%
- **Ovaflow Sub Clover** 10%
- **Raja Red Clover** 5%

- A combination of perennial ryegrasses, as well as white, red and sub clovers intended to maximise dry matter production while maintaining exceptional feed quality. Suited to high rainfall and irrigation areas, SOWsmart® Perennial HR Blend has the potential to produce high-quality feed and condition stock year-round.

### Grazier

**AUTUMN BLEND**

- **Min Rainfall (mm)**: 550
- **Seeding Rate**: 18-25 kg/ha
- **Drylander Diploid** 20%
- **Perennial Ryegrass**
- **Valley Diploid** 20%
- **Perennial Ryegrass**
- **Hatrik Sub Clover** 20%
- **Origin Winter Active Tall Fescue** 15%
- **Dalsa Sub Clover** 15%
- **Cobra Balansa Clover** 10%

- Based on the beef, prime lamb and wool farming system, sub, white and balansa clovers produce quality and high dry matter production with secure persistence.

### Winter Feed

**AUTUMN BLEND**

- **Min Rainfall (mm)**: 350
- **Seeding Rate**: 25-35 kg/ha
- **Tetrone Tetraploid** 70%
- **Annual Italian Ryegrass**
- **Turbo Persian Clover** 30%

- A traditional blend of annual ryegrass and persian clover. It has been designed for oversowing or new plantings into good dryland or irrigated situations.

### Winter Max

**AUTUMN BLEND**

- **Min Rainfall (mm)**: 450
- **Seeding Rate**: 25-35 kg/ha
- **Jackpot Diploid** 40%
- **Italian Ryegrass**
- **Mona Tetraploid** 30%
- **Italian Ryegrass**
- **Turf Persian Clover** 20%
- **Longhaul Balansa Clover** 10%

- This blend of late maturing diploid and tetraploid Italian ryegrasses, with late-flowering persian and balansa clovers, can be used as a late-season annual or a bi-annual in favourable conditions.

- It provides high winter production with late season quality and second-year production.
**HDL**

**AUTUMN BLEND**

<table>
<thead>
<tr>
<th>Min Rainfall (mm)</th>
<th>350</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Seeding Rate</strong></td>
<td>20-25 kg/ha</td>
</tr>
<tr>
<td>Cavalier Spineless</td>
<td>30%</td>
</tr>
<tr>
<td>Burr Medic</td>
<td>20%</td>
</tr>
<tr>
<td>Bartolo Bladder Clover</td>
<td>20%</td>
</tr>
<tr>
<td>Dalsa Sub Clover</td>
<td>20%</td>
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<tr>
<td>SARDI Persian Clover</td>
<td>20%</td>
</tr>
<tr>
<td>Cobra Balansa Clover</td>
<td>10%</td>
</tr>
</tbody>
</table>

- A high-density legume mix suited to medium and higher rainfall zones that provides outstanding dry matter production and nitrogen fixation.
- A SOWsmart® HDL Blend break crop in the rotation is also an effective and profitable way of managing herbicide resistant annual ryegrass. This blend can contribute up to 50 kilograms per hectare of nitrogen for subsequent crops, the equivalent of 100 kilograms per hectare of urea.

**Bloat Fighter**

**AUTUMN BLEND**

<table>
<thead>
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<th>Min Rainfall (mm)</th>
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<tbody>
<tr>
<td><strong>Seeding Rate</strong></td>
<td>4-6 kg/ha</td>
</tr>
<tr>
<td>L71 Lucerne</td>
<td>50%</td>
</tr>
<tr>
<td>Balance Chicory</td>
<td>30%</td>
</tr>
<tr>
<td>Zulumax Arrowleaf Clover</td>
<td>20%</td>
</tr>
</tbody>
</table>

- This blend of pasture varieties with proven anti-bloating proteins is designed to minimise the risk of bloat when grazing lucerne-rich pastures. SOWsmart® Bloat Fighter Blend provides an alternative to pure lucerne stands, providing improved palatability and similar weight gains for livestock.

**Lucerne and Chicory**

**AUTUMN BLEND**

<table>
<thead>
<tr>
<th>Min Rainfall (mm)</th>
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</thead>
<tbody>
<tr>
<td><strong>Seeding Rate</strong></td>
<td>15-18 kg/ha</td>
</tr>
<tr>
<td>GTL®60 Lucerne</td>
<td>80%</td>
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<tr>
<td>Balance Chicory</td>
<td>20%</td>
</tr>
</tbody>
</table>

- This blend of lucerne and mineral rich, highly-palatable long-term chicory delivers a strong protein to energy ratio driving high animal production.

**Medic Haygraze LR**

**AUTUMN BLEND**

<table>
<thead>
<tr>
<th>Min Rainfall (mm)</th>
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<tbody>
<tr>
<td><strong>pH Range</strong></td>
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<tr>
<td><strong>Seeding Rate</strong></td>
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<tr>
<td>Cavalier</td>
<td>40%</td>
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<tr>
<td>Caliph</td>
<td>20%</td>
</tr>
<tr>
<td>Silver</td>
<td>10%</td>
</tr>
<tr>
<td>Cobra</td>
<td>10%</td>
</tr>
<tr>
<td>Bartolo</td>
<td>10%</td>
</tr>
<tr>
<td>Bindaroo</td>
<td>10%</td>
</tr>
</tbody>
</table>

- Blend of hard seeded annual legumes targeted at low rainfall zones with the purpose of producing large quantities of dry matter.

**Northern Horse HS**

**EQUINE BLEND**

<table>
<thead>
<tr>
<th>Min Rainfall (mm)</th>
<th>500/coastal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Soil Type</strong></td>
<td>Heavy</td>
</tr>
<tr>
<td><strong>Seeding Rate</strong></td>
<td>10-15 kg/ha</td>
</tr>
<tr>
<td>Katambora Rhodes Grass</td>
<td>25%</td>
</tr>
<tr>
<td>Matua Prairie Grass</td>
<td>25%</td>
</tr>
<tr>
<td>Bambatsi Panic Grass</td>
<td>25%</td>
</tr>
<tr>
<td>GTL®60 Lucerne</td>
<td>20%</td>
</tr>
<tr>
<td>Cobra Balansa Clover</td>
<td>10%</td>
</tr>
</tbody>
</table>

- Suitable for the high rainfall, northern regions of Australia, this blend of subtropical grasses suits heavier soil types.
- Excluded from Pasture Genetics’ Establishment Guarantee™ program.

**Northern Horse LS**

**EQUINE BLEND**

<table>
<thead>
<tr>
<th>Min Rainfall (mm)</th>
<th>500/inland</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Soil Type</strong></td>
<td>Light</td>
</tr>
<tr>
<td><strong>Seeding Rate</strong></td>
<td>10-15 kg/ha</td>
</tr>
<tr>
<td>Gatton Panic Grass</td>
<td>35%</td>
</tr>
<tr>
<td>Premier Digit Grass</td>
<td>35%</td>
</tr>
<tr>
<td>L71 Lucerne</td>
<td>20%</td>
</tr>
<tr>
<td>Cobra Balansa Clover</td>
<td>10%</td>
</tr>
</tbody>
</table>

- Suitable for lighter soil types in Northern Australia, this blend provides long-term persistence with subtropical grasses and legumes. The SOWsmart® Northern Horse LS Blend provides high-quality feed.
- Excluded from Pasture Genetics’ Establishment Guarantee™ program.
Southern Horse LR

**EQUINE BLEND**

- **Min Rainfall (mm):** 350
- **Seeding Rate:** 12-18 kg/ha

**Species:**
- Convoy Continental
- Cocksfoot
- Australis Australian Phalaris
- Gatton Panic Grass
- Daiya Sub Clover
- GTL®60 Lucerne
- Matua Prairie Grass
- Cobal Balansa Clover
- Tower Summer
- Active Tall Fescue
- Dryland Diploid Perennial Ryegrass
- Impact Diploid Long Rotation Ryegrass
- Convoy Continental Cocksfoot
- Gatton Panic Grass
- Bambatsi Panic Grass
- Bisset Creeping Bluegrass
- Cavalier Spineless Burd Medic
- GTL®60 Lucerne

**Key Points:**
- A combination of highly-palatable species for horses that is persistent in lower rainfall environments.

Southern Horse HR

**EQUINE BLEND**

- **Min Rainfall (mm):** 500/Irrigation
- **Seeding Rate:** 12-18 kg/ha

**Species:**
- Tower Summer
- Active Tall Fescue
- Dryland Diploid Perennial Ryegrass
- Impact Diploid Long Rotation Ryegrass
- Convoy Continental Cocksfoot
- Gatton Panic Grass
- Bambatsi Panic Grass
- Gatton Panic Grass
- Bisset Creeping Bluegrass
- Cavalier Spineless Burd Medic
- GTL®60 Lucerne

**Key Points:**
- A well-rounded blend of medic designed to provide quality autumn and winter production in existing subtropical and native pastures. Extremely hard seeded, with the ability to set abundant amounts of seed, ensuring persistence over many years.

Tropical Beef HS

**SUBTROPICAL BLEND**

- **Min Rainfall (mm):** 650
- **Soil Type:** Light & Heavy
- **Seeding Rate:** 6-12 kg/ha

**Species:**
- Katambora Rhodes Grass
- Bambatsi Panic Grass
- Gatton Panic Grass
- Bisset Creeping Bluegrass
- Cavalier Spineless Burd Medic
- GTL®60 Lucerne
- Convoy Continental Cocksfoot
- Gatton Panic Grass
- Bambatsi Panic Grass
- Bisset Creeping Bluegrass
- Cavalier Spineless Burd Medic
- GTL®60 Lucerne

**Key Points:**
- Well suited to heavy soils, this blend combines robust grasses, perennial legumes and hard seeded annual medics. This blend will provide longevity while maintaining quality to meet the needs of your production system.
- Excluded from Pasture Genetics’ Establishment Guarantee™ program.

Tropical Beef LS

**SUBTROPICAL BLEND**

- **Min Rainfall (mm):** 650
- **Soil Type:** Light
- **Seeding Rate:** 6-12 kg/ha

**Species:**
- Katambora Rhodes Grass
- Bambatsi Panic Grass
- Gatton Panic Grass
- Bisset Creeping Bluegrass
- Cavalier Spineless Burd Medic
- GTL®60 Lucerne
- Convoy Continental Cocksfoot
- Gatton Panic Grass
- Bambatsi Panic Grass
- Bisset Creeping Bluegrass
- Cavalier Spineless Burd Medic
- GTL®60 Lucerne

**Key Points:**
- Well suited to light textured soils. Given favourable seasonal conditions, this blend can produce quality feed over a greater portion of the growing season.
- Excluded from Pasture Genetics’ Establishment Guarantee™ program.

Medic Oversow

**SUBTROPICAL BLEND**

- **Autumn/Subtropical pH Range:** 5.0-8.0
- **Seeding Rate:** 3-10 kg/ha

**Species:**
- Bindaroo Button Medic
- Caliph Barrel Medic
- Cavalier Spineless Burd Medic
- Silver Snail Medic

**Key Points:**
- A well-rounded combination of medic designed to provide quality autumn and winter production in existing subtropical and native pastures. Extremely hard seeded, with the ability to set abundant amounts of seed, ensuring persistence over many years.
Throughout many regions of Northern Australia, forage oats play an essential role in producing bulk dry matter in various farming enterprises. They are consistently utilised in both irrigated and dryland situations and are most commonly used in intensive livestock grazing systems or oaten hay production.

Bronco Forage Oats is the latest release for Pasture Genetics and is available for the 2020 season. Throughout all evaluation trials over the past four years, Bronco has performed exceptionally well and has displayed strong resistance to all current races of crown rust. For many regions in Queensland and Northern New South Wales, rust is a significant issue and significantly reduces the quality of the forage material and potential crop yields.

Bronco is suited to a wide range of soil types and has been selected for excellent warm soil emergence making it a suitable choice for early sowing situations throughout Northern Australia. Early sowing in late February early March onwards can be common practice in many regions depending on seasonal conditions and available soil moisture or predicted rainfall events. Bronco has excellent seedling vigour and is very quick to first grazing. It displays exceptional tillering ability and fast recovery post grazing, making it an ideal choice for all intensive livestock operations seeking multiple grazing throughout the season e.g. dairy, beef and sheep.

Bronco is highly palatable with a semi-erect growth habit with a mid-late maturity. It has consistently produced superior late-season growth, maximising overall forage yields when grazed or utilised for high-quality hay production. Bronco is noticeably leafier than other forage oat varieties and has produced outstanding dry matter yields when compared to many current varieties on the market. With the extra leafiness combined with high tiller production, any grazing animals will intake more per mouthful with Bronco. This, combined with its excellent digestibility, makes this new variety superior for animal weight gains.

These traits, combined with its proven crown rust resistance, makes it an elite option for Northern producers seeking high-quality production from forage oats.

In 2019, significant tonnages were grown successfully and evaluated across multiple regions throughout Queensland and New South Wales. Many producers have indicated that they will be planting Bronco in 2020 as part of their forage production systems.
Talking with Tom

Pasture Genetics research and technical services manager Tom Damin and New South Wales cattle farmer Dave Redgrove chew the fat over newly released variety, Bronco Forage Oats.

Tell us about your experience with Bronco

Tom Damin (TD): I first saw Bronco as a trial line in 2015 and was very impressed straight away. Watching it all throughout the commercialisation process it has impressed at every opportunity.

Dave Redgrove (DR): I tried Bronco for the first time in 2019, looking for a winter crop to be sown around Easter and it had fantastic strike. It was then grazed, and following this we got two hay cuts, plus some regrowth after November rain.

What are the key features of Bronco?

TD: High tiller density, excellent grazing recovery, warm soil seed emergence and crown rust resistance.

DR: Regrowth after grazing is incredible, and it has surpassed our expectations. That and it seems to hang on really well even in a tough year.

Would the variety be better used for grazing or hay production?

TD: Bronco is well suited to both, with the crown rust resistance a late hay cut is a safer bet, but still, Bronco responds so fantastically to grazing it can maximize its potential even more when utilised by grazing animals.

DR: We have done both, but I think it will respond even better in a grazing situation, it just kicks back and goes hard after a grazing event.

How does Bronco perform in a grazing situation?

TD: Early vigour and sowing window should mean they are quick to first graze, and will recover well and rapidly for frequent grazing intervals and good yields.

DR: Regrowth is just exceptional, to be honest in both grazing and cutting for hay.

Were you pleased with the yield potential of Bronco?

TD: Definitely, overall yield is as good as or better than other commonly used commercial options.

DR: Yes, it was great; it was a thick crop and did fantastic in tough conditions.

Are there any issues with growing Bronco?

TD: Not really, sow into moisture with good preparation and you won’t have any trouble.

DR: Well, now it is still growing again late in December and I am trying to sow Sorghum!

Would you recommend growers to give it a go?

TD: Definitely, it is the best new premium forage oat available.

DR: Yes, 100 per cent, I have had a lot of interest from the neighbours and would recommend the variety for sure.

“I tried Bronco for the first time in 2019, looking for a winter crop to be sown around Easter and it had a fantastic strike. It was then grazed, and following this we got two hay cuts, plus some regrowth after November rain.”

DAVE REDGROVE
## Forage Cereals

### Moby

**Forage Barley**
*Hordeum vulgare*

Range: XtraLeaf®
Maturity: Early
Min Rainfall (mm): 350

**Seeding Rate**
- Dryland: 30-50 kg/ha
- High Rainfall/Irrigation: 50-80 kg/ha

- Moby Forage Barley is an early maturing, six-row, white seeded awnless barley; with rapid establishment and excellent winter growth. Leaf size is more comparable with oat varieties than traditional barley types.
- Moby Forage Barley offers an extended sowing window, with the ability to be sown from late April, through to July. Moby Forage Barley will offer multiple grazing opportunities until the development of the first node.
- Disease resistance appears typical of other commercial barley cultivars, with good net blotch resistance, adequate field leaf scald and spot blotch resistance.
- Very fast establishing variety.
- Exhibits good cold tolerance.
- Excellent winter growth.
- Slightly earlier than Dictator.

### Outback

**Forage Oats**
*Avena sativa*

Range: XtraLeaf®
Maturity: Mid-Late
Min Rainfall (mm): 400

**Seeding Rate**
- Dryland: 30-50 kg/ha
- High Rainfall/Irrigation: 50-80 kg/ha

- Outback Forage Oats provide higher yields of quality grazing throughout the critical autumn, winter, and early spring periods. Outback Forage Oats come Gaucho® treated. This protection aids in the early control of Aphid feeding damage and assists with management of Barley Yellow Dwarf. Early seedling growth responses from Gaucho® also allows for fast establishment.
- Outback Forage Oats are an excellent early plant option throughout many areas where late autumn and early winter feed is critical.
- Medium height, erect, specialist hay and grazing oat.
- Dark green broad leaves.
- Excellent seedling vigour results in rapid plant establishment.

### Presto

**Vetch**
*Vicia benghalensis*

Range: XtraLeaf®
Maturity: 95-105 days
Min Rainfall (mm): 300
Flower Colour: Purple
Hard Seed Level: Soft

**Seeding Rate**
- Cereal Mixes: 10-25 kg/ha
- Dryland: 30-45 kg/ha
- Pasture Mixes: 15-35 kg/ha

- An ideal vetch variety for low rainfall areas.
- Produces excellent dry matter even when sown late.
- Good cold and frost tolerance.
- Low levels of hard seed.
- Good resistance to Rust and Chocolate Spot (Bolitryis) but is susceptible to Ascochyta (Phoma radiei) and Downy Mildew (Peronospora viciae).
- Nearly a month earlier maturing than Popany.

### Timok

**Vetch**
*Vicia sativa*

Range: XtraLeaf®
Maturity: 100-110 days
Min Rainfall (mm): 350
Flower Colour: Purple
Hard Seed Level: Soft
Pod Shatter: 0-2%

**Seeding Rate**
- Cereal Mixes: 10-25 kg/ha
- Dryland: 30-45 kg/ha
- Pasture Mixes: 15-35 kg/ha

- Recent release from SARDI vetch breeding program.
- Matures between Rasina and Morava (from seeding to full flowering 100 - 110 days).
- High yielding and rust resistant, but is only moderately resistant to Ascochyta Blight.
- Very good vigour at flowering.
- Timok Vetch is ideally suited to grain production in areas with greater than 350 millimetres of annual rainfall per year.
- Timok Vetch’s dry matter is similar to Morava in high rainfall (greater than 400 millimetres), but 19 per cent higher than Morava in low to medium rainfall regions (330 - 380 millimetres).
Long seasonal growth and crown rust resistance with Bronco Forage Oats

By Adam Little

Passionate about good quality forage, with the ability to graze it or turn it into silage or hay, Dave Redgrove of Hinton, New South Wales, chose Pasture Genetics Bronco Forage Oats after discussions with his local agronomist.

On his property at High Street, Dave runs a small select herd of 30 Charolais heifers and cows for commercial and stud use. The property supports the livestock operation as well as a yearly cropping rotation. Dave runs a quality operation, both in livestock management and forage production. The operation runs a winter forage oats, ryegrass, clover and prairie grass program, and has a few paddocks sown down to Pasture Genetics Q75 Lucerne for lucerne hay and summer forage crops such as millets and sorghums.

Bronco was chosen for its long seasonal growth, crown rust resistance, prolific tillering and broad forage type leaves, which adds up to bulk dry matter per hectare for either grazing or hay and silage production. Sown in March/April at 80 kilograms per hectare, which had 125 kilograms of Starter 15 placed under the seed, the crop endured three grazings and two cuts.

“Those were extremely pleased with the regrowth of Bronco after grazing or cutting. Right at the end of the season I was planning on sowing Super Sweet Sudan Grass, so I mowed the Bronco into the dust, but to my surprise, in two weeks the Bronco had grown up to 150 millimetres! The regrowth blew me away, especially knowing I had mowed them so hard. It’s still growing into December,” Dave explained.

Bronco was also sown into an older stand of lucerne, which performed exceptionally well and was again used for grazing, hay and silage.

“I am certainly happy with the performance and quality of Bronco, and the quantity it has given us in such a dry season has been impressive,” Dave concluded.

“It gave us quality forage across the season with the versatility to graze or cut it as the season lengthened.”

DAVE REDGROVE

Image: Pasture Genetics territory manager Adam Little with Dave Redgrove in Bronco Forage Oats, Hinton, New South Wales.
High-quality awnless barley hay production fills the demand

By Michael Christensen

For many producers, 2019 was a challenging year to produce high-quality hay. Simon Burke has experienced a very dry season on his property just outside of Chinchilla, Queensland, but managed to grow a quality hay crop with the assistance of some irrigation.

In early May, Simon planted 145 hectares of Pasture Genetics Moby Forage Barley at a rate of 55 kilograms per hectare. Irrigation was utilised throughout the season to keep the crop going forward and ensure a satisfactory yield was achievable.

“Considering the Moby crop had received minimal rainfall to assist growth, it still managed to produce a high-quality end product,” Simon said.

Moby can finish early in a tough season and therefore will still maintain its feed quality right up until the point that it is cut to be baled. Simon’s Moby was baled into 4x4 round bales averaging 300 kilograms each and totalling around 13 bales per hectare.

Simon said the quality of the Moby bales was excellent and although the hay prices were at a premium this year compared to recent years the demand still exceeded supply. A high-quality product will always sell.

After this success in 2019, Simon plans to plant Moby again in 2020 for intensive hay production.

A valuable amount of hay in tough conditions

By Adam Little

In setting up a new hay operation, Tim Goulder worked with his local rural store to select varieties most suitable for hay production.

As the farm manager at “Coolong Farm” at Bureen in the Hunter Valley, New South Wales, Tim was presented with the task of producing good quality hay, while cleaning up weed issues present on the property in specific paddocks.

Pasture Genetics Outback Forage Oats was chosen for an 18-hectare paddock, with its very late season growth, erect nature, fast establishment and broad leaf, it produces high-quality fodder for hay, silage and grazing.

Sown in June 2019 for the sole purpose of cutting for hay, the Outback was sown at a rate of 85 kilograms per hectare and companion sown with Pasture Genetics Jivet Tetraploid Annual Italian Ryegrass sown at 20 kilograms per hectare. One hundred and twenty-five kilograms of Starter 15 fertiliser was sown under the crop as a starter application. The oats were then irrigated throughout its whole growing season and boosted with Urea.

The Outback was initially sown as one large paddock, but to cut hay, it was divided into four sections in which the two parts were cut toward the end of October and the other two blocks about two and a half weeks later.

“I am pleased with the performance of Outback and the quality and amount of hay it has given us.

The first two sections of the paddock were baled, with the first roadside section producing 102 round bales weighing 300 kilograms each from 5.1 hectares and the river section producing 36 large square bales averaging 525 kilograms off the other 4.3 hectares.

“The third and fourth sections produced 114 large square bales averaging 525 kilograms per bale, which equates to 59.8 tonnes off 8.6 hectares.

“The overall results from 18 hectares 109.35 tonnes or 6.08 tonnes per hectare, which is a valuable amount of hay give the current weather patterns.

“Some of the hay will be retained on the property, while the remaining amount will be sold,” Tim concluded.

The Jivet was sown with the oats to increase weed competition and to lift the overall quality of the hay with fine stemmed ryegrass. However, it also may offer some very valuable regrowth in longer seasons after the oats are cut for hay.
Bronco Forage Oats Grazing Trial

2019 | PENFIELD RESEARCH STATION

- An irrigated six-hectare paddock was divided into 12 half-hectare sections. On May 13, four of these sections were each sown with Bronco Oats, Drover Oats, and Comet Oats.
- Sowing rate was 75 kilograms per hectare.
- 30 Angus x Hereford steers and heifers were split into three grazing groups of 10 animals each, with an average starting weight of 229 kilograms and began grazing the trial on August 19, 15 weeks after sowing.
- The three groups simultaneously grazed each of the varieties throughout the duration of the trial.
- The trial ran for 12 weeks until October 21, each variety at least would be grazed for an equal duration by each group of cattle.
- No other feed or supplements were given to the animals.

DISCUSSION:

This trial was designed to showcase the quality differences and live weight gain performance between leading and commonly grown oat varieties available now in Australia. With equal grazing time and identical conditions for each of the varieties, the idea behind the trial protocol was to have the individual oat variety as the only variable measured.

All three varieties established well in a fairly late break to the season and were grazed around 15 weeks after sowing. Grazed from mid-August through to late-October, 12 weeks of solid rotational grazing tested the productivity of all three varieties. Early on, Comet had excellent weight gain as a result of having the most feed at the time of first grazing, however it did not recover as well as the Bronco and Drover and had a poorer finish to the season.

The Bronco performed well all throughout the trial. In a year where moisture stress was relevant, the ability of the Bronco to regrow and recover from tough grazing conditions was showcased by the consistency of the weight gain results throughout the duration of the trial. Also, there could have easily been another one to two grazing events from the Bronco if the season did not cut out early drying off. This was very different in comparison with the Drover which was starting to go to head in the last rotation of the trial, and regrowth after the third grazing event was extremely poor.

Overall Average kg/day weight gain (over 12 weeks)

<table>
<thead>
<tr>
<th>Varieties</th>
<th>4 weeks</th>
<th>8 weeks</th>
<th>12 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bronco</td>
<td>1.55</td>
<td>1.47</td>
<td>1.58</td>
</tr>
<tr>
<td>Drover</td>
<td>1.60</td>
<td>1.58</td>
<td>1.59</td>
</tr>
<tr>
<td>Comet</td>
<td>1.61</td>
<td>1.51</td>
<td>1.53</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Varieties</th>
<th>4 weeks</th>
<th>8 weeks</th>
<th>12 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bronco</td>
<td>1.40</td>
<td>1.52</td>
<td>1.58</td>
</tr>
<tr>
<td>Drover</td>
<td>1.50</td>
<td>1.56</td>
<td>1.58</td>
</tr>
<tr>
<td>Comet</td>
<td>1.44</td>
<td>1.54</td>
<td>1.56</td>
</tr>
</tbody>
</table>

Kg/day weight gain per rotation

Feed test taken prior to first grazing

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Bronco</th>
<th>Drover</th>
<th>Comet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry Matter %</td>
<td>13.0</td>
<td>13.0</td>
<td>12.8</td>
</tr>
<tr>
<td>Neutral Detergent Fibre %</td>
<td>36.2</td>
<td>39.3</td>
<td>39.1</td>
</tr>
<tr>
<td>Crude Protein %</td>
<td>32.0</td>
<td>29.5</td>
<td>31.7</td>
</tr>
<tr>
<td>Digestibility (DMD) %</td>
<td>90.1</td>
<td>87.7</td>
<td>87.1</td>
</tr>
<tr>
<td>ME (MJ/Kg DM)</td>
<td>13.9</td>
<td>13.5</td>
<td>13.4</td>
</tr>
</tbody>
</table>
The quiet achiever: ML99 MultiLeaf® Lucerne

With Tom Damin

My journey with ML99 MultiLeaf® Lucerne began in my early years at Pasture Genetics, when I was involved in the Plant Breeder’s Rights application process for the variety.

This developed much of my early knowledge of not only lucerne as a plant, but in particular, how to observe different characteristics between lucerne varieties.

Most people are familiar with the most observable characteristics of lucerne; the rich dark green cover in a mature stand, the green leaf and look of quality in a well-made bale of hay, and the sweet, musky smell of high protein lucerne in silage. However, there are some subtle characteristics that make ML99 MultiLeaf® Lucerne stand out from the rest.

Currently, ML99 MultiLeaf® Lucerne is the only multi-leaf lucerne in the Australian market that is readily available. Pasture Genetics has new multi-leaf varieties coming through its breeding and development pipeline, but none are ready for release just yet.

The multi-leaf trait is expressed in a percentage of stems on a percentage of the plants, and can also vary based on the health and stress levels of the plant. The multi-leaf stems also tend to be expressed on the upper section of each main stem, the newer growth. A healthy and productive stand of ML99 MultiLeaf® Lucerne should express 80 per cent of plants with a multi-leaf stem, with up to 80 per cent of each of the trifoliate leaves being a multi-leaf instead. What all this adds up to is a higher leaf-to-stem ratio on ML99 MultiLeaf® Lucerne, giving a higher proportion of quality feed in each mouthful.

Another characteristic of most highly winter active lucerne varieties is long internode spacing between each trifoliate on the stem. This is typical in the tall, erect growing lucerne varieties that frequently offer the quickest regrowth, but result in hay with a very high and thick stem content. ML99 MultiLeaf® Lucerne typically has more trifoliates on each stem, and they are closer to each other than most other highly winter actives, which helps – along with the multi-leaf trait – to further achieve that high leaf-to-stem ratio growers chase for quality.

ML99 MultiLeaf® Lucerne is Pasture Genetics’ most successful export variety of lucerne seed, and I often feel like we have forgotten how well this variety has performed in Australia simply because it has been around for a while. The success of the variety internationally has been its versatility. It has robust establishment vigour and is tolerant of a wide range of soil types. Along with the high forage yield and quality from the multi-leaf trait, it has consistently been at the top of many domestic and international lucerne assessment trials.

In South Australia, where it was developed, the typical dry summer environment can make dryland lucerne establishment a tricky proposition, as spring and summer rain cannot be relied upon to get through with a spring sowing. ML99 MultiLeaf® Lucerne is a fantastic option for an autumn establishment due to its winter activity and speed of establishment. In most parts of South Australia, Northern Victoria and Central New South Wales, I would have no trouble recommending sowing in the autumn, as late as the end of May, and depending on your frost situation, early June. As always, preparation and planting into moisture is the key as well as a good weed knock down.

Along with its versatility across different soil types and climates, ML99 MultiLeaf® Lucerne also has excellent flexibility in its purpose of use. It can make award-winning quality hay but is perfect for dryland grazing situations too. Being highly winter active it can be prone to overgrazing, so be cautious in set stocking paddocks of ML99 MultiLeaf® Lucerne for long periods with hungry animals. Having said that, a well-managed stand can be productive for up to ten years with minimal thinning, subject to environmental conditions.

I would encourage anyone who wants a good ‘all-rounder’ lucerne variety, with country better suited to an autumn sowing, to give ML99 MultiLeaf® Lucerne a try. Along with Pasture Genetics Establishment Guarantee™ programme, you will be provided with the best chance for lucerne success.
Lucerne Varietal Selection Chart

Selecting the right variety for your paddocks

What is the purpose for sowing?

When is the feed required?

How long do I want the stand to last?

<table>
<thead>
<tr>
<th>Variety</th>
<th>Q31 Lucerne</th>
<th>L56 Lucerne</th>
<th>GTL®60, L70, L71, Q75, L91, L92, ML99 Multileaf® Lucerne</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishment Vigour</td>
<td>Good. Best sown alone - not recommended for winter sowing</td>
<td>Very good - suitable for cover cropping and pasture mixes with perennial grasses</td>
<td>Excellent - suitable for cover cropping &amp; pasture mixes with annual pastures</td>
</tr>
<tr>
<td>Growth</td>
<td>95 per cent summer, five per cent winter</td>
<td>90 per cent summer, 10 per cent winter</td>
<td>80 per cent summer, 20 per cent winter</td>
</tr>
<tr>
<td>Winter-Hardiness</td>
<td>Very high</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td>Maturity</td>
<td>Shorter growth. Delayed maturity for maximum cutting and grazing flexibility</td>
<td>Similar regrowth rates to most winter actives. Extended cutting schedule and grazing period</td>
<td>Fast regrowth, early maturity</td>
</tr>
<tr>
<td>Crown</td>
<td>Below ground and broad - excellent grazing tolerance</td>
<td>Low and broader - good grazing tolerance</td>
<td>High and erect - strict rotational grazing</td>
</tr>
<tr>
<td>Forage Quality</td>
<td>Premium grade hay, chaff and silage</td>
<td>Very good quality hay, chaff and silage</td>
<td>Good quality hay and silage if given the best cutting management</td>
</tr>
<tr>
<td>Adaptation</td>
<td>Irrigation/coastal/cold climates. Best suited to medium and heavy soils</td>
<td>Dryland and irrigation. Suitable for soils ranging from deep sands to heavy clays</td>
<td>Dryland and irrigation. Suitable for most soil types</td>
</tr>
</tbody>
</table>

Lucerne Varietal Selection Chart

Dormancy W 5 6 7 9 10

Activity Winter Dormant Semi-winter Dormant Winter Active Winter Active Highly Winter Active Very Highly Winter Active

Irrigation - High Quality Hay Q31 L56 GTL®60 Q75 L91, L92 ML99 MULTILEAF®

High Quality Dryland Q31 L56 GTL®60 L71, Q75 L91, L92 ML99 MULTILEAF®

Heavy Grazing Tolerance Q31 L56 GTL®60 L71 L70 L91

Price Competitive Dryland - - - L70 L91 -

L70 v Aurora

Yield Results & Pricing Comparison
L70 Lucerne offers very competitive pricing to Aurora and therefore similar per hectare input seed costs.

- L70 Lucerne 18.5 t/ha $3,700/ha $3,400/ha
- Aurora 17.0 t/ha $3,700/ha $3,400/ha

Extra hay returns $300 per hectare, per year

Trial results

- eight per cent yield increase
ML99 MultiLeaf®

**Lucerne**

*Medicago sativa*

**Winter Activity** 7

**Min Rainfall (mm)** 250

- Seeding Rate kg/ha
  - Dryland 4-8
  - High Rainfall/Irrigation 10-20
  - Hay production 25-30

**Seed Treatment** Goldstrike LongLife® XLR8™

- ML99 MultiLeaf® Lucerne has been developed to incorporate a new level of quality and production in winter active lucerne. This increase in production is driven by high expression of multi-foliate leaves, plus all the qualities currently required by lucerne growers.
- Growers looking for winter grazing with options to cut quality hay.
- Very highly winter active cultivar.
- Near to 100 per cent true to type multifoliate expression.
- 40 per cent more leaflets than conventional lucerne.
- Superior stand life based on broad disease and nematode resistance.
- Frost tolerant to protect cold season production.

L92

**Lucerne**

*Medicago sativa*

**Winter Activity** 9

**Min Rainfall (mm)** 350

- Seeding Rate kg/ha
  - Dryland 4-8
  - High Rainfall/Irrigation 10-20
  - Hay production 25-30

**Seed Treatment** Goldstrike LongLife® XLR8™

- L92 Lucerne is set to become the leading winter active variety for the dual purpose hay and grazing markets.
- Selected for triple-race anthracnose resistance.
- Highest forage yield in the highly winter active group.
- Excellent seedling vigour to aid in quick establishment.
- High resistance to multiple pests and diseases.
- Increased persistence for a highly winter active lucerne.
- Very quick regrowth after cutting or grazing.
- Ideally suited to wide range of soil types.

L91

**Lucerne**

*Medicago sativa*

**Winter Activity** 9

**Min Rainfall (mm)** 350

- Seeding Rate kg/ha
  - Dryland 4-8
  - High Rainfall/Irrigation 10-20
  - Hay production 25-30

**Seed Treatment** Goldstrike LongLife®

- The easy-grow winter active lucerne.
- Extended grazing and hay in autumn and winter.
- Best in cropping rotations and dairy pastures.
- Preferred variety for winter sowing.
- Outstanding seedling vigour for quicker establishment.
- Suitable for all areas, with exceptional productivity on red brown earth and other light soils that are tolerant of saline conditions.
- High resistance to Spotted Alfalfa Aphid, Colletotrichum Crown Rot, and Fusarium wilt, and is highly resistant to Phytophthora root rot.
- Price competitive option to Sequel.

Q75

**Lucerne**

*Medicago sativa*

**Winter Activity** 7

**Min Rainfall (mm)** 350

- Seeding Rate kg/ha
  - Dryland 4-8
  - High Rainfall/Irrigation 10-20
  - Hay production 25-30

**Seed Treatment** Goldstrike LongLife® XLR8™

- The “Q” in Q75 Lucerne signifies the variety has demonstrated superior quality characteristics in laboratory tests and animal feeding trials.
- Q75 has set a new benchmark in forage quality for the Australian lucerne industry with the highest forage quality, Relative Feed Value (RFV) and protein in the winter active group.
- Highest forage quality in the winter active group.
- Dual purpose grazing and hay option.
- High resistance to multiple pests and diseases.
- Better persistence than most winter active varieties.
- Excellent leaf holding capacity.

L71

**Lucerne**

*Medicago sativa*

**Winter Activity** 7

**Min Rainfall (mm)** 350

- Seeding Rate kg/ha
  - Dryland 4-8
  - High Rainfall/Irrigation 10-20
  - Hay production 25-30

**Seed Treatment** Goldstrike LongLife® XLR8™

- L71 Lucerne was formed from the partnership between the New South Wales Department of Primary Industries lucerne breeding program and Pasture Genetics.
- L71 Lucerne outperforms its predecessor Genesis by four per cent on average in both dryland and irrigated conditions.
- Tested for all three races of anthracnose.
- Dryland specialist targeting grazing and hay production.
- L71 Lucerne has demonstrated excellent grazing tolerance with 65 per cent residual plants after three years of grazing.
- Excellent persistence in low rainfall dryland conditions.
- High forage quality and leaf retention.

L70

**Lucerne**

*Medicago sativa*

**Winter Activity** 7

**Min Rainfall (mm)** 350

- Seeding Rate kg/ha
  - Dryland 4-8
  - High Rainfall/Irrigation 10-20
  - Hay production 25-30

**Seed Treatment** Goldstrike LongLife®

- L70 Lucerne offers higher disease and pest package compared to Aurora.
- Superior forage genetics - higher leaf to stem ratio.
- Minimum 90 per cent germination standards exceeds current minimum certified standard for Aurora of only 60 per cent.
- L70 Lucerne seed production is derived from dryland seed production stands only. This ensures the dryland integrity and performance of L70 Lucerne is maintained when utilised in dryland grazing enterprises.
- These attributes, combined with superior plant genetics, makes L70 Lucerne an excellent new alternative to Aurora.
LUCERNE

GTL®60
Lucerne
Medicago sativa
Winter Activity 6
Min Rainfall (mm) 350

Seeding Rate
Dryland 4-8
High Rainfall/Irrigation 10-20
Hay production 25-30

Seed Treatment
Goldstrike LongLife® XLR8™

- Selected for a broad and low-set crown, high forage values, high ruminant palatability with high disease, and pest resistance ratings.
- Tested under an arduous series of strict grazing protocols over five years.
- Ideally suited as a dual-purpose variety for grazing and hay operations.
- Quick recovery after defoliation gives the ability to store plant energy into the crown.
- Retain leaf through the drying and baling process.
- Good adaptability to a wide range of soil types.
- GTL®60 Lucerne has demonstrated excellent grazing tolerance with 74 per cent residual plants measured after three year grazing trial.

L56
Lucerne
Medicago sativa
Winter Activity 5
Min Rainfall (mm) 350

Seeding Rate
Dryland 4-8
High Rainfall/Irrigation 10-20
Hay production 25-30

Seed Treatment
Goldstrike LongLife® XLR8™

- The master dual purpose grazing and hay lucerne in Australia.
- Exceptional seedling vigour.
- Very high yields.
- Exceptional forage quality.
- New industry benchmark for persistence.
- Flexible management option.
- Highest levels of pest and disease resistance of any lucerne variety in Australia. Phytophthora root rot rating of HR+.
- Semi-winter dormant.
- Adaptable across a wide range of soil types.
- Very good grazing tolerance.

Q31
Lucerne
Medicago sativa
Winter Activity 3
Min Rainfall (mm) 450

Seeding Rate
Dryland 4-8
High Rainfall/Irrigation 10-20
Hay production 25-30

Seed Treatment
Goldstrike LongLife® XLR8™

- Quickly been adopted as the leading hay and chaffing variety for premium markets.
- A superior leaf retention trait, and the highest nutritive value in retained leaf in feed and hay. High yields and excellent quality for grazing, silage, hay and chaff.
- Demonstrates greater persistence than winter active varieties, when persistence is more important than winter growth.
- Bred for specialist irrigated haymaking, silage or chaff, where premium quality is required and where hay cannot be made in winter.
- Ideally suited to leaders in forage quality.

“The cows love it – they don’t leave any behind. It converts extremely well to milk, and we get great tonnage, so it certainly makes my job easier.”

RICK BLACKSAW,
ML99 MULTILEAF® LUCERNE,
“GOON NURE”, EAST GIPPSLAND.
Q31 Lucerne

“Maximum bales. We average around four to five weeks between cuts, and it established well without a lot of water. It’s also easy to cut, stands up and doesn’t lay over.”

DAVID BARKER, FARMER
VIRGINIA SA
## Cobra

**Balansa Clover**  
*Trifolium michelianum*  
- **Min Rainfall (mm)**: 200  
- **Maturity**: Early  
- **Hard Seed Level**: High  
- **Waterlogging**: Excellent  
- **Seeding Rate**  
  - Dryland: 4-6 kg/ha  
  - High Rainfall/Irrigation: 8-12 kg/ha  

**Seed Treatment**: Goldstrike®

- Earliest flowering hard seeded balansa on the market.  
- Can be grown in an as little as 200 millimetres of annual rainfall.  
- Excellent seed down for long term pasture phase.  
- Very good salt tolerance.  
- Tolerant of waterlogging.  
- Excellent winter growth in comparison to other balansa clovers.  
- Larger seed size than Frontier, offering excellent seeding vigour.

## Longhaul

**Balansa Clover**  
*Trifolium michelianum*  
- **Min Rainfall (mm)**: 550  
- **Maturity**: Late  
- **Hard Seed Level**: High  
- **Waterlogging**: Excellent  
- **Seeding Rate**  
  - Dryland: 4-6 kg/ha  
  - High Rainfall/Irrigation: 8-12 kg/ha  

**Seed Treatment**: Goldstrike®

- Late flowering hard seeded balansa.  
- Excellent cold tolerance.  
- Late maturing allows for multiple grazing and cutting.  
- Excellent spring production ensures maximum biomass for silage and hay cuts.  
- Very good salt tolerance.  
- Tolerant of waterlogging.  
- Deep tap root aids in soils conditioning.

## SARDI Persian

**Persian Clover**  
*Trifolium resupinatum*  
- **Min Rainfall (mm)**: 300  
- **Maturity**: Early-Mid  
- **Hard Seed Level**: High  
- **Waterlogging**: Excellent  
- **Seeding Rate**  
  - Dryland: 5-8 kg/ha  
  - High Rainfall/Irrigation: 10-15 kg/ha  

**Seed Treatment**: Goldstrike®

- Superior regeneration than other persian clovers.  
- Early flowering with high levels of hard seed.  
- Broadly adapted to the soils and rainfall of the cropping region.  
- SARDI Persian Clover can be grown in a wide range of soil types - 5.5 to 8.5 CaCl.  
- Early maturity and vigour results in SARDI Persian Clover being well suited to low rainfall areas.  
- Well suited to areas prone to waterlogging, as well as mildly saline soils.

## Turbo

**Persian Clover**  
*Trifolium majus*  
- **Min Rainfall (mm)**: 450  
- **Maturity**: Late  
- **Hard Seed Level**: Low  
- **Waterlogging**: Excellent  
- **Seeding Rate**  
  - Dryland: 6-10 kg/ha  
  - High Rainfall/Irrigation: 10-15 kg/ha  

**Seed Treatment**: Goldstrike®

- Tall erect mature growth for easy manageability.  
- Rapid autumn and winter seedling vigour for better establishment.  
- High growth rates and production in all seasons, particularly in late autumn/winter.  
- Specifically developed for flexibility in grazing and multi-cut production.  
- Suitable for silage, hay and grazing.  
- Good companion legume for annual and short-term grasses.  
- Good frost tolerance.

## Zulumax

**Arrowleaf Clover**  
*Trifolium vesiculosum*  
- **Min Rainfall (mm)**: 450  
- **Maturity**: Early  
- **Hard Seed Level**: High  
- **Waterlogging**: Poor  
- **Seeding Rate**  
  - Dryland: 6-10 kg/ha  
  - High Rainfall/Irrigation: 10-15 kg/ha  

**Seed Treatment**: Goldstrike®

- Excellent grazing or fodder conservation option.  
- Good cold tolerance for better germination and vigour.  
- Preferred option for loam and sandy soils (pH 5 to 7.5).  
- Very high hard seeded levels.  
- High yields of good quality fodder.  
- Erect growth habit.  
- Safety - with limited bloat potential.

## Alexandria

**Berseem Clover**  
*Trifolium alexandrinum*  
- **Min Rainfall (mm)**: 600  
- **Maturity**: Mid-Late  
- **Hard Seed Level**: Low  
- **Waterlogging**: Very good  
- **Seeding Rate**  
  - Dryland: 8-10 kg/ha  
  - High Rainfall/Irrigation: 10-15 kg/ha  

**Seed Treatment**: Goldstrike®

- Excellent hay and fodder production.  
- Vigorous winter and spring production.  
- Multiple grazing or hay cuts.  
- Late maturing, large leaves of high nutritive value.  
- Superior spring-summer production under irrigation.  
- Adapted to heavy soil types.  
- Water logging tolerant.  
- Good tolerance to clover scorch disease.  
- Safety - with limited bloat potential.
### SARDI Rose

**Rose Clover**  
*Trifolium hirtum*  
- **Min Rainfall (mm)**: 350  
- **Maturity**: Early-Mid  
- **Hard Seed Level**: High  
- **Waterlogging**: Poor  
- **Seed Treatment**: Goldstrike®

<table>
<thead>
<tr>
<th>Seeding Rate</th>
<th>kg/ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dryland</td>
<td>5-8</td>
</tr>
<tr>
<td>High Rainfall/Irrigation</td>
<td>10-15</td>
</tr>
</tbody>
</table>

- Highest hard seededness of any rose clover currently available.  
- Outstanding clover option for hay production.  
- SARDI Rose Clover's late hard seed breakdown protects this variety against false breaks.  
- Its early maturity coupled with its high hard seed count make this rose clover variety ideal for low to mid rainfall areas of Australia.

### Bartolo

**Bladder Clover**  
*Trifolium pratense*  
- **Min Rainfall (mm)**: 350  
- **Flowering**: 105 days  
- **Hard Seed Level**: High  
- **Waterlogging**: Fair  
- **Seed Treatment**: Goldstrike®

<table>
<thead>
<tr>
<th>Seeding Rate</th>
<th>kg/ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dryland</td>
<td>8-14</td>
</tr>
<tr>
<td>High Rainfall/Irrigation</td>
<td>15-20</td>
</tr>
</tbody>
</table>

- New species to modern agriculture.  
- Ideal replacement for sub clovers.  
- Very good winter growth in comparison to sub clover.  
- Excellent pasture legume to give solid long term persistence to pasture paddocks.  
- Adapted to wide range of soil types.  
- Less affected by Redlegged Earth Mite than common sub clover species.  
- Tolerant to some herbicides.  
- Very high hard seed levels.

### Rajah

**Red Clover**  
*Trifolium pratense*  
- **Min Rainfall (mm)**: 700  
- **Leaf Type**: Medium  
- **Hard Seed Level**: Low  
- **Waterlogging**: Fair  
- **Seed Treatment**: Goldstrike®

<table>
<thead>
<tr>
<th>Seeding Rate</th>
<th>kg/ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dryland</td>
<td>3-4</td>
</tr>
<tr>
<td>High Rainfall/Irrigation</td>
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</tr>
</tbody>
</table>

- Intermediate to late flowering variety.  
- True grazing diploid type with excellent growth recovery.  
- Productive in spring, summer, and early autumn.  
- Very low oestrogen.  
- Suitable for grazing and fodder conservation.  
- Highly productive.  
- Improved grazing tolerance.  
- Good early production.

### Renegade

**Red Clover**  
*Trifolium pratense*  
- **Min Rainfall (mm)**: 600  
- **Leaf Type**: Large  
- **Hard Seed Level**: Medium  
- **Waterlogging**: Fair  
- **Seed Treatment**: Goldstrike®

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Dryland</td>
<td>3-4</td>
</tr>
<tr>
<td>High Rainfall/Irrigation</td>
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</table>

- Excellent hay diploid type for top end forage.  
- High yielding.  
- Supreme feed quality.  
- Good persistence.  
- High protein. Disease resistant.  
- Renegade Red Clover offers excellent summer production to increase pasture volumes and quality.  
- Price competitive option to add instant legume to grass based pastures.

### Jumbo

**White Clover**  
*Trifolium repens*  
- **Min Rainfall (mm)**: 700  
- **Leaf Type**: Large  
- **Hard Seed Level**: Medium  
- **Waterlogging**: Good  
- **Seed Treatment**: Goldstrike®

<table>
<thead>
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<tbody>
<tr>
<td>Dryland</td>
<td>3-4</td>
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<td>5-8</td>
</tr>
</tbody>
</table>

- Large leaved ladino type, highly winter active cultivar.  
- High summer production.  
- Strong seedling growth.  
- Outstanding winter forage production for grazing and hay.  
- Excellent heat tolerance.  
- Tolerance to Redlegged Earth Mite.  
- Good persistence under animal grazing systems.  
- Offers real quality and punch to high performing grass based pastures.

### Riesling

**White Clover**  
*Trifolium repens*  
- **Min Rainfall (mm)**: 700  
- **Leaf Type**: Large  
- **Hard Seed Level**: Medium  
- **Waterlogging**: Good  
- **Seed Treatment**: Goldstrike®

<table>
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</tbody>
</table>

- Highly persistent and heat tolerant.  
- Dense leaves.  
- High stolon density.  
- Resistant to many diseases, nematodes and insect pests.  
- Strong root system.  
- Persists under heavy grazing.  
- Excellent long term performance.  
- Excellent companion species in high performance grass blends.  
- Riesling White Clover offers long term perennial legume base to high rainfall/irrigation properties.
### Dalsa

**Sub Clover**
*Trifolium subterraneum*

- **Min Rainfall (mm):** 325
- **Flowering:** 97 days
- **Burr Burial Strength:** 9
- **Hard Seed Level:** 9
- **Waterlogging:** Poor

**Tolerance**

<table>
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</tr>
</tbody>
</table>

**Seed Treatment**
Goldstrike LongLife®

- Suited to acid to neutral soils.
- High levels of hardseed and very strong seed burial.
- Solid legume to act as backbone species in pasture blends.
- Very good herbage production.
- Outstanding seed production, with the largest of all Subterranean seed.
- Regenerates better than most other strains of early to mid-season maturity sub clovers. Excellent burr burial strength to allow for maximum seed.
- High hard seed levels ensure regeneration over many years.

### Clare 2

**Sub Clover**
*Trifolium brachycalycinum*

- **Min Rainfall (mm):** 325
- **Flowering:** 130 days
- **Burr Burial Strength:** 1
- **Hard Seed Level:** 2
- **Waterlogging:** Poor

**Tolerance**

<table>
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<tr>
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</tbody>
</table>

**Seed Treatment**
Goldstrike LongLife®

- Suited to acid to neutral soils.
- Excellent hay type.
- Vigorous growth in autumn and early winter.
- Oestrogenic potency is low - safe for all classes of livestock.
- Seeds are typically 40 per cent larger than other sub clover leading to excellent early vigour.
- Resistant to Cercospora leaf spot, leaf rust, Powdery mildew and Subterranean clover mottle virus.
- Some tolerance to clover scorch.
- Less seedling damage from Redlegged Earth Mite.
- Good tolerance to Bluegreen Aphid.

### Ovaflow

**Sub Clover**
*Trifolium subterraneum*

- **Min Rainfall (mm):** 600
- **Flowering:** 140 days
- **Burr Burial Strength:** 6
- **Hard Seed Level:** 2
- **Waterlogging:** Poor

**Tolerance**

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</tbody>
</table>

**Seed Treatment**
Goldstrike LongLife®

- Suited to acid to neutral soils.
- Excellent winter production.
- Prolific seed producer.
- Extend feed production in secure spring rainfall areas.
- Works well in pastures with dominance in early winter.
- Highly nutritious feed.
- Well suited to intensive pasture grazing systems.
- High dry matter yields.
- Large leaf type suitable for long season growth.

### Hatrik

**Sub Clover**
*Trifolium yanninicum*

- **Min Rainfall (mm):** 450
- **Flowering:** 114 days
- **Burr Burial Strength:** 5
- **Hard Seed Level:** 2
- **Waterlogging:** Very good

**Tolerance**

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**Seed Treatment**
Goldstrike LongLife®

- White seeded variety.
- Suited to acid to neutral soils as a long term pasture option with forage grasses.
- Tolerant to waterlogged or poorly drained soils.
- Excellent seedling vigour.
- High herbage production.
- Good seed yields and vigorous growth.
- Quality forage for grazing, hay or silage.
- Suited to good dryland rainfall or irrigated country where long term Yanninicum sub clover is required.
Maximising milk production with multiscpecies pasture

By Denham Thompson

Ben Gould is a fifth-generation farmer running a 250 cow milking herd on his 577-acre dairy farm near Casino, New South Wales. When driving into the farm and looking over the 250 acres of irrigated country, it is clear that Ben knows how to grow grass.

However, The Gould’s have long been innovative milk producers, and with increasing climatic variability becoming increasingly challenging, Ben decided to try something new.

“With a dry start to the year, we had to think outside the box,” Ben noted.

With the aid of his agronomist, a customised Pasture Genetics blend was designed, comprising a diverse mix of forage legumes, herbs and brassica. The intention was to utilise species that would extend the grazing season with high-quality feed, filling the late spring and early autumn feed gap.

Ben’s usual program for the paddock is oats sown in autumn which he over-sows with ryegrass after the first grazing, followed by millet in the spring. However, by growing a pasture blend that will persist through multiple seasons, he has cut down on inputs and labour.

“Using this blend has allowed us to spend less time spraying, working country and wetting it up to plant millet,” Ben continued.

The blend was planted in early April alongside Ben’s ryegrass based pastures with a double disc opener after the previous season’s residual millet was sprayed out.

“The brassica took off and gave us a lot of early feed,” he explained.

Although the seasonal growth patterns of the individual species vary, the combination provided Ben with a system that can produce year-round production. Some species in the blend like Pasture Genetics Bouncer Hybrid Forage Brassica produce explosive early growth while Turbo Persian Clover provides high protein autumn/spring feed and Balance Chicory really shines as temperatures rise mid-spring to summer. Its fast rumen clearance rate also leads to increased voluntary feed intake and production.

“I’m very happy! The cattle have adapted well.

“We didn’t get the bulk but we got the milk,” Ben said, comparing the pasture blend with his usual oat/ryegrass/millet program.

Growing this multispecies blend alongside his ryegrass pastures has added an extra dimension to Ben’s seasonal feed plan.

“It’s added extra grazing time in our rotation, allowing other paddocks to bulk up,” he said.

A common characteristic for many forage herb and legume species is the tap root, which can store carbohydrates that can improve persistence and also provide a degree of drought tolerance by accessing moisture and nutrients deeper in the soil profile. By utilising this blend, Ben has been able to not only extend his grazing season but also reduce input costs across multiple seasons all while improving the condition of his soil.
Cobra Balansa Clover is the perfect companion

By Hugh Graham

Damien Hosie and his family own and operate “Bronzewing”, a 1,800-acre mixed farming enterprise just south of Lockhart in the Southern Riverina.

A requirement for more persistence and longevity in his pasture rotation system saw Damien add hard seeded legumes to his lucerne some years ago. Since then he has been refining this process and the varieties used with even greater success.

Pasture Genetics Cobra Balansa Clover made a perfect addition into the blend that was sown into 100 hectares in May 2018. Since then the seasons have been tough with some of the lowest rainfall totals on record; 2019 has seen about eight inches up to November, very low in comparison to the expected long term 18-inch rainfall average.

Seed recruitment from Cobra was good enough that in the second year of the pasture Cobra plant numbers were excellent and rivalled that of Pasture Genetics Cavalier Spineless Burr Medic. Both varieties are hard seeded and combined very well with Pasture Genetics varieties, L56 Lucerne and SARDI Persian Clover, to create a full paddock of quality feed in a very tough year.

Damien has been very pleased with the amount of feed he has got off the paddock since it was sown, with Cobra being a real stand out. With its prolific seed set and very high levels of hard seed as well as excellent winter vigour, Cobra proved its worth: in its second year, the paddock has kept 400 twin ewes and 1530 lambs in condition for four months. Cobra gets going early for a balansa clover and the extra winter growth while the lucerne is still quite dormant is invaluable.

To get the best out of his paddock, Damien split it using a hot wire, to allow for recovery of some areas while still being able to graze what he described as “definitely his best paddock of feed this year.” He also ensures there is dry feed available in the form of barley straw as well as mineral supplements to help reduce the incidence of animal health issues.

With the focus on animal production increasing on “Bronzewing”, Damien used the opportunity to show a test strip of this pasture blend without the use of a cover crop. Planted at 8 kilograms per hectare, Damien said the emergence and establishment without the cover crop far exceeded his expectations. Without the competition for moisture and resources, the non-cover crop areas produced significantly higher volumes of feed in a shorter period. It also stayed greener for longer allowing Damien to get more production off these areas than he otherwise would have.

Having seen the results firsthand, Damien plans on moving away from the use of a cover crop in favour of a better-established pasture that gives more bulk of feed for a more extended season.

Image: Pasture Genetics Cobra Balansa Clover seed recruitment in year two of the pasture, providing the perfect accompaniment to L56 Lucerne.

Renegade is the perfect addition

By Nicole Frost

Merv Steer runs a beef breeding operation in Healesville, located in Victoria’s beautiful Yarra Valley region. The hallmark property runs 340 Angus breeders on 788 acres of river flats and gentle slopes. The highly productive alluvial soils that run alongside the Yarra River support a number of crops for both fodder and grazing. Two years ago, Merv sowed a Pasture Genetics custom blend of Mona Tetraploid Italian Ryegrass, Renegade Red Clover and Jumbo White Clover with great success.

Renegade was an obvious addition to the blend as Merv had achieved great results with red clover in the past. At just three kilograms per hectare Renegade established perfectly. The aim of the pasture was to provide high-quality hay and grazing during the warmer months. The upright growth habit of Renegade meant that it was able to compete well with the Mona to produce fantastic quality hay. From the 18 hectares sown to the blend, 450 large round bales of hay were cut.

“That’s more than we ever have,” Merv said, and “it has been beautiful hay to feed out. The cattle don’t leave any behind.”

Red clover is a summer active species which means that in this high rainfall area, Renegade is capable of producing premium quality feed right through summer. Merv was fortunate to receive a good shower of rain after cutting the paddock for hay which got the paddock back up and running again. The accompanying photo was taken on January 30, 2019, and shows the regrowth post-hay cut. This is why Merv is such a fan of Renegade: it is capable of utilising the available moisture to produce high quality, valuable summer feed which he can use to finish his steers or to feed cows and calves.

The paddock is still performing exceptionally well in its second year and with plenty of plants per square metre, it’s hoped to last another year yet.

Image: Merv Steer inspecting the regrowth of his Pasture Genetics custom blend after cutting it for hay.
The critical nature of seeding depth

BY TOM DAMIN

One of the most underestimated but critical factors in achieving successful establishment in pastures is seed placement and seeding depth. For best chance at establishment from germinated seed, sowing into moisture with good seed to soil contact is essential. Seed will nearly always prefer some soil coverage, and good contact with the soil. Accurate placement from seeding methods such as a disc seed with press wheels will offer vastly superior establishment rates to other methods such as broadcasting and harrowing.

As a general rule of thumb, the larger the seed size, the greater the seed can be sown at depth. Seed size is a good indication of the energy reserve available in the seed to be able to grow through the soil before emergence, and the amount of time that the seedling can survive for before needing to begin photosynthesis for its own energy production. It is often advantageous for many crops to be sown at depth to ‘chase moisture’ deeper into the profile. However, with many species with small seeds, sowing too deep will be detrimental to the survival of the seedling. If the seed is sown at too greater depth, then the plant will never make it out of the ground before expending all the energy reserves in its small seed. As an additional factor, the time it takes for the seedling to break ground will also be a cause of pastures getting away slowly, and early in the season can set back a crop from getting established substantially in time, if not also affecting plant density.

Small seeds such as most medics, clovers and lucerne are at their most vulnerable to being sown too deep. In the photographs below we simulated an establishment in heavy brown clay with three different seed types: Tetrone Annual Italian Ryegrass, Subzero Hybrid Forage Brassica and GTL60 Lucerne. As you can see the Lucerne really struggled to emerge at anything but the shallowest sowing depth. The Ryegrass and Brassica did much better, but you can still see the effects, particularly in the brassica, at the rate of establishment decreasing with the increasing depth.

So when it comes to sowing time in 2020, consider your seed type and consider your equipment. A good rule of thumb with these smaller seeds is to proceed on the side of caution, and shallower is probably better in most situations. Conveniently for anyone using Pasture Genetics proprietary varieties, any failed establishment in the first 30 days post sowing will be covered under our Establishment Guarantee™ program, which even applies in situations where seed was simply sown too deep.

<p>| Percentage of Lucerne seeds established compared with different seeding depths and soil types |
|-----------------------------------|-----|-----|-----|</p>
<table>
<thead>
<tr>
<th>Sand</th>
<th>Loam</th>
<th>Clay</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.25cm</td>
<td>71%</td>
<td>59%</td>
</tr>
<tr>
<td>2.5cm</td>
<td>73%</td>
<td>55%</td>
</tr>
<tr>
<td>3.75cm</td>
<td>55%</td>
<td>31%</td>
</tr>
<tr>
<td>5.0cm</td>
<td>40%</td>
<td>16%</td>
</tr>
</tbody>
</table>

GTL60 Lucerne

Subzero Forage Brassica

Tetrone Annual Italian Ryegrass
Features of Medics

Medics are self-regenerating, annual legumes that grow in autumn, winter and spring above 250 millimetres of rainfall.

They are best suited to crop rotations on neutral to alkaline soils. Both freshly growing forage and the seed pods produced by annual medics are a high protein source. Both protein sources allow grazing animals to sustain good levels of wool and meat production over the winter and summer months.

This nitrogen fixation as a direct flow on effect to future cropping and pasture rotations.

Annual medics are extremely hard seeded, therefore if established successfully and allow to seed down, regeneration in subsequent years is extremely good. Their hard seeded nature also provides excellent protection against drought and false breaks.

- Can be sown in to previous crop stubble prior to autumn break.
- Medics are a proven partner to ryegrass. Utilised widely throughout the dairy, beef and sheep industry as they offer excellent winter production superior to other pasture legumes.
- They grow best on neutral to alkaline soils - soils with pH 6.0 to 8.5.
- Medics are capable of regenerating each year without reseeding. Seed pods lay dormant on top of the soil during summer. Seeds then germinate and produce pasture in autumn following the season break. Medics aid in maintaining and increasing soil health and fertility via nitrogen fixation, and biomass production which assist in building organic matter.
- Forage production from medics is high in, and maintains protein, whether being utilised for grazing, silage, or forage production.
- Drought tolerance and persistence over a wide range of soils and rainfall areas. Medics can germinate, grow, flower and set seed on as little as 80 millimetres of rainfall, spread over two to three months.
- Annual medics are sown with cereal crops in cropping rotations. However, they can be sown on their own for fodder production.

Medic based pastures are capable of producing in excess of eight tonne of biomass per hectare. Long-term research suggests that approximately 20-25 kilograms per hectare of nitrogen is fixed with every tonne of above ground drymatter produced. Eight tonne of above ground biomass has the potential to fix 160 or more kilograms of nitrogen per hectare.

Cavalier Spineless Burr  Jaguar Strand  Caliph Barrel  Silver Snail  Bindaroo Button

The aggressive seeding ability of Cavalier Spineless Burr Medic demonstrated in a seed production paddock.
### Cavalier
**Spineless Burr Medic**  
*Medicago polymorpha var brevispina*

- Mid-maturing variety, flowering 90 - 95 days in regions with an average 350 mm of annual rainfall.
- Successfully used in pasture systems with annual and Italian grasses to bolster winter grazing capacity.
- Superior winter growth to sub clover therefore helping to fill traditional winter feed gaps.
- An average of 13.8% soft seed in the first year.

**Medicago littoralis**  
**Strand Medic**

- Excellent addition to long term pastures where persistence is sought after.
- Improved seedling tolerance to Redlegged Earth Mite and Lucerne Flea.
- Excellent addition to long term pastures where winter production is paramount.

- Producer of larger quantities of seed than barrel medic.
- High hard seed levels.
- Resistant to major aphid pests such as Spotted Alfalfa and Bluegreen Aphids.
- Early flowering, self-regenerating annual forage legume with distinctive flattened, button-shaped pods.

- New leaf retention gene allows for increased quality forage production.
- Leafy, vigorous and competitive, high quality forage production.
- Resistant to major aphid pests such as Spotted Alfalfa and Bluegreen Aphids.
- Improved seedling tolerance to Redlegged Earth Mite and Lucerne Flea.

**Jaguar**

- Early flowering, self-regenerating annual forage legume with distinctive flattened, button-shaped pods.
- Ideal legume to complement tropical grass based pastures.
- Producer of larger quantities of seed than barrel medics in dry and marginal environments.
- Well adapted to low rainfall and marginal zones.
- Adapted to heavy and loamy textured, alkaline soils in Queensland and north-western New South Wales, and alkaline, sandy and loamy soils in southern Australia.
- Semi-prostrate in habit, and flowers and sets seed readily under grazing.
- High seed producer – grazing does not diminish its seed production, which can occur with other medic varieties, e.g. snail medic.

### Caliph
**Barrel Medic**  
*Medicago truncatula*

- Earliest maturing Aphid-resistant barrel medic.
- Good annual production where long term persistence is sought after.
- Good seedling and early plant vigour.
- Moderate tolerance of soil boron toxicity.
- Resistant to Spotted Alfalfa and Bluegreen aphids.
- High hard seed levels.

- Well adapted to low rainfall and marginal zones.
- Excellent forage legume with distinctive flattened, button-shaped pods.
- Ideal legume to complement tropical grass based pastures.
- Producer of larger quantities of seed than barrel medics in dry and marginal environments.
- Well adapted to low rainfall and marginal zones.
- Adapted to heavy and loamy textured, alkaline soils in Queensland and north-western New South Wales, and alkaline, sandy and loamy soils in southern Australia.
- Semi-prostrate in habit, and flowers and sets seed readily under grazing.
- High seed producer – grazing does not diminish its seed production, which can occur with other medic varieties, e.g. snail medic.

### Lynx
**Barrel Medic**  
*Medicago truncatula*

- New leaf retention gene allows for increased quality forage production.
- Leafy, vigorous and competitive, high quality forage production.
- Resistant to major aphid pests such as Spotted Alfalfa and Bluegreen Aphids.

- Early flowering, self-regenerating annual forage legume with distinctive flattened, button-shaped pods.
- Ideal legume to complement tropical grass based pastures.
- Producer of larger quantities of seed than barrel medics in dry and marginal environments.
- Well adapted to low rainfall and marginal zones.
- Adapted to heavy and loamy textured, alkaline soils in Queensland and north-western New South Wales, and alkaline, sandy and loamy soils in southern Australia.
- Semi-prostrate in habit, and flowers and sets seed readily under grazing.
- High seed producer – grazing does not diminish its seed production, which can occur with other medic varieties, e.g. snail medic.

### Silver
**Snail Medic**  
*Medicago scutellata*

- Excellent addition to long term pastures where persistence is sought after.
- Improved seedling tolerance to Redlegged Earth Mite and Lucerne Flea.
- Excellent addition to long term pastures where winter production is paramount.

- New leaf retention gene allows for increased quality forage production.
- Leafy, vigorous and competitive, high quality forage production.
- Resistant to major aphid pests such as Spotted Alfalfa and Bluegreen Aphids.
- Improved seedling tolerance to Redlegged Earth Mite and Lucerne Flea.

### Jaguar
**Strand Medic**  
*Medicago littoralis*

- New leaf retention gene allows for increased quality forage production.
- Leafy, vigorous and competitive, high quality forage production.
- Resistant to major aphid pests such as Spotted Alfalfa and Bluegreen Aphids.
- Improved seedling tolerance to Redlegged Earth Mite and Lucerne Flea.

- Early flowering, self-regenerating annual forage legume with distinctive flattened, button-shaped pods.
- Ideal legume to complement tropical grass based pastures.
- Producer of larger quantities of seed than barrel medics in dry and marginal environments.
- Well adapted to low rainfall and marginal zones.
- Adapted to heavy and loamy textured, alkaline soils in Queensland and north-western New South Wales, and alkaline, sandy and loamy soils in southern Australia.
- Semi-prostrate in habit, and flowers and sets seed readily under grazing.
- High seed producer – grazing does not diminish its seed production, which can occur with other medic varieties, e.g. snail medic.

### Bindaroo
**Button Medic**  
*Medicago orbicularis*

- New leaf retention gene allows for increased quality forage production.
- Leafy, vigorous and competitive, high quality forage production.
- Resistant to major aphid pests such as Spotted Alfalfa and Bluegreen Aphids.
- Improved seedling tolerance to Redlegged Earth Mite and Lucerne Flea.

- New leaf retention gene allows for increased quality forage production.
- Leafy, vigorous and competitive, high quality forage production.
- Resistant to major aphid pests such as Spotted Alfalfa and Bluegreen Aphids.
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- New leaf retention gene allows for increased quality forage production.
- Leafy, vigorous and competitive, high quality forage production.
- Resistant to major aphid pests such as Spotted Alfalfa and Bluegreen Aphids.
- Improved seedling tolerance to Redlegged Earth Mite and Lucerne Flea.
Subtropical

Callide

*Chloris gayana*

- Min Rainfall (mm): 650+
- pH Range: 5.5-8
- Seeding Rate (kg/ha): 6-12
- Seed Treatment: Goldstrike® XLR8™

- Drought tolerant.
- Later flowering than Katambora.
- Less cold tolerant than Katambora.
- Callide offers higher palatability compared to Katambora.

Katambora

*Chloris gayana*

- Min Rainfall (mm): 650+
- pH Range: 5.5-8
- Seeding Rate (kg/ha): 6-12
- Seed Treatment: Goldstrike® XLR8™

- Very drought tolerant.
- Good salt tolerance.
- Tolerates heavy grazing.
- Not adapted to acid, infertile soils.
- Requires high fertility to persist.
- Poor tolerance of waterlogging.

Bisset

*Bothriochloa insculpta*

- Min Rainfall (mm): 650+
- pH Range: 5.5-8
- Seeding Rate (kg/ha): 6-12
- Seed Treatment: Goldstrike® XLR8™

- Highly palatable perennial grass.
- Good drought tolerance.
- Persists on a wide range of soil types.
- Highly stoloniferous resulting in excellent ground cover.
- Withstands heavy grazing.
- Late flowering type, productive into late autumn.

Gatton

*Panicum maximum*

- Min Rainfall (mm): 650+
- pH Range: 5.5-8
- Seeding Rate (kg/ha): 6-12
- Seed Treatment: Goldstrike® XLR8™

- Suits all soil types except heavy clays.
- Requires moderate to high fertility.
- Doesn’t tolerate waterlogging.
- Moderately drought tolerant.
- Suited to grazing and cutting.

Bambatsi

*Panicum coloratum*

- Min Rainfall (mm): 500+
- pH Range: 5.5-8
- Seeding Rate (kg/ha): 6-12
- Seed Treatment: Goldstrike® XLR8™

- Suited to self-mulching, black clay soils.
- Tolerant of temporary waterlogging.
- Tolerant of moderate soil salinity.
- Cold tolerant and drought resistant.
- High forage quality.

Premier

*Digitaria smutii*

- Min Rainfall (mm): 650+
- pH Range: 5.5-8
- Seeding Rate (kg/ha): 6-12
- Seed Treatment: Goldstrike® XLR8™

- Suited to light textured soils.
- Tolerates acid soils.
- Recruits well on lighter soils.
- Very palatable.
- Drought and frost tolerant.

ALL OF PASTURE GENETICS SUBTROPICAL GRASSES COME STANDARD WITH OUR GOLDSTRIKE XLR8™ SEED TREATMENT

Goldstrike XLR8™ is comprised of the highest quality seed and coating technology, and is the best establishment package for subtropical grasses. Please note, subtropical grasses are excluded from Pasture Genetics Establishment Guarantee™ program.
Novel Endophytes

Happe
Happe is the benchmark pasture endophyte. Happe was originally discovered in meadow fescue and has since been naturally transferred into a range of other grass species. Happe provides protection against insects above and below the ground, lolines that offer completely safe grazing for livestock, improved livestock acceptance, and increased grass performance. Happe is also easy to use, will increase the persistence of the pasture, and your animals will enjoy the palatability. Happe is safe for use with cattle and sheep, but is not suitable for horses.

Protek™
Protek™ is a novel endophyte that produces lolines for above and below the ground insect protection, in particular, against African Black Beetle. Protek™ improves pasture performance by increasing resistance to insect damage, therefore reducing stand thinning, as well as assisting tall fescue to persist through environmental stresses. Protek™ is only available for tall fescue. Protek™ is safe for use with cattle and sheep, but is not suitable for horses.

Duet
Duet is a combination of Happe and Edge novel endophytes. Edge is also friendly to sheep and cattle, but is not suitable for horses. Edge produces peramine, so different plants within the pasture will produce peramine and lolines, providing protection from a broad spectrum of insects, and their various lifecycle stages. This combination will maximise the persistence and production of ryegrass pastures, while also keeping pastures safe and palatable. Duet is available in a limited range of ryegrass cultivars.

Pest tolerance of Happe & Duet

<table>
<thead>
<tr>
<th>Insect</th>
<th>Happe</th>
<th>Duet</th>
<th>Standard</th>
<th>Without</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentine Stem Weevil</td>
<td>High</td>
<td>Very High</td>
<td>Very High</td>
<td>None</td>
</tr>
<tr>
<td>African Black Beetle</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>None</td>
</tr>
<tr>
<td>Root Aphid</td>
<td>Very High</td>
<td>Very High</td>
<td>Medium</td>
<td>None</td>
</tr>
<tr>
<td>Porina</td>
<td>Very High</td>
<td>Very High</td>
<td>Low</td>
<td>None</td>
</tr>
<tr>
<td>Pasture Mealybug</td>
<td>Very High</td>
<td>Very High</td>
<td>Very High</td>
<td>None</td>
</tr>
</tbody>
</table>

An endless journey of discovery.

Focus
Pasture Genetics strives to bring you new endophytes from around the world to improve pasture persistence, productivity and animal safety.

What is an endophyte?
An endophyte is a fungus that lives inside a plant. It assists growth, insect protection, nutrient acquisition and improves the plant’s ability to tolerate stress, enhancing overall resistance.

Image: Pasture Genetics territory manager Nicole Frost in a paddock of 24Seven Edge Diploid Perennial Ryegrass on an irrigated dairy farm in Plenty, Tasmania.
Pasture Grasses

Tetrone

**Tetraploid Annual Italian Ryegrass**

*Lolium multiflorum/westernworlds*

**Heading Date**: +5 days

**Life Span**: < 9 mths

**Min Rainfall (mm)**: 350

**Maturity**: Early

**Seeding Rate** kg/ha

- Dryland: 10-15
- High Rainfall/Irrigation: 25-30

- Tetrone Tetraploid Annual Italian Ryegrass originated from the same source of germplasm as the well known Tetila ryegrass.
- Tetrone Tetraploid Annual Italian Ryegrass has later maturity than Tetila and consequently higher nutritive value (crude protein and metabolisable energy) for longer into spring. Tetrone Tetraploid Annual Italian Ryegrass may be used for grazing, silage, and hay production.
- Due to Tetrone Tetraploid Annual Italian Ryegrass exceptionally quick establishment, it is suitable for direct drilling into existing pastures. It is extremely frost tolerant, therefore has the ability to continue producing quality feed throughout winter.
- Annual by nature with strong winter growth.
- High levels of soluble carbohydrate and metabolisable energy.

Jivet

**Tetraploid Annual Italian Ryegrass**

*Lolium multiflorum/westernworlds*

**Heading Date**: +18 days

**Life Span**: < 1 yr

**Min Rainfall (mm)**: 600

**Maturity**: Late

**Seeding Rate** kg/ha

- Dryland: 10-15
- High Rainfall/Irrigation: 25-30

- The flowering date of Jivet Tetraploid Annual Italian Ryegrass is +18 days longer than Tetila and +9 over Winter Star II which offers additional feed and higher dry matter production late into the season.
- A longer growth period allows for additional milkings and stock carrying capacity.
- Late maturing tetraploid ryegrass.
- Excellent option in good dryland or irrigation areas where the extended spring and early summer growth is required.
- Rapid establishment/winter activity.
- Ability to respond to late season rainfall when most ryegrasses will not continue.
- Exceptional feed quality. A highly regarded variety utilised throughout many top end farming systems.

Mona

**Tetraploid Italian Ryegrass**

*Lolium multiflorum*

**Heading Date**: +28 days

**Life Span**: 2 yrs

**Min Rainfall (mm)**: 700

**Maturity**: Late

**Seeding Rate** kg/ha

- Dryland: 10-15
- High Rainfall/Irrigation: 25-30

- Mona Tetraploid Italian Ryegrass is a replacement to Jeanne Tetraploid Italian Ryegrass.
- The objective of Pasture Genetics’ Forage Crop Program was to develop a cultivar with improved production in all seasons, and the ability to produce for two or more years in favourable climates. Testing has confirmed that Mona Tetraploid Italian Ryegrass has successfully out yielded Jeanne Tetraploid Italian Ryegrass by an outstanding 34 per cent.
- Mona Tetraploid Italian Ryegrass has a very late heading date. This extends the period in spring when producers can graze, or cut very leafy, high quality forage, by up to one month.
- It’s winter and early spring growth is not compromised by the late heading, that can occur in other late flowering Italian ryegrasses.
- Very late flowering +28 days, gives excellent long season production.
- Larger, bulkier, silage and hay cuts to build on farm feed requirements.
- Will produce for two or more years in favourable conditions.

Perun

**Tetraploid Festulolium**

*Festuca braunii*

**Heading Date**: +12 days

**Life Span**: 2-4 yrs

**Min Rainfall (mm)**: 700

**Maturity**: Late

**Seeding Rate** kg/ha

- Dryland: 10-15
- High Rainfall/Irrigation: 25-30

- Cross-species of 60 per cent Italian ryegrass with 40 per cent meadow fescue.
- Offers the quality trait from the Italian ryegrass plus the adaption and root depth of the meadow fescue.
- A wider adaption of soils and rainfall zones that in the past have not been able to sustain straight Italian ryegrass.
- Longer summer shoulder that provides good quality when feed quality traditionally drops.
- Very good disease resistance.
- Prefers to be sown early autumn before soil temperatures are too low.
- Excellent option for stitching into existing pastures such as lucerne or tall fescue.
- Weight gain increase over Crusader by 29 per cent.

Jackpot

**Diploid Italian Ryegrass**

*Lolium multiflorum*

**Heading Date**: +22 days

**Life Span**: < 2-3 yrs

**Min Rainfall (mm)**: 700

**Maturity**: Late

**Seeding Rate** kg/ha

- Dryland: 10-15
- High Rainfall/Irrigation: 25-30

- Jackpot Diploid Italian Ryegrass was bred by DLF Seeds’ Australasian breeding program.
- It was bred to replace long standing favourite Icon Diploid Italian Ryegrass. Testing has confirmed that Jackpot Diploid Italian Ryegrass successfully out yields Icon Diploid Italian Ryegrass by an outstanding 26 per cent and Knight by nine per cent.
- Its late heading date prolongs feed quality in spring, giving a greater opportunity to increase overall production.
- An excellent option for producers seeking high quality production, and manageability.
- Excellent long season production.
- Fine leaved cultivar, with improved growth in all seasons.

Perseus

**Tetraploid Festulolium**

*Festuca braunii*

**Heading Date**: +17 days

**Life Span**: 2-4 yrs

**Min Rainfall (mm)**: 700

**Maturity**: Late

**Seeding Rate** kg/ha

- Dryland: 10-15
- High Rainfall/Irrigation: 25-30

- Endophyte

- Edge/ N/E

- Cross-species of 75 per cent Italian ryegrass with 25 per cent meadow fescue.
- Slightly higher percentage of Italian ryegrass genetics than found in Perun Festulolium.
- Longer lasting over multiple seasons in comparison to a straight Italian ryegrass.
- Extended window of grazing production.
- Maintains quality longer into the season.
- Very good disease resistance.
- Increased palatability and weight gain performance over a straight Italian ryegrass.
- Excellent companion species for established lucerne and tall fescue, and other grasses as an oversow.
**Jeta**

**Hybrid Tetraploid Long Rotation Ryegrass**

- **Lolium boucheanum**
- **Heading Date** +10 days
- **Life Span** 5-7 yrs
- **Min Rainfall (mm)** 700
- **Maturity** Mid

**Seeding Rate** kg/ha
- Dryland 10-15
- High Rainfall/Irrigation 25-30

**Endophyte** Edge/Happe/LE

- Jeta Hybrid Tetraploid Long Rotation Ryegrass is a cross between perennial ryegrass (80 per cent) to provide persistence, and Italian ryegrass (20 per cent) for increased winter growth.
- Fast establishing.
- Very high yielding.
- Reliable early and late season growth.
- High disease resistance.
- Successful in a range of climates and grazing methods.
- Production of an Italian with the persistence of a perennial.

**Valley**

**Diploid Perennial Ryegrass**

- **Lolium perenne**
- **Heading Date** -17 days
- **Life Span** 7-10 yrs
- **Min Rainfall (mm)** 550
- **Maturity** Mid
- **Type** Prostrate

**Seeding Rate** kg/ha
- Dryland 8-14
- High Rainfall/Irrigation 20-25

**Min Rainfall (mm)** 700

**Endophyte** Edge

- Kangaroo Valley germplasm – excellent persistence.
- Extremely vigorous winter & early spring production.
- Suited to marginal perennial ryegrass areas of 550 millimetres of rainfall or above.
- Widely adapted, semi-erect growth habit, and is very deep rooted.
- Frost tolerant and hardy cultivar, able to withstand periods of drought. Summer dormant to enhance long term persistence.
- Vigorous establishment results in the production of early season feed.
- Excellent companion option with early seeded subclover or medics.
- Ideal for sheep enterprises with fine wool/lambs.
- Long-term pasture option.

**Drylander**

**Diploid Perennial Ryegrass**

- **Lolium perenne**
- **Heading Date** -7 days
- **Life Span** 7-10 yrs
- **Min Rainfall (mm)** 550
- **Maturity** Early

**Seeding Rate** kg/ha
- Dryland 8-14
- High Rainfall/Irrigation 20-25

**Min Rainfall (mm)** 550

**Endophyte** Edge/Happe/LE

- High winter activity/summer dormant.
- A leafy and well tillered derivative of Victorian Perennial Ryegrass germplasm.
- Drylander Diploid Perennial Ryegrass responds quickly to autumn rain, is frost tolerant and with its excellent early cool season growth, provides good winter feed.
- Suitable for fringe areas of perennial ryegrass usage.
- Extremely vigorous winter and early spring production.
- Maintains a high level of persistence in pastures.
- Drylander Diploid Perennial Ryegrass seed is produced and harvested only from dryland production seed crops to maintain its dryland survivability integrity.

**Ansac**

**Diploid Perennial Ryegrass**

- **Lolium perenne**
- **Heading Date** +14 days
- **Life Span** 5-7 yrs
- **Min Rainfall (mm)** 700
- **Maturity** Mid

**Seeding Rate** kg/ha
- Dryland 10-15
- High Rainfall/Irrigation 25-30

**Endophyte** Edge/Happe/LE

- Ansac Diploid Perennial Ryegrass is a high performance perennial with very good annual production. Its real strength is in winter, when it yielded better than 10 of the 11 cultivars it was tested against.
- This makes Ansac Diploid Perennial Ryegrass an ideal choice for farms wanting to maximise pasture supplies in winter and early spring.
- +14 day maturity ideal to meet and manage feed requirements.
- Excellent seedling vigour for quick pasture establishment.
- High winter performance – unique to only a few perennial ryegrasses.
- Ability to target feed production in winter when high quality forage options are limited.
- Ideal ryegrass to use in high performance based systems.
- Very densely tillered to offer excellent grazing characteristics.
- Excellent winter production with late season remaining leafy and digestible when others go stemmy.
- Impact Diploid Long Rotation Ryegrass has good persistence similar to perennial ryegrass.
- Excellent winter production with late season shoulder pending moisture availability. Therefore, has potential to deliver extended periods of high quality forage into late spring and early summer.
- Low level of aftermath heading therefore reducing the impact of staggered ear emergence reducing feed quality.
- Low endophyte type.
- Very densely tillered to offer excellent grazing characteristics.
- Impact Diploid Long Rotation Ryegrass flowers +21 days later than Nui ryegrass.
- Densely tillered, fine leaf ryegrass that heads later in spring remaining leafy and digestible when others go stemmy.

**Impact**

**Diploid Long Rotation Ryegrass**

- **Lolium perenne**
- **Heading Date** +21 days
- **Life Span** 5-7 yrs
- **Min Rainfall (mm)** 700
- **Maturity** Late

**Seeding Rate** kg/ha
- Dryland 10-15
- High Rainfall/Irrigation 25-30

**Min Rainfall (mm)** 550

**Endophyte** Edge/Happe/LE

- Excellent annual production.
- Good seasonal growth, although 24Seven Diploid Perennial Ryegrass has a very late heading date, unlike some other cultivars, there is no penalty for winter and early spring production.
- 24Seven Diploid Perennial Ryegrass has a high tiller density and strong ground cover, which are the key characteristics needed for ryegrass to tolerate grazing pressure in both wet and dry conditions.
- Extended feed quality (+24 day heading date). This gives farmers that extra period of high energy and protein pasture to improve animal production and silage quality.
- Low aftermath heading.
**Evans**

Tetraploid Perennial Ryegrass  
*Lolium perenne*

- Heading Date: +25 days
- Life Span: 5-7 yrs
- Min Rainfall (mm): 700
- Maturity: Late

**Seeding Rate** kg/ha

- Dryland: 10-15
- High Rainfall/Irrigation: 25-30

**Endophyte** Duet/LE

- New generation tetraploid perennial ryegrass.
- Densely tillered with high palatability.
- A growth pattern for high feed herbage production in both winter and summer.
- Significant advantages in feed quality and animal intake, ideal for high production systems.
- Excellent pest and disease resistance.
- Maintains the late maturity required for high production in Australian climatic conditions.
- Very high tiller density is allowing for greater persistence.

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**Tower**

Summer Active Tall Fescue  
*Festuca arundinacea*

- Heading Date: Very Late
- Life Span: 10+ yrs
- Min Rainfall (mm): 600
- Type: Continental

**Seeding Rate** kg/ha

- Dryland: 15-20
- High Rainfall/Irrigation: 30

**Endophyte** N/E / Protek™

- Soft leaf type with palatable and high quality feed.
- Tolerates dry summer periods better than ryegrass.
- High tiller density allows it to create a strong structure above the soil, reducing soil damage when grazing.
- Very active rhizome growth (lateral roots) that allows it to spread and dominate wet ground.
- Tower Summer Active Tall Fescue is the best option for land that is prone to saturated or flooded soils.
- Late maturity in spring with strong summer growth.

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**Convoy**

Continental Cocksfoot  
*Dactylis glomerata*

- Min Rainfall (mm): 500

**Seeding Rate** kg/ha

- Dryland: 4-6
- High Rainfall/Irrigation: 6-10

- Convoy Continental Cocksfoot is an early/mid maturing soft leaf cocksfoot variety.
- Excellent tolerance to acid soils.
- Rapid seedling vigour.
- Highly palatable with good dry matter production.
- Good autumn and winter growth, summer growth in northern areas.
- It demonstrates very good heat tolerance that gives it excellent strength in drought conditions.
- Early/mid season maturity gives it the robust nature to handle tough Australian conditions.

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**Australis**

Australian Phalaris  
*Phalaris aquatica*

- Min Rainfall (mm): 450
- Growth: Semi-Winter Dormant/High Summer

**Seeding Rate** kg/ha

- Dryland: 3-5
- High Rainfall/Irrigation: 6-8

- Derived from original Australian Phalaris and “true to type”.
- High yielding and long-term productivity, drought tolerant.
- Excellent palatability.
- Tolerance to acid soils.
- Low summer dormancy.
- Tolerates wet and waterlogged soils.
- Can withstand periodic flooding.
- Good tolerance to moderately saline soils.
- Well adapted to set stocking or rotational grazing.
More flexibility for F1 Wagyu operation

By Adam Little

As a progressive grazier in the Upper Hunter Valley, Trevor Petith chose to sow Pasture Genetics Jackpot Diploid Italian Ryegrass under irrigation in one of his six-hectare paddocks to supplement his rotational grazing and silage operation.

Trevor sowed the Jackpot in mid-June to increase the quality of feed for his grazing system after a very tight spring and summer in the Hunter Valley.

“I chose Jackpot for its late-season growth, dense tillering nature and feed quality,” Trevor said.

The Jackpot was sown at a rate of 25 kilograms per hectare. It included 250 kilograms per hectare of single super fertiliser, which has undoubtedly helped with the performance of the grass this season.

“I grazed the Jackpot with F1 Wagyu weaners, which I background on my property before heading to the feedlot for a 300-day feedlot program.

“The first grazing was in early August and then for management purposes, 2.5 hectares were grazed again in late September, while the other 3.5 hectares were cut for silage.

“The silage cut off the 3.5-hectare paddock produced 51 bales, with an average weight of 400 kilograms per silage bale, which I was extremely happy about,” Trevor said.

After grazing and cutting, Urea was applied to the ryegrass to boost production and speed to re-graze.

Since the second graze and cut, the Jackpot has responded well to the Urea and irrigation and has grown a good 150 to 200 millimetres in that time.

“The plan is to graze the block again or if the opportunity is there, I would like to cut another lot of silage off the same area again,” Trevor explained.

“I have been pleased with the versatility that the Jackpot has given me and I plan to sow a further two paddocks of Jackpot or a Jackpot and Mona Tetraploid Italian Ryegrass blend, next Autumn.

“The Jackpot has given me more flexibility in my F1 Wagyu operation and secures more silage for the winter,” Trevor concluded.

Jivet and Balance blend going stronger and longer in South East Queensland

By Michael Christensen

John Noble is a young dairy farm manager looking to maximise his on-farm feed production throughout the winter and spring periods on the property located at Peachester in the Sunshine Coast hinterland of South East Queensland.

It is a Subtropical environment with the majority of the property sown down to subtropical grasses consisting of Kikuyu, Setaria, Rhodes grass and Paspalum. These grasses grow aggressively through the late spring, summer months and into early Autumn. When conditions begin to cool the subtropical species slow in growth allowing for the temperate species to be over sown.

In early April, paddocks are grazed heavily then mulched. A direct drill machine is then used to sow into the subtropical grasses. 80 hectares of Pasture Genetics Jivet Tetraploid Annual Italian Ryegrass was sown at 50 kilograms per hectare with 2.5 kilograms per hectare of Pasture Genetics Balance Chicory.

“The Jivet and Balance blend was quick to establish and get to first grazing when quality feed was required.

“The blend continued to produce high-quality feed throughout the season and will be utilised into November until the subtropical species become active again under warm conditions,” John said.

The majority of the area is under irrigation but some hill paddocks were also sown under dryland conditions with great success.

The blend has been a real winner and a much better choice than the traditional Tetila ryegrass option given the later heading date of Jivet, while still maintaining rapid establishment vigour and superior winter production. The late heading date ensures that Jivet hangs on longer and produces quality feed much later into the season than many other earlier maturing varieties.

Image: John Noble very pleased with his Pasture Genetics Jivet Tetraploid Annual Italian Ryegrass and Balance Chicory custom blend at Peachester, South East Queensland.
Quick regrowth and turnaround with Jackpot

By Ian Freebairn

Jackpot Diploid Italian Ryegrass is providing a low-cost silage option for the Siedel family who operate Fantasia Pastoral Company at Allendale East in South Australia. The Siedel family milk 600 registered cows with an average of 670 kilograms of milk solids per year and rely on quality feed to fill the autumn/winter feed deficit.

The Siedels have grown maize for silage in the past, but with high prices for protein hay and the rising costs of harvesting maize the decision was made to grow grass silage instead. This has paid off with five cuts of high-quality silage from December to April averaging 3.4 tonnes of dry matter per hectare per cut, followed by grazing through winter and spring. Jackpot with its fine stem and high tiller density was quick to dry down, being cut one day and baled the next getting maximum nutrition into the bale, with the second cut of silage testing out at 12.4 ME, 21% CP and 39 NDF.

“Jackpot really responds well after cutting, with quick regrowth and turnaround to the next big silage harvest,” Phil said.

Jivet performs in a tough year

By Tom McCooey

Luke Felmingham from Invergordon, Victoria produces around 100,000 small bales of high-quality hay a year into the horse market. His operation consists of ryegrass, lucerne, clover and teff grass.

This year Luke put in around 40 hectares of Pasture Genetics Jivet Tetraploid Annual Italian Ryegrass for his small square grass bale production. Sown at 30 kilograms per hectare at the end of April it was set up for high yields. However, the season had different ideas, with below-average rainfall and coming off the back of a summer teff crop; water availability was definitely a limiting factor throughout the season. To the credit of Jivet, the grass made it through all of its stresses and it resisted going to head before Luke was able to get irrigation over the paddock.

“With the lack of moisture, it had a hard run in the first part of the season,” Luke said.

Due to its long season capabilities, the Jivet was able to stay vegetative and continue to produce good quality bulk material in the late stages of the season.

“Considering the seasonal conditions and lack of water availability I was very impressed with its performance and yield,” Luke continued.

Through the season the paddock received approximately 200 kilograms of Urea and two irrigations. Luke cut the paddock in August for silage just in case watering was not going to be an option. The first silage cut only yielded two tonnes per hectare but after Luke was able to water the crop, the true traits of Jivet were shown. The hay cut yielded around 7 tonnes per hectare and was then allowed to regrow, and the subsequent growth was used to graze his cattle.

Jivet’s long season capability and its ability to stay vegetative through hard conditions allow it to be a solid performer in the quality hay market. Its versatility and ability to handle stress enables you to have confidence in its performance. For a high yielding and late-season variety, it also has proven toughness in all sorts of conditions.

Phenomenal result in a year plagued by severe drought and higher than average temperatures

By Denham Thompson

Growing high quality irrigated pasture is crucial for the Hayden’s dairy operation in Pilton on the Southern Downs, Queensland. After trialling Pasture Genetics Mona Tetraploid Italian Ryegrass last year, Frances Hayden was so happy she decided to plant more hectares this year to a blend of Mona, Turbo Persian Clover and Haifa White Clover in a ratio of 60:25:15 respectively.

Sown early March at a blended rate of 35 kilograms per hectare, with a starter fertiliser and watered up, the Hayden’s had the milkers in for the first grazing just six weeks later.

With other paddocks struggling and no help from the sky, every drop of water and every blade of grass counts; as Frances puts it, “The season has not been on our side.”

However, the explosive recovery after grazing this pasture has meant that the Hayden’s have been able to tighten up the rotation to get as many grazing’s out of it as possible.

“We’re on a 20-day rotation. We’ve been hammering it but it’s handling it,” Frances said.

One attribute of Mona that has made it a great decision for the Hayden’s is its ability to persist longer at the end of spring in warmer climates. With an extremely late heading date of +28 days, Mona has produced excellent late-season results without any compromise to early winter productivity.

Turbo is the ideal companion legume for Mona. Not only does it boost the nutritive quality of the sward with its high levels of soluble carbohydrate and protein but its rapid seedling vigour and explosive recovery after grazing means that its growth curve is well synchronised with ryegrass, creating flexibility. While in the middle of an unrelenting and record-breaking drought, it is clear to see that the Hayden’s business relies heavily on utilising their centre pivot and hard hose irrigation systems to reliably produce an abundance of pasture of the highest quality.

“There’s 12 months of milk production in those paddocks,” Francis says, indicating the importance of getting the job done right.

“We’ll definitely be sticking with Mona!” she exclaimed.

Image: Frances Hayden of Bruanna Dairies in her freshly grazed paddock of Pasture Genetics Mona Tetraploid Italian Ryegrass.

Getting the best of both with Perun

By Nicole Frost

Perun Tetraploid Festulolium a few years ago, thought it was worth sowing back down this autumn. Perun is a festulolium, which is a cross between Italian ryegrass and meadow fescue. The resulting hybrid has good winter growth, highly palatable feed with a favourable balance of energy, protein and fibre, and improved persistence over straight Italian ryegrass due to the deeper root system.

In an area with cold, wet winters, selecting species that continue to grow during this period is crucial in filling the winter feed gap.

Peter has been very impressed with the growth of his Perun paddocks stating that “they did not slow down all winter”. Peter attributed this increased production to the larger root system of Perun that was able to utilise the applied fertiliser better and tough out the cold temperatures. Perun provided valuable winter grazing with Peter commenting that the cattle do really well on it.

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“We’ll definitely be sticking with Mona!” she exclaimed.

Image: Peter Dent of Pasture Genetics Perun Tetraploid Festulolium.
Pushing Tetrone to its production limits in Warrenbayne

By Tom McCooey

Stuart Feldtmann’s 250-hectare block in Warrenbayne, Victoria has been the site of some extraordinary trial results this year. Stuart has been growing Pasture Genetics Tetrone Tetraploid Annual Italian Ryegrass for around five years and has been impressed every time with its versatility.

His program has mainly consisted of cropping but has found Tetrone a good fit for some of the marginal cropping country.

“Tetrone has been pretty well suited to the environment and fits in well with our cropping program,” Stuart said.

Being a plus 5-day variety Tetrone has usually been cut before the bulk of the harvest for Stuart has begun.

Stuart has been using the Tetrone to utilise country that may not be suited to cropping. “Tetrone has handled the waterlogging and acidity better than the cereals and has consistently yielded very well,” he commented.

Due to trafficability issues and the inability to stock the paddock Stuart has been working with growth regulators to try to increase the standability of the crop. With very high applications of Nitrogen throughout the season, Stuart has had the issue of lodging when it comes to cutting, this year and in evidence in the accompanying photo, he has begun to work towards a solution.

Overall Tetrone has added an effective tool for Stuart to produce quality feed and perfectly match his season length with a quality variety. From his trial results, he is looking forward to pushing Tetrone to its production limits in the future.

Image: Stuart Feldtmann in his Pasture Genetics Tetrone Tetraploid Annual Italian Ryegrass.

Increasing Summer Production with Tower

By Nicole Frost

Jo and Lewis Tate run a dairy farm with their family in Pyengana, north east Tasmania. The Tate’s are passionate about producing a premium quality product and have long been focused on increasing the solids component of their milk. The 150 Jersey cow herd produces an average of 5.35 per cent fat and 3.85 per cent protein; although, in autumn it is not uncommon to peak at a massive 11 per cent milk solids. The key to their success has been through selecting the right herd genetics and growing high quality, diverse pastures.

Jo and Lewis first tried Pasture Genetics Tower Summer Active Tall Fescue in the hopes of increasing the production of their irrigated paddocks through the summer months. Tower was selected for its high level of heat tolerance, soft leaf and the ability to retain feed quality. Balance Chicory was sown as a companion species to offer a range of additional benefits including bloat reduction, increased palatability and digestibility, and high energy and protein content.

Lewis has been so happy with the results of this blend he reckons “it’s the best stuff I’ve sown on the farm”. The 4.5-acre paddock was grazed in two halves on an 18-day rotation right through spring, summer and into autumn. With the incredibly dry year they have experienced, the Tower and Balance blend was watered up after sowing in the spring and received half an inch each week.

“Nothing else grew anything like it – I’m rapt with the stuff,” Lewis said about the valuable summer feed.

Jo said, “The cows love it too, it’s their favourite paddock”.

The late heading date of Tower combined with good utilisation, a tight grazing rotation and frequent doses of organic fertiliser, meant the pasture never went to seed and continued to produce high-quality feed right through. “It hardly slowed down all winter,” Lewis said.

The Tate’s do not rely on grain to feed their cows. Cows get one kilogram of pellets per day in the bale which increases to a maximum of two kilograms through joining. Growing high quality pasture really is the key to their business and Lewis is excited to get all of their irrigated ground sown down to the same Tower and Balance blend. The proof of their philosophy is in the vat as TasFoods has recently approached the Tate’s to supply their manufacturing milk which the local Pyengana Dairy use to create their farmhouse cheese.

Image: (top) Rapid establishment - this photo was taken three months after sowing and had already been grazed. (bottom) Jo and Lewis Tate in their paddock of Pasture Genetics Tower Summer Active Tall Fescue and Balance Chicory just seven days post-grazing.
Annual Italian Ryegrass Grazing Trial

2012 | PENFIELD RESEARCH STATION

- An irrigated six hectare paddock was divided into 12 half-hectare sections. On the May 8, four of these sections were each sown with three different tetraploid annual Italian ryegrass varieties: Jivet Tetraploid Annual Italian Ryegrass, Tetila and Winter Star® II. The sowing rate was 30 kilograms per hectare.

- 21 Angus-Hereford cross steers were split into three grazing groups of seven steers, with an average starting weight of 245 kilograms.

- The three groups simultaneously grazed each of the varieties throughout the duration of the trial.

- The trial ran for 12 weeks. Each section of each variety was grazed in rotation for a week, every four weeks, with a four-week pre-trial grazing period. The pre-trial grazing started the rotation, so each section had equal re-growth time. The measured trial period was August 27, 2012 until November 19, 2012 (89 days).

- Each group of steers spent equal grazing time on the three varieties.

- No other feed or supplements were given to the animals.

DISCUSSION

The trial was developed to remove any variables and limiting factors other than the ryegrass variety being grazed, so that this was the only factor influencing the difference in animal performance. During the trial, measurements were not only taken for weight gain information, but to record forage production and consumption rates. This resulted in the acquisition of data detailing the intake of each specific variety, and the efficiency of each different forage in resulting weight gains.

Another aim of the trial was to assess the winter productivity of the varieties, which was quite impressive, but as the trial continued later into the season, some dramatic differences were observed in forage production and quality.

As the season progressed, the earlier maturing Tetila started to show head emergence and stem elongation, and was much slower to respond post grazing; this lead to less overall productivity and reduced intake from the grazing groups. The later maturing Jivet Tetraploid Annual Italian Ryegrass had greater late season production, in turn, leading to better animal performance due to its increased productivity during this time. It became clear that sowing a later maturing variety, 18+ days to flowering later than Tetila, you can achieve higher live weight gains due to better forage quality and overall yield in an extended season.

15 per cent better beef weight gains with Jivet Tetraploid Annual Italian Ryegrass when compared with Tetila and five per cent better than with Winter Star® II.

<table>
<thead>
<tr>
<th>Cultivar</th>
<th>Kg/Day weight gain average</th>
<th>DM t/Ha produced total</th>
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<tbody>
<tr>
<td>Jivet</td>
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<td>Tetila</td>
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<td>Winter Star® II</td>
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Italian Ryegrass Grazing Trial

2018 | PENFIELD RESEARCH STATION

- An irrigated six hectare paddock was divided into 12 half-hectare sections. On April 25, four of these sections were each sown with Mona Tetraploid Italian Ryegrass, Jackpot Diploid Italian Ryegrass, and Knight Diploid Italian Ryegrass.
- Sowing rate was 25 kilograms per hectare for Jackpot and Knight, and 30 kilograms per hectare for Mona.
- 30 Angus steers were split into three grazing groups of 10 steers, with an average starting weight of 245 kilograms. The grazing trial began on August 8, 16 weeks after sowing.
- The three groups simultaneously grazed each of the varieties throughout the duration of the trial.
- The trial ran for 12 weeks until the October 30. Each variety was grazed on for an equal duration by each grazing group.
- No other feed or supplements were given to the animals.

DISCUSSION:

- This trial was designed to measure a single variable – the ryegrass variety being grazed. With no other feed supplements or intake, the different ryegrass varieties and available feed resulted in different weight gains over the 12-week period.
- Mona Tetraploid Italian Ryegrass and Jackpot Diploid Italian Ryegrass were selected for this trial, as they are newly released varieties with very late heading dates. This allows for potentially long seasons of production, however they have also been developed for early vigour and winter production. Knight Diploid Italian Ryegrass was chosen as a comparison variety, as an industry benchmark.
- All grasses established very well despite only 91 millimeters of rainfall in the 16-week period prior to grazing, well below average for the area. With a good amount of starting feed, all varieties performed well in the early two rotations for weight gains. Mona and Knight performed the best throughout the late winter and early spring period of the trial, with good weight gain results and dry matter production.
- For the majority of the three months of the trial, there was only a follow up of 83 millimeters of natural rainfall, as well as some severe heat. The trial was irrigated to keep production levels up towards the end of the trial, supplying approximately 30 millimeters of irrigation water per week. However, this resulted in long periods between watering and rainfall events, and production dropped from the Mona and Knight as a result. Jackpot handled the stressful conditions well, producing amidst increasingly testing conditions.
- The stocking rate for this trial was slightly higher than similar trials of this model that have been run before. The higher stocking rate, combined with a tough season for production, meant there was a correlation between dry matter production and weight gain on the animals. Mona was the highest producer in dry matter per hectare overall, resulting in the best average daily gains throughout the trial. Weight gains could easily be improved by adding a legume content to the feed mix, such as a Persian clover.

First rotation: August 8 to September 4
Second rotation: September 5 to October 2
Third rotation: October 3 to October 30
Forage

Bouncer

Hybrid Forage Brassica
Brassica napus
Life Span < 9 mths
Min Rainfall (mm) 500

Seeding Rate kg/ha
Dryland 3
High Rainfall/Irrigation 5

Seed Treatment NA

• Leafy turnip.
• Tetraploid turnip/Chinese cabbage cross.
• Quick gap fill to meet winter shortfalls.
• Excellent grazing partner to adjacent Subzero Hybrid Forage Brassica paddocks.
• Quick to first grazing.
• Fast recovery from grazing with excellent subsequent yields.
• Greater leaf production.
• More plants surviving after grazing.
• Greater regrowth.

Subzero

Hybrid Forage Brassica
Brassica napus
Life Span 12-18 mths
Min Rainfall (mm) 500

Seeding Rate kg/ha
Dryland 3
High Rainfall/Irrigation 5

Seed Treatment XLR8™

• Leafy rape.
• Kale/tetraploid hybrid.
• Subzero Hybrid Forage Brassica has the ability to withstand frosts and retain green leaf.
• Early maturing – eight to nine weeks to first grazing, however, still retains quality if not grazed until 12-14 weeks.
• Multiple grazings providing high quality feed.
• High forage yields.
• If spring or summer sown, it has the ability to be carried through winter until the following spring.
• Excellent regrowth after frequent grazings, making it one of the most persistent forage brassica cultivars, while retaining leaf and stem quality with active regrowth throughout cool seasons, including frost periods.

Balance

Chicory
Chicorium intybus
Life Span 2-3 yrs
Growth All year round
Min Rainfall (mm) 500

Seeding Rate kg/ha
Dryland 3
High Rainfall/Irrigation 5

Seed Treatment XLR8™

• Long term chicory.
• Rapid establishment and excellent winter growth.
• Autumn or spring sowing option.
• Useful as a hard grazing option in a rotational system.
• Excellent livestock weight gains.
• Pasture mix option.
• Good protein to energy rating.
• Resistant to Diamondback moth and white butterfly.

Ranger

Plantain
Plantago lancolata
Life Span 3-5 yrs
Dry Matter High
Growth All year round
Drought Tolerance High
Min Rainfall (mm) 500

Seeding Rate kg/ha
Dryland 1-3
High Rainfall/Irrigation 4-8

Seed Treatment XLR8™

• Performs well in all ranges of fertility.
• Stripes faster than grasses.
• Good water use efficiency.
• Highly palatable and provides excellent livestock nutrition and performance.
• Good all year growth and higher cool season growth.
• Well balanced levels of crude protein, energy, and minerals.
• Higher levels of S, Ca, Na, Cu and B than grasses and some clovers.
• Excellent increases in livestock weight gains and decreased dagginess when used in a mix.

Smart

Radish
Raphanus sativus L
Min Rainfall (mm) 350

Seeding Rate kg/ha
Dryland 5-8

• Can be grazed from six to eight weeks.
• Smart Radish will reach canopy closure a full month before oat and rye cover crop aiding in weed suppression and moisture retention for the duration of the season.
• Smart Radish has an aggressive root system that aids in busting open hard pan soil types that are common in broadacre paddocks.
• Smart Radish produces more root mass than mustard crops or oil seed radish and has two to four times the number of roots as cereal or grasses.
• Best practise to be grazed or sprayed out on first flower.
• Soft seeded type.

Rebound

Forage Millet
Echinochloa esculenta
Life Span 9 mths
Min Rainfall (mm) 500

Seeding Rate kg/ha
Dryland 10-15
High Rainfall/Irrigation 30-40

• Fast growing summer grass.
• Safe, good quality, palatable feed.
• Ideally suited to areas that constantly reach high temperatures over summer.
• Fast regrowth after grazing or cutting.
• Combines well with other summer active varieties such as red clover or brassica.
• Plant on 14 degrees Celcius and rising soil temperature.
• Spring option only.
Bounty

Forage Sorghum
Sorghum bicolor x sudanese

<table>
<thead>
<tr>
<th>Life Span</th>
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<tr>
<td>Min Rainfall (mm)</td>
<td>500</td>
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</table>

Seeding Rate kg/ha

- Dryland: 10
- High Rainfall/Irrigation: 25

- Early to mid maturing, Sorghum/Sudan grass hybrid.
- Good cool soil tolerance.
- Excellent early vigour with prolific tillering characteristics.
- Suitable for sheep and cattle grazing enterprises.
- Makes good quality silage and hay.
- Low prussic acid potential.
- Plant on 16 degrees Celsius and rising soil temperature.
- Offers a new package with improved cold tolerance, early vigour, and prolific tillering characteristics. Bounty Forage Sorghum is a good all round forage option for grazing, silage, or hay.
- During the breeding process, Bounty Forage Sorghum was selected for its accelerated time to first grazing.
- Aggressive tillering after grazing, results in an overall increase in dry matter production.
- Spring option only.

Calibre

BMR Sorghum
Sorghum bicolor x sudanese

<table>
<thead>
<tr>
<th>Life Span</th>
<th>9 mths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min Rainfall (mm)</td>
<td>500</td>
</tr>
</tbody>
</table>

Seeding Rate kg/ha

- Dryland: 10
- High Rainfall/Irrigation: 25

- Early to mid maturing, Brown Mid Rib Sorghum/Sudan grass hybrid.
- 12 gene BMR now delivering new high quality in the forage market.
- Low lignin = highly digestible feed. Lignin is indigestible in ruminants.
- Reducing the lignin results in higher feed intake and improved livestock weight gains. The traditional types that have wide stems also have high levels of lignin.
- Calibre BMR Sorghum offers this reduction trait that will give you better grazing, silage and hay results than conventional types.
- An increase in milk production by up to 20 per cent has been achieved with the BMR trait.
- Spring option only.

“Bouncer helped capitalise on the late season rains and provided good quality, fast feed for Rick’s weaning program.”

RICK McALPIN, FORT WILLIAM, CAVEAT, VICTORIA
## Pasture Herbicide Options

<table>
<thead>
<tr>
<th>Registered Chemical for use in Pasture species</th>
<th>Broadleaf Control</th>
<th>Grass Control</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Forage Barley</strong></td>
<td>Agriteyn MA, T-Rex®, Bentley™, Ecopar®, Jaguar®, Tigrex®, Precept®, Velocity®, Amine 625 (2, 4-D amine), Broadstrike®, Canvas 750® (MCPA Amines), LVE 600 (MCPA ester), Broadword®, Comet 400, Estercide XTRA 680®, Esteron LV (2, 4-D ester), Lontrel Advanced®, Starane Advanced®, Tordon 242®, Paradigm®, Amicide Advance 700®, Polo 570 LVE®, Agritrole 750®, Broadside®, Boxer Gold®, Cadence®, Dual Gold®, Reglene®, Unify®</td>
<td>Achieve®, Arcade®, Axial®, Boxer Gold®, Dual Gold®, Triffux®</td>
</tr>
<tr>
<td><strong>Forage Oats</strong></td>
<td>Agriteyn MA (certain varieties), T-Rex®, Ecopar®, Tigrex®, Precept®, Amine 625 (2, 4-D amine), Broadstrike®, Broadword®, Canvas 750® (MCPA Amines), LVE 600 (MCPA ester), Comet 400, Lontrel Advanced®, Starane Advanced®, Tordon 242®, Paradigm®, Amicide Advance 700®, Polo 570 LVE®, Agritrole 750®, Broadside®, Dual Gold®, Cadence®, Reglene®, Unify®</td>
<td>Dual Gold®</td>
</tr>
<tr>
<td><strong>Lucerne</strong></td>
<td>Broadstrike®, Raptor® WG, Bentley™, Skipper, Broadword®, Comet 400, Jaguar®, Buttress, Starane Advanced® (up to 300 mL/ha in established Lucerne), 2,4-DB, Gesaprim®, Reglene®, Gramoxone®, Spray Seed®, TriflurX®, Bronoxynil, Diuron, Simazine, Claw 350SL®, Spinaker®, Sharpen®WG, Shiquart®, Terrain®</td>
<td>Exert® 520, Factor®, Elantra Xtreme, Burst®, Kerb®, Verdict®, Hadron®, Gasaprim®, Fusilade® Gramoxone®, Spray Seed®, Triffux®, Diuron, Simazine, Claw 350SL®, Spinaker®, Raptor®WG, Shiquart®</td>
</tr>
<tr>
<td><strong>Bladder Clover</strong></td>
<td>Broadstrike®, T-Rex®, Igran®, Broadword®, Buttress®, 2,4-DB, Raptor® WG, Canvas 750® (MCPA Amine), Esteron LV (2, 4-D ester), Lontrel Advanced®, Starane Advanced®, Tordon 242®, Paradigm®, Amicide Advance 700®, Polo 570 LVE®, Agritrole 750®, Broadside®, Dual Gold®, Cadence®, Reglene®, Unify®</td>
<td>Exert® 520, Havoc®, Burst®, Kerb®, Verdict®, Elantra Xtreme, Claw 350SL®, Raptor® WG</td>
</tr>
<tr>
<td><strong>Arrowleaf Clover</strong></td>
<td>Broadstrike®, T-Rex®, Igran®, Raptor® WG, Broadword®, Ecopar®, Brodal Options®, Tigrex®, Buttress®, MCPA 760, MCPA 250, 2,4-DB, Claw 350SL®, Justice, Aspect Options, Thistrol Gold (registration pending)</td>
<td>Exert® 520, Havoc®, Burst®, Kerb®, Verdict®, Elantra Xtreme, Claw 350SL®, Raptor® WG</td>
</tr>
<tr>
<td><strong>Balansa Clover</strong></td>
<td>Broadstrike®, T-Rex®, Igran®, Raptor® WG, Broadword®, Ecopar®, Brodal Options®, Tigrex®, Buttress®, 2,4-DB, Dual Gold®, Raptor® WG, Claw 350SL®, Justice, Aspect Options, Thistrol Gold (registration pending)</td>
<td>Exert® 520, Havoc®, Burst®, Kerb®, Verdict®, Elantra Xtreme, Claw 350SL®, Raptor® WG</td>
</tr>
<tr>
<td><strong>Persian Clover</strong></td>
<td>Broadstrike®, T-Rex®, Igran®, Raptor® WG, Broadword®, Ecopar®, Brodal Options®, Tigrex®, Buttress®, 2,4-DB, MCPA 750, Dual Gold®, Justice, Aspect Options, Thistrol Gold (registration pending)</td>
<td>Exert® 520, Havoc®, Burst®, Kerb®, Verdict®, Elantra Xtreme, Claw 350SL®, Raptor® WG</td>
</tr>
<tr>
<td><strong>Red Clover</strong></td>
<td>Broadstrike®, T-Rex®, Igran®, Raptor® WG, Broadword®, Ecopar®, Buttress®, 2,4-DB, MCPA 750, Dual Gold®, Reglene®, Claw 350SL®, Justice</td>
<td>Exert® 520, Havoc®, Burst®, Kerb®, Verdict®, Claw 350SL®, Raptor® WG, Elantra Xtreme,</td>
</tr>
<tr>
<td><strong>Berseem Clover</strong></td>
<td>Broadstrike®, T-Rex®, Igran®, Raptor® WG, Broadword®, Buttress®, 2,4-DB, MCPA 750, Claw 350SL®, Justice</td>
<td>Exert® 520, Havoc®, Burst®, Kerb®, Verdict®, Claw 350SL®, Raptor® WG</td>
</tr>
<tr>
<td><strong>White Clover</strong></td>
<td>Broadstrike®, T-Rex®, Igran®, Raptor® WG, Broadword®, Ecopar®, Brodal Options®, Tigrex®, Buttress®, 2,4-DB, MCPA 750, Dual Gold®, Reglene®, Gramoxone®, Spray Seed®, Claw 350SL®, Justice, Aspect Options, Thistrol Gold (registration pending)</td>
<td>Exert® 520, Havoc®, Burst®, Kerb®, Verdict®, Fusilade®, Gramoxone®, Spray Seed®, Elantra Xtreme, Claw 350SL®, Raptor® WG</td>
</tr>
<tr>
<td><strong>Sub Clover</strong></td>
<td>Agriteyn MA, Bentley™, Igran®, MCPA 250, Raptor® WG, Ecopar®, T-Rex®, Amine 625 (spray graze), Skipper, Simazine, Brodal Options®, Tigrex®, Broadstrike®, Canvas 750® (MCPA Amines), Esteron LV (2, 4-D ester), Lontrel® (low rates with MCPA or 2,4-D - see label), Broadword®, Amicide Advance 700® (spray-graze), Estercide XTRA 680, Agritrole 750®, Polo 570 LVE®, Gesagard®, Dual Gold®, Reglene®, Gramoxone®, Spray Seed®, Raptor® WG, Claw 350SL®, Shiquart®, Justice, Aspect Options, Thistrol Gold (registration pending)</td>
<td>Exert® 520, Havoc®, Factor®, Elantra Xtreme, Burst®, Kerb®, Verdict®, Gesaprim®, Fusilade®, Gramoxone®, Spray Seed®, Claw 350SL®, Raptor® WG, Shiquart®</td>
</tr>
<tr>
<td><strong>Medics</strong></td>
<td>Broadstrike®, MCPA 250, Broadword®, Bentley®, Ecopar® © (Not Snail medic), Jaguar®, Buttress®, 2,4-DB, Gesagard®, Raptor® WG, Claw 350SL®</td>
<td>Exert® 520, Factor, Elantra Xtreme, Havoc®, Burst®, Kerb®, Verdict®, Fusilade®, Claw 350SL®, Raptor® WG</td>
</tr>
<tr>
<td><strong>RyeGrasses - Annual, Italian, Perennial</strong></td>
<td>Agriteyn MA, Igran®, Broadstrike®, Canvas 750® (MCPA Amines), Broadword®, Polo 570 LVE®, Agritrole 750®, Archer 750®, LVE 600 (MCPA ester), Lontrel®, Gesagard®, Cadence®, Gesaprim®, Gramoxone®, Spray Seed®, Reglene®, Thistrol Gold (registration pending)</td>
<td>Gesaprim® (Prennial Ryegrass only), Gramoxone® (Perennial Ryegrass only), Spray Seed® (Perennial Ryegrass only), Shiquart® (Perennial Ryegrass only)</td>
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<tr>
<td><strong>Festulolium</strong></td>
<td>Broadstrike®, Broadword®</td>
<td>–</td>
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<tr>
<td><strong>Tall Fescue</strong></td>
<td>Broadstrike®, Canvas 750® (MCPA Amines), Broadword®, Polo 570 LVE®, Agritrole 750®, Archer 750®, LVE 600 (MCPA ester), Lontrel®, Gesagard®, Cadence®, Gesaprim®, Gramoxone®, Spray Seed®, Shiquart®, Thistrol Gold (registration pending)</td>
<td>Gesaprim®, Gesaprim®, Gramoxone®, Spray Seed®, Shiquart®</td>
</tr>
<tr>
<td><strong>Cocksfoot</strong></td>
<td>Broadstrike®, Canvas 750® (MCPA Amines), LVE 600 (MCPA ester), Broadword®, Lontrel®, Agritrole 750®, Polo 570 LVE®, Gesagard®, Dual Gold®, Cadence®, Gesaprim®, Gramoxone®, Spray Seed®, Shiquart®, Justice, Thistrol Gold (registration pending)</td>
<td>Gesaprim®, Gesaprim®, Gramoxone®, Spray Seed®, Shiquart®</td>
</tr>
<tr>
<td><strong>Phalaris</strong></td>
<td>Agriteyn MA, Igran®, Broadstrike®, Canvas 750® (MCPA Amines), LVE 600 (MCPA ester), Lontrel®, Broadword®, Estercide XTRA 680, Agritrole 750®, Archer 750®, Gesagard®, Dual Gold®, Cadence®, Gesaprim®, Gramoxone®, Spray Seed®, Shiquart®, Thistrol Gold (registration pending)</td>
<td>Gesaprim®, Gesaprim®, Gramoxone®, Spray Seed®, Shiquart®</td>
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<tr>
<td><strong>Forage Brassica</strong></td>
<td>Forage Max™</td>
<td>TBA</td>
</tr>
<tr>
<td><strong>Plantain</strong></td>
<td>Igran®, Kamba 750®</td>
<td>TBA</td>
</tr>
<tr>
<td><strong>Chicory</strong></td>
<td>TBA</td>
<td>TBA</td>
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<tr>
<td><strong>Forage Millet</strong></td>
<td>Aminex 625, Comet® 400, Starane Advanced®</td>
<td>–</td>
</tr>
<tr>
<td><strong>Forage Sorghum</strong></td>
<td>Atrax®e, Comet® 400, Starane Advanced®, Atrazine, Gasaprin®, Terbyme Xtreme®</td>
<td>Gasaprin®</td>
</tr>
<tr>
<td><strong>Vetch</strong></td>
<td>Diuron, Methribuzin, TriflurX®, Sencor®480c, Ecopar® registration pending, Terbyme Xtreme®</td>
<td>Methribuzin, TriflurX®, Sencor®480c, Ecopar® registration pending</td>
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</table>

*Pasture Genetics has taken all reasonable care in the preparation of this guide. The information contained is thought to be correct at the time of publication. Subject to change. Always seek professional advice from your local farm supplies representative or agronomist prior to purchase or application. Always read the product label prior to use. Observe withholding period to grazing or cutting for feed or harvest.*
“Bronco is noticeably leafier than other forage oat varieties and has produced outstanding dry matter yields when compared to many current varieties on the market. With the extra leafiness combined with high tiller production, any grazing animals will intake more per mouthful with Bronco. This, combined with its excellent digestibility, makes this new variety superior for animal weight gains.”

MICHAEL CHRISTENSEN
PASTURE GENETICS
TERRITORY MANAGER QLD