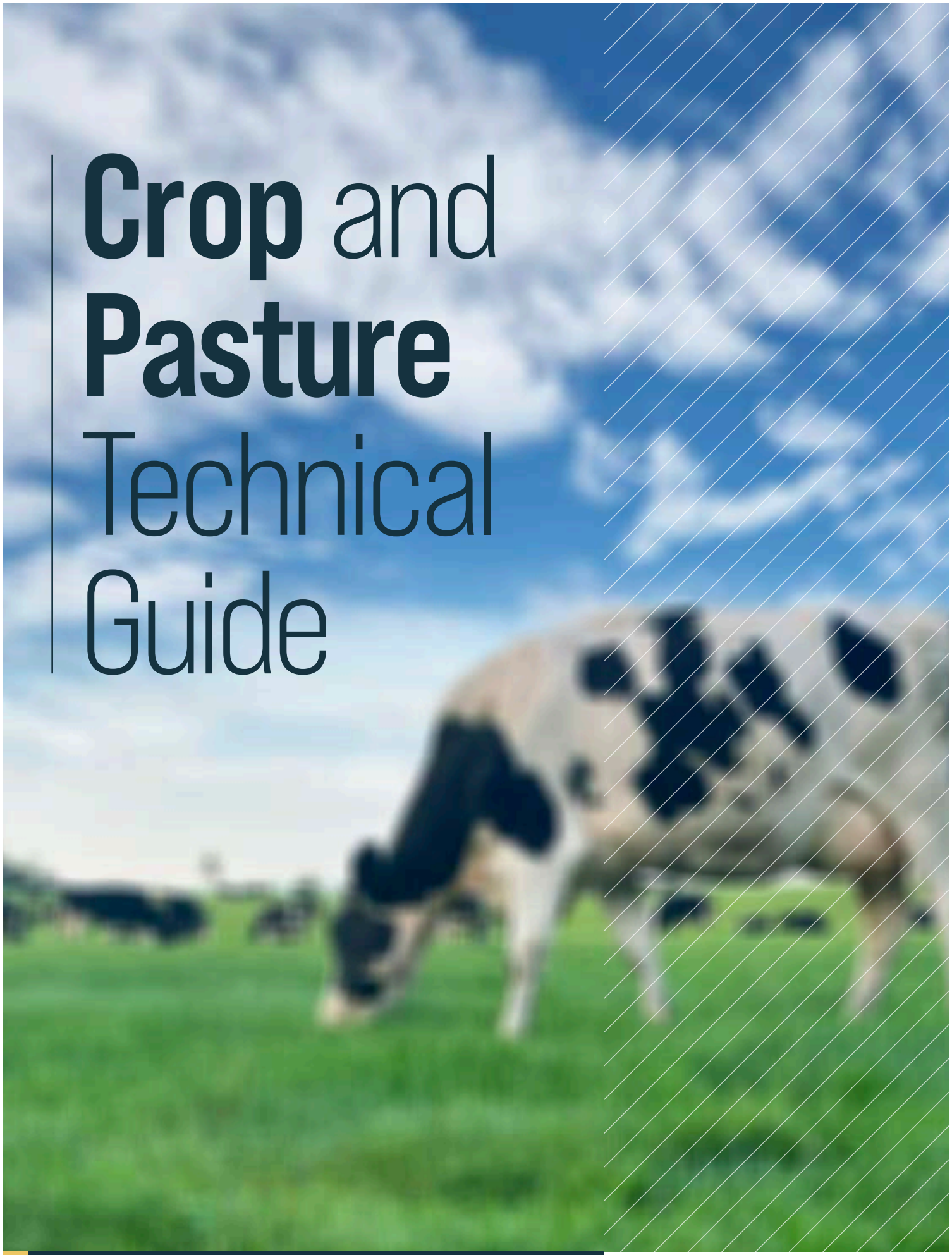
Crop and **Pasture** Technical Guide



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2024

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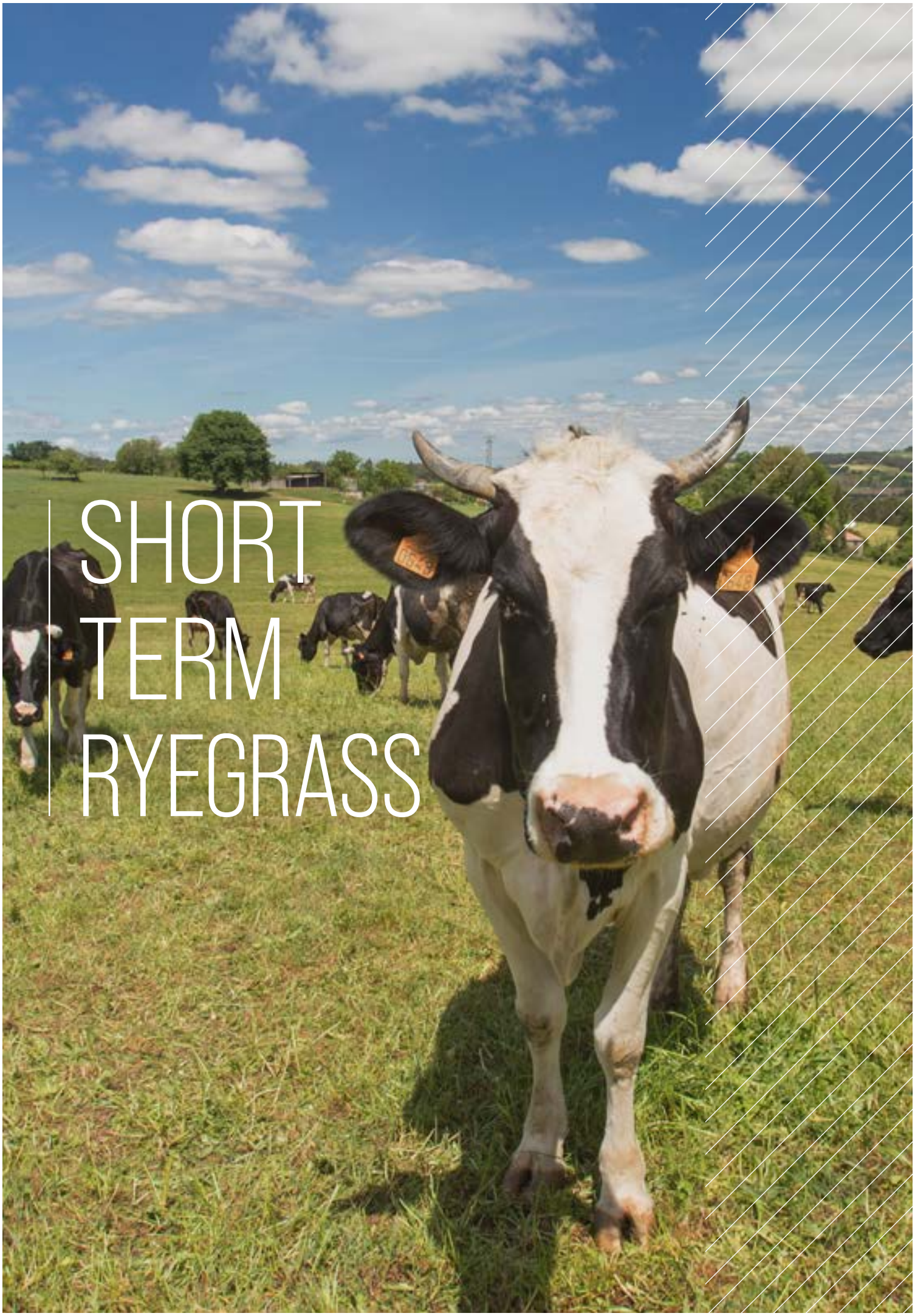
Contents


SHORT
TERM
RYEGRASS

Understanding Short Term Ryegrass

There is now a wide range of short-term ryegrass germplasm for farmers to choose from. In itself this can be very confusing without a good understanding of those cultivars' background and place in farming systems.

EARLY-MID MATURING ANNUAL RYEGRASS

Early-mid maturity varieties are best suited to quick winter feed and early fodder conservation. This will suit short season, low rainfall areas, or in higher rainfall areas where they can then be sprayed out in time to sow a summer forage crop. RAGT has several early maturity annual ryegrasses including;

Dazzler & Mojo.

LATE MATURING ANNUAL RYEGRASS

Late maturing varieties are better suited to medium to high rainfall areas or where late grazing or a second cut of fodder can be achieved. RAGT has a strong range of late maturity annual ryegrass varieties:

Speedyl is a late maturity tetraploid annual ryegrass,

Rozen is a late maturity diploid annual ryegrass,

Adrenalin 2 is a late maturity tetraploid annual ryegrass.

LATE SEASON MATURING ITALIAN RYEGRASS

The true Italian ryegrass is capable of producing feed over one to two years depending on climate and management. Italian ryegrass varieties can be diploid or tetraploid and can vary in maturity from mid to late season. Late season italian varieties offer better value in long growing season areas, with annual types a more cost effective option for shorter growing season areas.

Later maturity Italian ryegrass can provide feed over a longer growing season than annuals, and with higher feed quality later in the season. So for higher rainfall areas they will still be a better option than annual types unless the paddock is to be summer cropped.

RAGT has four late maturity ryegrass cultivars available:

Accelerate 2 is a new late maturity, highly winter active, diploid Italian ryegrass,

Indulgence is a late maturity diploid Italian ryegrass with the high quality of a tetraploid,

Emmerson is a late maturity, high quality tetraploid Italian ryegrass.

HYBRID RYEGRASS

The favourable characteristics of Italian ryegrass and perennial ryegrass are brought together in hybrid ryegrass (Lolium hybridum). Hybrid ryegrass has a quicker spring development than perennial ryegrass and gives, under good conditions, a high level of production for 2 to 3 years. Persitance is better than in Italian ryegrass and production in winter is higher than a perennial. RAGT has a diploid hybrid ryegrass.

Tonuss.

Understanding Short Term Ryegrass Cont.

DIPLOIDS OR TETRAPLOIDS?

Ryegrass existed originally as a diploid plant with 14 sets of chromosomes. Some plants were found to have double the number of chromosomes and exhibited some different characteristics to diploids. These tetraploid varieties have coarse, dark green leaves and are often more palatable particularly over the cool growing season.

Tetraploids have larger plant cells which leads to larger leaves and larger seed. They give a high fresh yield with lower dry matter content than the diploid varieties and may require more drying down time for silage. This large seed usually establishes faster due to greater energy reserves per seed, but with less seed per kg.

As such tetraploids should be sown at higher sowing rates (25–40% higher) than diploids. They have a more open growing habit which makes them more suited to planting with slower growing legumes, and they handle water logging better than diploids.

Diploids usually have better tiller density, can be sown at lower seeding rates and cover over faster. If sown alone this will help overcome weed problems, but can shade legumes in pasture mixes.

Modern technologies (non GM) allow plant breeders to breed tetraploid varieties giving producers a wider choice of material to suit differing needs.

RAGT recommends the use of diploid varieties for sowing alone and for a particular focus on grazing. We recommend the use of tetraploids for mixes with annual legumes and where more focus will be on fodder conservation during spring.

SOWING RATE TRIAL

A replicated sowing rate trial for annual ryegrass was sown at Gundagai with rates of 10, 20, 30, 40 and 50kg/ha of **Adrenalin.**

From the data below it can be seen that lifting sowing rate from 10 to 20kg/ha increases both winter and total feed grown (kg DM/ha). This highlights 20kg/ha as the minimum sowing rate for optimal results.

For sowing rates above 20kg/ha the advantage is mainly extra winter feed as plants can tiller out to compensate in spring.

The data shows about 500kgDM/ha extra feed for each 10kg/ha increase in sowing rate.

That means a cost of about $100/ha per tonne of 12MJ feed during winter – a very sound economic result.

SOWING RATE	WINTER FEED	SPRING FEED	TOTAL FEED	EXTRA WINTER FEED	EXTRA SPRING FEED	TOTAL EXTRA FEED
10 KG/HA	4,523	4,892	9,415	0	0	0
20 KG/HA	5,154	5,362	10,516	631	470	1,101
30 KG/HA	5,446	5,089	10,535	923	197	1,120
40 KG/HA	5,943	5,335	11,278	1,420	443	1,863
50 KG/HA	6,360	5,209	11,569	1,837	317	2,154

TETRAPLOID ANNUAL RYEGRASS

Speedyl

TOP PERFORMER DAIRY AUSTRALIA FVI

Speedyl has been selected after its outstanding performance in trials against commercial standards and breeders' trial lines.

HIGH PERFORMANCE ANNUAL RYEGRASS

Speedyl establishes rapidly and will provide fast winter feed, but importantly will produce high levels of quality feed later into the season than other annuals.

It is later flowering than other commercial cultivars and holds its leaf even during heading. Its feed quality is outstanding from early winter until late in the season.

Speedyl continues to have outstanding performance in both the MLA PTN trials and the Dairy Australia FVI.

A solid performer backed by years of consistent data.

FEATURES

High yielding	High winter yields
Good rust resistance	Late flowering (+12 to +18 days later than Tetila types)

BENEFITS

- More feed for your pasture investment
- Provides feed when it is needed most
- Well suited for late grazing into the warm season
- Excellent late season quality. Enables higher quality conserved fodder which will provide more meat and milk per hectare.

SOWING RATES

Oversowing kikuyu	30-50kg/ha
>850mm irrigation	35-50kg/ha
700-850mm rainfall	25-30kg/ha
500-700mm rainfall	20-25kg/ha
Oversowing perennial pastures	15kg/ha

Suited to All Livestock Types, Silage and Hay

Late Maturity

Australian Release >2021

VARIETY MATURITY	PLOIDY	MEAN				FLOWERING DAYS FROM TETILA		ME MJ/KG DM	CP%	NDF%	EXTRA MEAT VALUE $/HA	EXTRA MILK VALUE $/HA	NO. OF TRIALS
		WINTER	SPRING	TOTAL	EST YIELD	NSW	WA						
Speedyl	tet	108	131	118	10,844	+12	+18	11.08	23.95	45.88	+$901	+$1254	43
Hogan	tet	100	133	114	10,494								3
Winter Star II	tet	103	125	113	10,395	+8		10.74	23.14	48.47	+$459	+$615	38
Ascend	tet	99	128	111	10,254								5
Jivet	tet	100	125	110	10,089								4
Mach 1	tet	102	117	109	10,059								5
Tetilla	tet	100	100	100	9,212	0	0	10.40	22.40	49.23	$0	$0	41

*Yield data is hundredised means from a minimum of three and up to 52 trials per variety/brand. ^Meat and milk values estimated using Seed Force's Animal Performance Calculator based on the following assumptions: · Meat at 65% feed utilisation, based on 300kg steer with 44MJ for maintenance and 45MJ/kg lwg at $3.50/kg · Milk at 75% feed utilisation, based on 600kg cow with 100MJ for maintenance/exercise/pregnancy and 5.5MJ/litre at $0.53 per litre.

DIPLOID ANNUAL RYEGRASS

Rozen

NEW RELEASE 2023

Rozen is a new improved late maturity diploid annual ryegrass.

GENERAL FIT

Rozen is a new highly winter active annual ryegrass, developed in Europe to replace the highly successful Sultan. It has excellent seedling vigour making it suitable for sowing into either clean paddocks or over-sowing into sub-tropical pastures including setaria and kikuyu.

Rozen has similar forage yields and maturity to Sultan, but much improved resistance to a range of diseases including crown rust, brown rust and powdery mildew.

As a diploid Rozen is a densely tillered variety which will better withstand periods of winter dry conditions as its narrower leaf blades lose less moisture through evapotranspiration. This also enables it to cure faster for making high quality hay.

Rozen can be sown as the sole ryegrass at lower sowing rates than tetraploids, but can also be mixed with tetraploids in a 40/60 mix to develop a strong sward with the early production from the tetraploid, but with later density and production from the diploid.

FEATURES

Diploid annual ryegrass	High winter activity
Excellent seedling vigour	Excellent disease tolerance

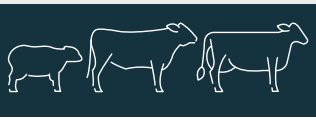
BENEFITS

- Fine, densely tillered, better suited to hay than tetraploids
- More feed when it is needed most
- Fast establishing, including over-sowing sub-tropical pastures
- Improved yield potential and palatability

SOWING RATES

Oversowing kikuyu	30-40kg/ha
>850mm irrigation	30-40kg/ha
700-850mm rainfall	20-25kg/ha
500-700mm rainfall	20kg/ha
Oversowing perennial pastures	15kg/ha

Suited to All Livestock Types, Silage and Hay



Late Maturity

Australian Release >2021

FORAGE EBV'S - % OF CONTROL CULTIVAR ORETET

VARIETY	MATURITY	MEAN			RUST 1-9	NO. OF TRIALS
	TETILA = 0	WINTER	SPRING	TOTAL	9 = BEST	
Rozen	+9	98	132	108	7.75	3
Arnie	+7	94	134	105	7.38	3
Winter Hawk	0	100	112	104	7.25	3
Oretet	0	100	100	100	6.50	3
Tetilla	0	102	71	90	6.0	2

*Based on up to 3 trials – 2017 Shepparton VIC & Murwillumbah NSW & 2018 Gloucester NSW & Shepparton VIC. ^Rust ratings taken at Murwillumbah October 2017. †All trials run over one calendar year sowing in autumn.

TETRAPLOID ANNUAL RYEGRASS

Adrenalin 2

NEW RELEASE 2023

Adrenalin 2 is a new improved late maturity tetraploid annual ryegrass.

GENERAL FIT

Adrenalin 2 is a new highly winter active annual ryegrass, developed in Europe to replace the highly successful Adrenalin. It has excellent seedling vigour making it suitable for sowing into either clean paddocks or over-sowing into sub-tropical pastures including setaria and kikuyu.

Adrenalin 2 is a few days later flowering than Adrenalin, but a major benefit of Adrenalin 2 is its outstanding rust tolerance. This enables the variety to perform at the highest level in all environments where the season will enable early-mid autumn sowing and progress well into November.

Adrenalin 2 has rust resistance rating of 7.88* (on a scale of 1-9, 9 being the best resistance) in comparison to Tetila's rating of 6. This high resistance rating makes Adrenalin 2 suitable to the coastal northern NSW and QLD markets where rust tolerance is critical to high performance and livestock palatability.
We recommend its use where growing season length can enable it to deliver to its potential.

FEATURES

Tetraploid italian ryegrass	High winter activity
Excellent seedling vigour	Rust rating 7.88*

BENEFITS

- Fast establishing and higher quality
- More feed when it is needed most
- Fast establishing, including over-sowing sub-tropical pastures
- Suited to both northern and southern growing conditions

SOWING RATES

Oversowing kikuyu	30-50kg/ha
>850mm irrigation	35-50kg/ha
700-850mm rainfall	25-30kg/ha
500-700mm rainfall	20-35kg/ha
Oversowing perennial pastures	20kg/ha

Suited to All Livestock Types, Silage and Hay

Late Maturity

Australian Release >2023

2022 WARRNAMBOOL LATE SPRING PRODUCTION**

VARIETY	AVG (KG/HA)					TOTAL
	SUMMER	AUTUMN	WINTER	EARLY SPRING	LATE SPRING	
SF Adrenalin 2	3930	0	784	2536	2004	9254
SF Speedyl	4175	0	701	2481	1973	9330
SF Rozen	4093	0	693	2508	1949	9243
Dash	4411	0	502	2435	1949	9297
Ascend	4106	0	529	2577	1947	9159
Tetila	3822	0	410	2609	1904	8745
Meljump	4821	0	730	2195	1897	9643
Zoom	3838	0	847	2390	1879	8954
Melworld	4409	0	649	2328	1872	9258
Pinnacle	4275	0	717	2343	1868	9203
Loader	3716	0	737	2498	1861	8812
Buster	4167	0	382	2485	1842	8876
Mach 1	4101	0	704	2290	1785	8880
Dominator	3870	0	840	2263	1770	8743

* Rust ratings collected at RAGT trial site Murwillumbah 2021

**This information has been sourced from the MLA/PTN website. It is presented by MLA and approved by the PTN TWG in line with ASF Code of Conduct. Refer to the full range of data on the PTN website. https://etools.mla.com.au/ptn/#/ (MLA – Meat & Livestock Australia, PTN – Pasture Trial Network, TWG – Technical Working Group)

Italian Ryegrass

Forage EBV Guide

Italian ryegrass Forage EBVs based on regional replicated trials

VARIETY MATURITY	PLOIDY	VARIETY OR BRAND	MEAN				FLOWERING DAYS FROM TETILA		ME MJ/KG DM	CP%	NDF%	EXTRA MEAT VALUE $/HA	EXTRA MILK VALUE $/HA	NO. OF TRIALS
			WINTER	SPRING	TOTAL	EST YIELD	NSW	WA						
Accelerate 2	diploid	variety	117	113	105	114	+11							9
Pepper	tetraploid	variety	112	107	91	107	+13							5
Thumpa	tetraploid	variety	105	107	105	105								3
Momentum	diploid	variety	96	104	107	101	+14		11.39	22.82	43.70	+$336	+$490	27
Indulgence	diploid	variety	98	105	102	102	+14	+21	11.35	21.87	43.45	+$320	+$475	49
Emmerson	tetraploid	variety	98	105	99	100	+13	+18	11.33	22.50	44.00	+$223	+$347	46
Asset AR37	diploid	variety	105	104	109	104			11.32	24.67	45.34	+$244	+$341	9
Nourish	tetraploid	variety	100	103	98	102	+14		11.23	20.55	44.23	+$173	+$274	29
Feast II	tetraploid	variety	101	102	102	102	+12		11.20	22.51	44.44	+$174	+$268	43
Accelerate	diploid	variety	102	107	113	105	+12	+21	11.07	21.65	45.39	+$164	+$212	49
Tonuss	diploid	variety	100	104	110	103	+15		11.22	23.85	45.77	+$142	+$190	28
Maverick GII	diploid	variety	94	103	106	100	+14		11.14	22.05	44.95	+$69	+$119	27
Hulk	diploid	variety	100	99	100	99	+12		11.09	21.49	45.15	+$27	+$54	37
Crusader	diploid	variety	100	100	100	100	+12	+18	11.10	22.29	46.08	$0	$0	48
Aston	tetraploid	variety	100	96	86	98		+18	11.22	22.74	45.14	-$36	-$1	13
Sonik	diploid	variety	102	101	90	101	+10		11.03	23.45	45.98	-$7	-$12	22
Diplex	diploid	variety	107	98	85	101	+7		10.85	24.65	46.50	-$67	-$126	11
Concord 2	diploid	variety	104	103	102	103			10.91	20.11	46.91	-$86	-$140	12
Knight	diploid	variety	106	102	92	104			10.83	20.94	47.64	-$148	-$242	16
Eclipse Select	diploid	variety	102	97	52	99								5
Charger	diploid	variety	104	91	70	95	+7		10.78	21.00	47.28	-$363	-$496	8

Relative rankings have been undertaken by comparing all yields as a percentage of Tetila. Yield data is hundredised means from a minimum of three and up to 52 trials per variety/brand. Varieties ranked on potential value first, or total yield where no nutritive value information is available. **Notes:** Feed quality data undertaken prior to all grazings from trials at Gundagai and Lismore (NSW) with hundredised means reported. Feed quality analysis undertaken by NSW DPI Feed Quality Service at Wagga Wagga. Meat and milk values estimated using Seed Force's Animal Performance Calculator based on the following assumptions: · Meat at 65% feed utilisation, based on 300kg steer with 44MJ for maintenance and 45MJ/kg lwg at $3.50/kg. · Milk at 75% feed utilisation, based on 600kg cow with 100MJ for maintenance/exercise/pregnancy and 5.5MJ/litre at $0.53 per litre. Based on seed prices and ASF seeds database as at 1.12.2019. Varieties must have either Plant Breeders Rights, ASA or OECD Accreditation. They must be distinctive, uniform and consistent. Brands do not have to meet these requirements and may vary.

DIPLOID ITALIAN RYEGRASS

Accelerate 2

Accelerate 2 is a new highly winter active italian ryegrass, developed in Europe from a number of highly successful Australian and New Zealand bred varieties.

GENERAL FIT

Accelerate 2 has excellent seedling vigour making it suitable for sowing into either clean paddocks or over-sowing into sub-tropical pastures including setaria and kikuyu.

Accelerate 2 has similar maturity to Accelerate, but has reduced aftermath heading and much improved disease resistance.

The background material was artificially inoculated and heavily screened for improved tolerance to crown rust and bacterial wilt. Only those lines showing strong resistance were then re-combined into the final product. Accelerate2 also has good tolerance to stem rust.

FEATURES

Diploid Italian ryegrass	High winter activity
Excellent seedling vigour	Good heat tolerance

BENEFITS

- Dense tillering for improved persistence
- More feed when it is needed most
- Fast establishing, including oversowing sub tropical pastures
- Improved ability to handle warmer conditions late in the season

SOWING RATES

Oversowing kikuyu	30-40kg/ha
>850mm irrigation	30-40kg/ha
700-850mm rainfall	20-25kg/ha
500-700mm rainfall	20kg/ha
Oversowing perennial pastures	15kg/ha

Suited to All Livestock Types, Silage and Hay

Late Maturity

Australian Release >2021

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

VARIETY MATURITY	PLOIDY	MEAN				FLOWERING DAYS FROM TETILA		ME MJ/KG DM	CP%	NDF%	EXTRA MEAT VALUE $/HA	EXTRA MILK VALUE $/HA	NO. OF TRIALS
		WINTER	SPRING	SUMMER	TOTAL	NSW	WA						
Accelerate 2	dip	117	113	105	114	+11	+20						9
Momentum	dip	96	104	107	101			11.39	23.82	43.70		+$490	27
Asset AR37	dip	105	104	109	104			11.32	24.67	45.34	+$223	+$341	9
Maverick GII	dip	94	103	106	100	+14		11.14	22.05	44.95	+$69	+$119	27
Hulk	dip	100	99	100	99	+12		11.09	21.49	45.15		+$54	37
Crusader	dip	100	100	100	100	+12	+18	11.10	22.29	46.08	$0	$0	48
Sonik	dip	102	101	90	101	+10		11.03	23.45	45.98	-$7	-$12	22
Diplex	dip	107	98	85	101	+7		10.85	24.65	46.50	-$67	-$126	11
Concord 2	dip	104	103	102	103			10.91	20.11	46.91	-$86	-$140	12
Knight	dip	106	102	92	104			10.83	20.94	47.64	-$148	-$242	16
Eclipse Select	dip	102	97	52	99								5
Charger	dip	104	91	70	95	+7		10.78	21.00	47.28	-$363	-$496	8

*Yield data is hundredised means from a minimum of three and up to 51 trials per variety/brand. *Meat and milk values estimated using Seed Force's Animal Performance Calculator based on the following assumptions: · Meat at 65% feed utilisation, based on 300kg steer with 44MJ for maintenance and 45MJ/kg lwg at $3.50/kg. · Milk at 75% feed utilisation, based on 600kg cow with 100MJ for maintenance/exercise/pregnancy and 5.5MJ/litre at $0.53 per litre.

Indulgence

Indulgence is the world's first diploid italian ryegrass with the feed quality of a tetraploid.

INDULGE YOUR MOST IMPORTANT BUSINESS PARTNERS

Indulgence is a unique diploid italian ryegrass with the feed quality of a tetraploid.

It offers producers a variety with the quality of a tetraploid in a variety with the higher tiller density and persistence of a diploid.

Indulgence also has excelent resistance to rust and will perform later into the late spring and summer than most other nil endophyte italian ryegrass.

FEATURES

Diploid Italian ryegrass

Outstanding feed quality

Excellent disease rating with very low rust

BENEFITS

- High tillering and dense variety
- Cool season quality benefits of a tetraploid. Warm season persistence and quality of a diploid
- Late season feed maintaining high quality

SOWING RATES

Oversowing kikuyu	30-40kg/ha
>850mm irrigation	30-40kg/ha
700-850mm rainfall	20-25kg/ha
500-700mm rainfall	20kg/ha
Oversowing perennial pastures	15kg/ha

Suited to All Livestock Types, Silage and Hay

Late Maturity

Australian Release >2007

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

VARIETY	PLOIDY	MEAN				FLOWERING DAYS FROM TETILA		ME MJ/KG DM	CP%	NDF%	EXTRA MEAT VALUE $/HA	EXTRA MILK VALUE $/HA	NO. OF TRIALS
		WINTER	SPRING	SUMMER	TOTAL	NSW	WA						
Indulgence	dip	98	105	102	102	+14		11.35	21.87	43.45	+$225	+$475	49
Asset AR37	dip	105	104	109	104			11.32	24.67	45.34	+$223	+$341	9
Maverick GII	dip	94	103	106	100	+14		11.14	22.05	44.95	+$69	+$119	27
Hulk	dip	100	99	100	99	+12		11.09	21.49	45.15		+$54	37
Crusader	dip	100	100	100	100	+12	+18	11.10	22.29	46.08	$0	$0	48
Sonik	dip	102	101	90	101	+10		11.03	23.45	45.98	-$7	-$12	22
Diplex	dip	107	98	85	101	+7		10.85	24.65	46.50	-$67	-$126	11
Concord 2	dip	104	103	102	103			10.91	20.11	46.91	-$86	-$140	12
Knight	dip	106	102	92	104			10.83	20.94	47.64	-$148	-$242	16
Eclipse Select	dip	102	97	52	99								5
Charger	dip	104	91	70	95	+7		10.78	21.00	47.28	-$363	-$496	8

*Yield data is hundredised means from a minimum of three and up to 51 trials per variety/brand. *Meat and milk values estimated using Seed Force's Animal Performance Calculator based on the following assumptions: · Meat at 65% feed utilisation, based on 300kg steer with 44MJ for maintenance and 45MJ/kg lwg at $3.50/kg. · Milk at 75% feed utilisation, based on 600kg cow with 100MJ for maintenance/exercise/pregnancy and 5.5MJ/litre at $0.53 per litre

TETRAPLOID ITALIAN RYEGRASS

Emmerson

Emmerson is a new generation broad leaved tetraploid Italian ryegrass adapted to a wide range of environments.

MORE ENERGY WHEN THE HEAT IS ON

Emmerson has excellent establishment vigour and produces best in warm environments. It has good autumn-early winter production and a large spring flush, ideal for fodder conservation.

It has shown higher ME levels and lower NDF levels than diploid Italian ryegrass (except Indulgence) through the cool growing season offering more energy for conversion to meat or milk production. It has also shown excellent disease tolerance, in particular a low incidence of rust in humid environments. It has a very large seed, much larger than other tetraploids and we recommend sowing it at 35kg/ha.

FEATURES

- Large seed with excellent vigour
- Late season tetraploid Italian ryegrass
- Very good quality with very good disease tolerance

BENEFITS

- Fast establishment and grazing recovery
- Ideal for spring flush and fodder conservation
- Can provide better liveweight gain and milk production per hectare

SOWING RATES

Oversowing kikuyu	35-50kg/ha
>850mm irrigation	35-50kg/ha
700-850mm rainfall	25-30kg/ha
500-700mm rainfall	20-30kg/ha
Oversowing perennial pastures	20kg/ha

Suited to All Livestock Types, Silage and Hay

Late Maturity

Australian Release >2007

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

VARIETY MATURITY	PLOIDY	MEAN				FLOWERING DAYS FROM TETILA		ME MJ/KG DM	CP%	NDF%	EXTRA MEAT VALUE $/HA	EXTRA MILK VALUE $/HA	NO. OF TRIALS
		WINTER	SPRING	SUMMER	TOTAL	NSW	WA						
Emmerson	tet	98	105	99	100	+13	+18	11.33	22.50	44.00	+$223	+$347	46
Nourish	tet	100	103	98	102	+12		11.23	20.55	44.23	+$173	+$274	29
Feast II	tet	101	102	102	102	+12		11.20	22.51	44.44	+$174	+$268	43
Aston	tet	100	96	86	98		+18	11.22	22.74	45.14	-$36	-$1	13

*Yield data is hundredised means from a minimum of three and up to 51 trials per variety/brand. *Meat and milk values estimated using Seed Force's Animal Performance Calculator based on the following assumptions: · Meat at 65% feed utilisation, based on 300kg steer with 44MJ for maintenance and 45MJ/kg lwg at $3.50/kg. · Milk at 75% feed utilisation, based on 600kg cow with 100MJ for maintenance/exercise/pregnancy and 5.5MJ/litre at $0.53 per litre

Tonuss

Tonuss is a diploid hybrid ryegrass developed to provide high winter production, excellent late season forage quality, improved over-summer production & persistence in the following year.

QUICK ESTABLISHMENT AND EXCELLENT WINTER PRODUCTION

Tonuss is a diploid hybrid ryegrass developed and selected for its excellent persistence under grazing. It has quick establishment and excellent winter production for a hybrid ryegrass.

Tonuss produces a fine dense sward with rapid recovery after grazing, and low aftermath heading for improved late season quality. It has excellent disease resistance to rust and verticilium wilt, making it an ideal grass for production under both high rainfall and summer irrigation.

FEATURES

Diploid	High winter production
Some perennial parentage	Low aftermath heading

BENEFITS

- Lower seeding rate. Fine dense pasture sward
- More feed when it is needed most
- Improved pasture persistence. Better summer and second year production
- Excellent late spring and summer feed quality

SOWING RATES

Oversowing kikuyu	30-50kg/ha
>850mm irrigation	35-50kg/ha
700-850mm rainfall	25-30kg/ha
500-700mm rainfall	20-25kg/ha
Oversowing perennial pastures	15kg/ha

Suited to All Livestock Types, Silage and Hay

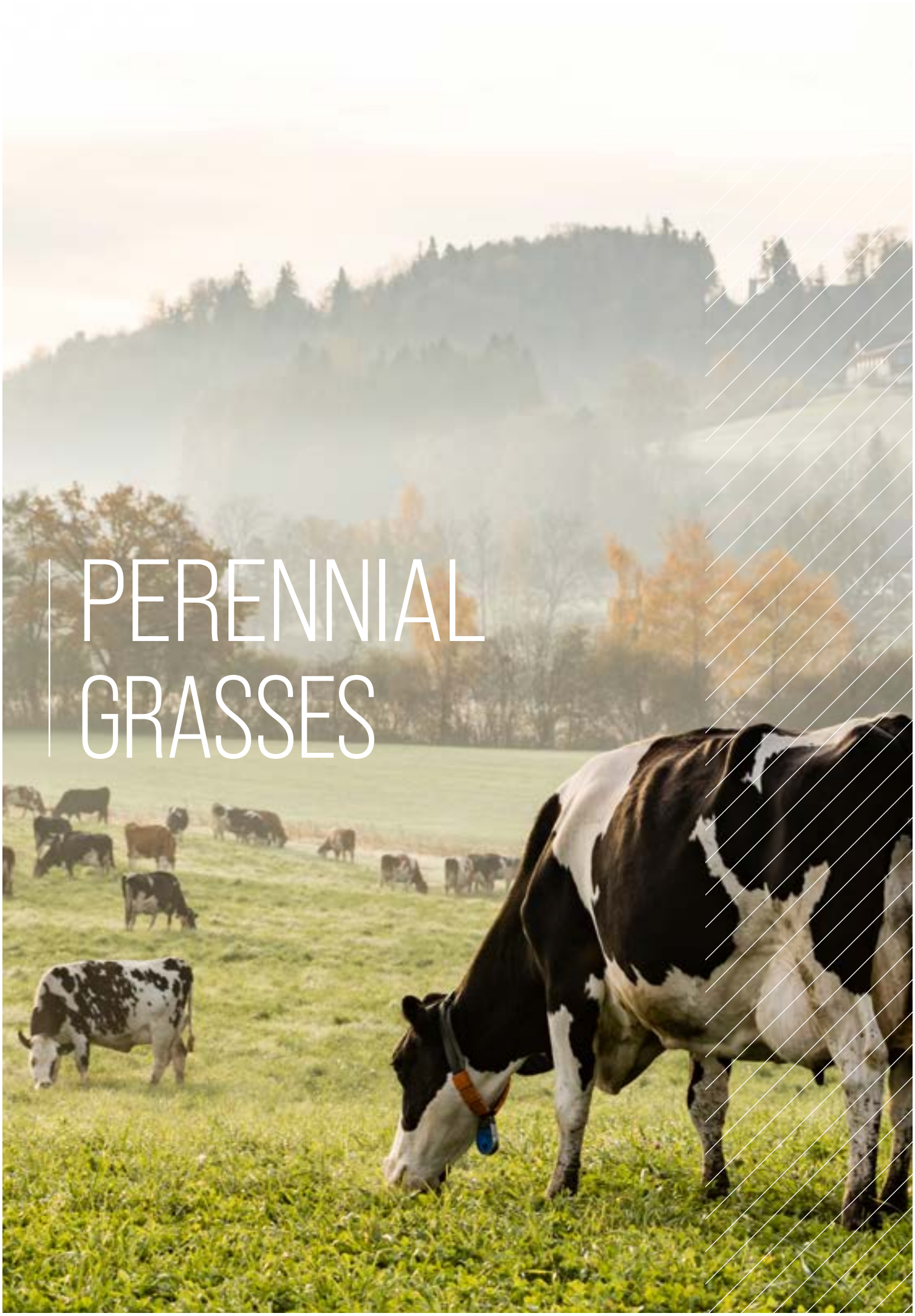
Late Maturity

Australian Release >2011

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

VARIETY MATURITY	PLOIDY	MEAN				FLOWERING DAYS FROM TETILA	ME MJ/KG DM	CP%	NDF%	EXTRA MEAT VALUE $/HA	EXTRA MILK VALUE $/HA	NO. OF TRIALS
		WINTER	SPRING	SUMMER	TOTAL							
Tonuss	dip.	99	104	109	101	+15	11.22	23.85	45.77	+$83	+$122	24
Maverick GII	dip.	95	103	106	100	+14	11.14	22.05	44.95	+50	+$95	27
Crusader	dip.	100	100	100	100	+12	11.10	22.29	46.08	+$0	+$0	42

*Yields based on up to 42 trials in Australia from 2006–2015. *Meat and Milk values developed using Seed Force's Animal Performance Calculator, based on 65% pasture utilisation for meat at $2.50/kg liveweight, and 75% utilisation for milk at 40c/litre.

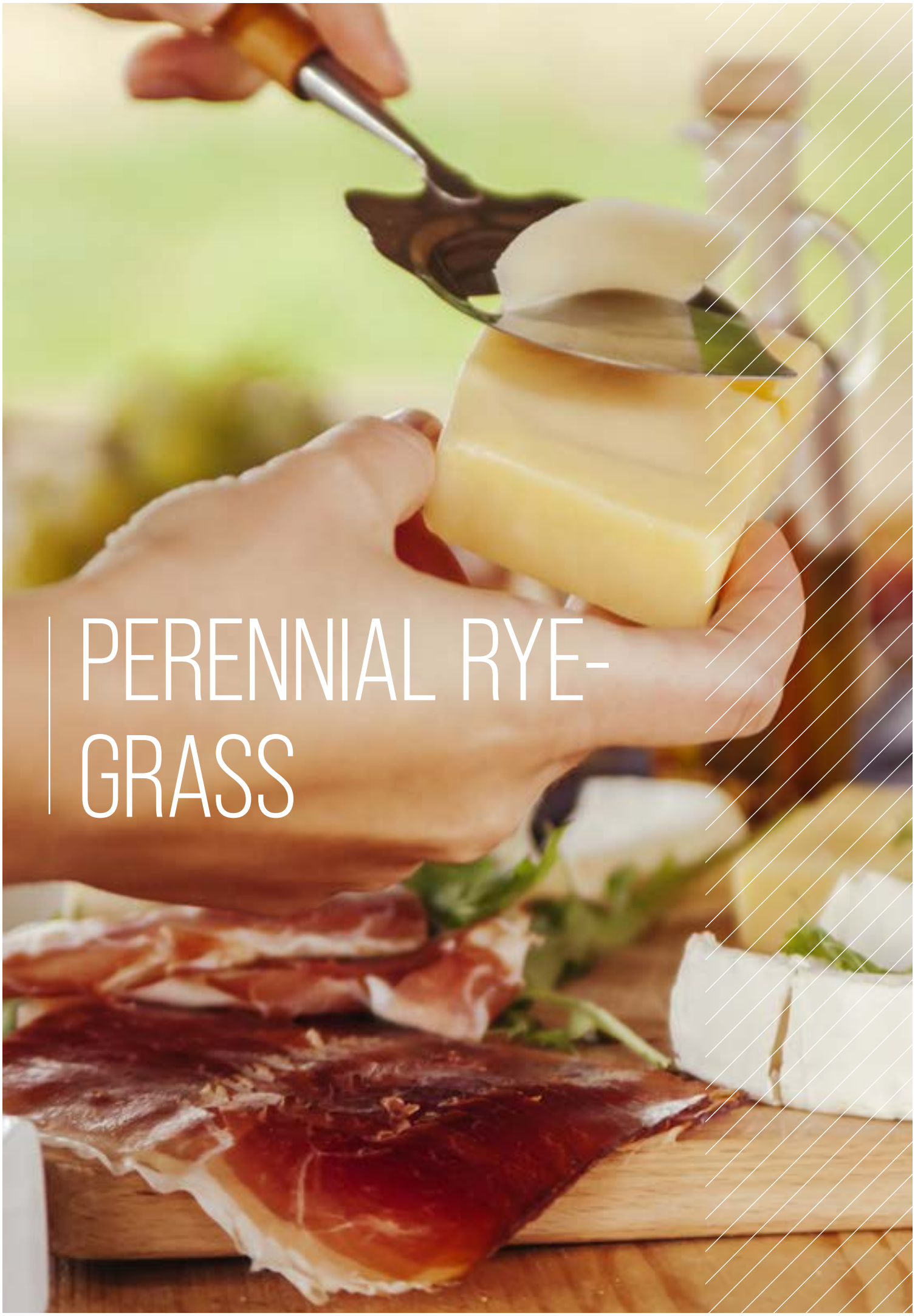


PERENNIAL GRASSES

Temperate Perennial Grass Selection

Perennial grasses form the backbone of much of feed base for the high rainfall temperate zones of Australia. There are a number of options with specific attributes, and in most cases one species should be sown alone with companion legumes. In some situations two different species can be used together to broaden feed supply or to combine a higher quality and less persistent species with another to increase the longevity of one grass species.

Rainfall Zone	Climate	Soils	Preferred species
Winter Rainfall	Cool Climate Mild Summers	Better Fertility. Soft Summers	Perennial Ryegrass
		Heavier Soils. Waterlogging Prone	Phalaris - All Types
		Lighter Soils. High Aluminium	Cocksfoot
	Warmer Climate Hot Summers	Better Fertility. Soft Summers	Mediterranen Tall Fescue
		Heavier Soils. Waterlogging Prone	Phalaris Winter Active
		Lighter Soils. High Aluminium	Cocksfoot Prairie Grass
Intermediate Rainfall	Cool Climate Mild Summers	Better Fertility. Soft Summers	Perennial Ryegrass or Tall Fescue
		Heavier Soils. Waterlogging Prone	Phalaris
		Lighter Soils. High Aluminium	Cocksfoot Prairie Grass
	Warmer Climate Hot Summers	Better Fertility. Soft Summers	Tall Fescue
		Heavier Soils. Waterlogging Prone	Phalaris
		Lighter Soils. High Aluminium	Cocksfoot Prairie Grass
Summer Rainfall	Cool Climate Mild Summers	Better Fertility. Heavier Soils	Tall Fescue Summer Active
		Lighter Soils. High Aluminium	Cocksfoot Prairie Grass
	Warmer Climate Hot Summers	Better Fertility. Heavier Soils	Mediterranen Tall Fescue
		Better Fertility. Rotational Grazing	Brome Grass Prairie Grass



PERENNIAL RYE-GRASS

DIPLOID PERENNIAL RYEGRASS

Hustle^{AR1}

HIGHEST GROUP DAIRY AUSTRALIA FORAGE VALUE INDEX

Hustle^{AR1} is the culmination of a collaboration between Seed Force, RAGT and R2n: the research arm of RAGT.

UNIQUE NEW GENETICS

Hustle^{AR1} is a new perennial ryegrass with the strong cool season activity of NZ bred material, the persistence and warm season quality from European material and hardiness for the summer dry conditions experienced in Australia.

Hustle^{AR1} has performed in the top group of varieties in Dairy Australia's Forage Value Index for the four different dairy regions where perennial ryegrass is the major species: Gippsland, South west and Northern Victoria and Tasmania.

For specific regional performance review data on:
dairyaustralia.com.au/farm/feedbase-and-animalnutrition/pasture/forage-value-index

FEATURES

Diploid perennial ryegrass	High winter activity
Excellent feed quality	Good disease resistance

BENEFITS

- Dense tillering for improved persistence
- More feed when it is needed
- Outstanding animal performance
- Increased palatability by stock

SOWING RATES

Dryland 600-700mm rainfall	12-16kg/ha
>700mm rainfall or irrigation	16-20kg/ha

Suited to All Livestock Types, Silage and Hay

Mid–Late Maturity

Australian Release >2017

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS* YIELDS IN KGDM/HA

ENTRY	ENDOPHYTE	PLOIDY	MATURITY	2014	2015	2016	TOTAL
Hustle^{AR1}	AR1	diploid	+10 days	6,766	9,338	10,184	26,287
Base	AR37	tetraploid	+23 days	6,038	9,563	9,426	25,028
Avalon	AR1	diploid	+3 days	5,576	8,660	10,401	24,637
Impact	Nea2	diploid	+21 days	7,003	8,195	8,941	24,138
One 50	AR1	diploid	+21 days	6,134	8,922	8,841	23,896
Arrow	AR1	diploid	+7 days	5,518	8,217	10,145	23,881
Banquet II	Endo 5	tetraploid	+21 days	6,213	8,743	8,775	23,730
Matrix	HE	diploid	+23 days	5,922	8,433	9,071	23,426
Halo	AR37	tetraploid	+25 days	5,826	9,217	8,179	23,221
Revolution	AR1	diploid	+19 days	5,077	8,304	8,772	22,153
Extreme	AR37	diploid	0	5,123	8,152	8,813	22,088
Bealey	Nea2	tetraploid	+25 days	5,328	8,144	8,486	21,958
Helix	AR1	diploid	+6 days	4,784	7,493	9,420	21,697
Victorian	HE	diploid	-10 days	5,732	7,197	8,701	21,630
Nui	HE	diploid	0	5,272	7,840	8,308	21,420

*Based on trial Warrnambool Victoria, sown 22 April 2014.

Moxie[AR1]

HIGHLY WINTER ACTIVE

Moxie[AR1] was developed by RAGT and R2n with tough Australian and New Zealand conditions in mind

Moxie [AR1] was bred specifically for Australian and New Zealand conditions.

Moxie is a very productive diploid with high yields, including excellent winter growth.

Its semi-upright growth and higher tiller density means it will fit well into systems requiring a highly productive perennial ryegrass. While its heading date (0 days), helps to ensure good early season performance. Sow Moxie as the main grass component, or mix with other RAGT perennial grasses, such as Hustle perennial ryegrass and/or Lazuly cocksfoot for additional pasture resilience.

FEATURES

Diploid perennial ryegrass	Highly Winter Active
Early Maturity	Safe AR1 Endophyte option

BENEFITS

- Tiller density for improved persistence
- More feed in cooler conditions
- Excellent forage quality

SOWING RATES

Dryland 500-700mm rainfall	12-16kg/ha
>700mm + irrigation	16-20kg/ha

Suited to All Livestock Types, Silage and Hay

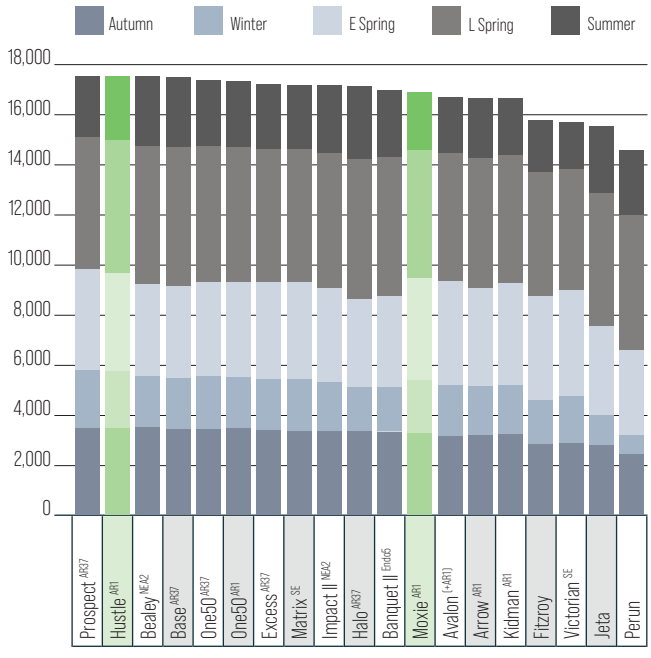
Early Maturity

Australian Release >2014

MOXIE [AR1] HAD THE 3RD HIGHEST WINTER PRODUCTION ACROSS 19 PERENNIAL RYEGRASS CULTIVARS

PTN DATA FROM HOWLONG NSW 2014 TO 2017.

	AUTUMN	WINTER	E SPRING	L SPRING	SUMMER	AVE PA
Prospect [AR37]	3,679	2,311	4,069	5,265	2,456	17,780
Hustle [AR1]	3,670	2,230	3,972	5,336	2,568	17,776
Bealey [NEA2]	3,708	2,020	3,706	5,546	2,794	17,774
Base [AR37]	3,639	2,010	3,703	5,589	2,780	17,721
One50 [AR37]	3,665	2,046	3,805	5,448	2,646	17,610
One50 [AR1]	3,638	2,051	3,820	5,433	2,648	17,590
Excess [AR37]	3,589	2,056	3,856	5,376	2,624	17,501
Matrix [SE]	3,546	2,041	3,909	5,355	2,570	17,421
Impact II [NEA2]	3,558	1,944	3,762	5,479	2,663	17,406
Halo [AR37]	3,550	1,737	3,537	5,654	2,896	17,374
Banquet II [Endo5]	3,483	1,800	3,678	5,576	2,703	17,240
Moxie [AR1]	3,468	2,115	4,084	5,146	2,328	17,141
Avalon [(+AR1)]	3,358	2,041	4,139	5,156	2,240	16,934
Arrow [AR1]	3,391	1,917	3,955	5,243	2,410	16,916
Kidman [AR1]	3,412	1,992	4,069	5,130	2,281	16,884
Fitzroy	3,042	1,745	4,166	4,994	2,062	16,009
Victorian [SE]	3,065	1,870	4,296	4,813	1,890	15,934
Jeta	2,985	1,174	3,559	5,411	2,631	15,760
Perun	2,642	729	3,401	5,429	2,605	14,806



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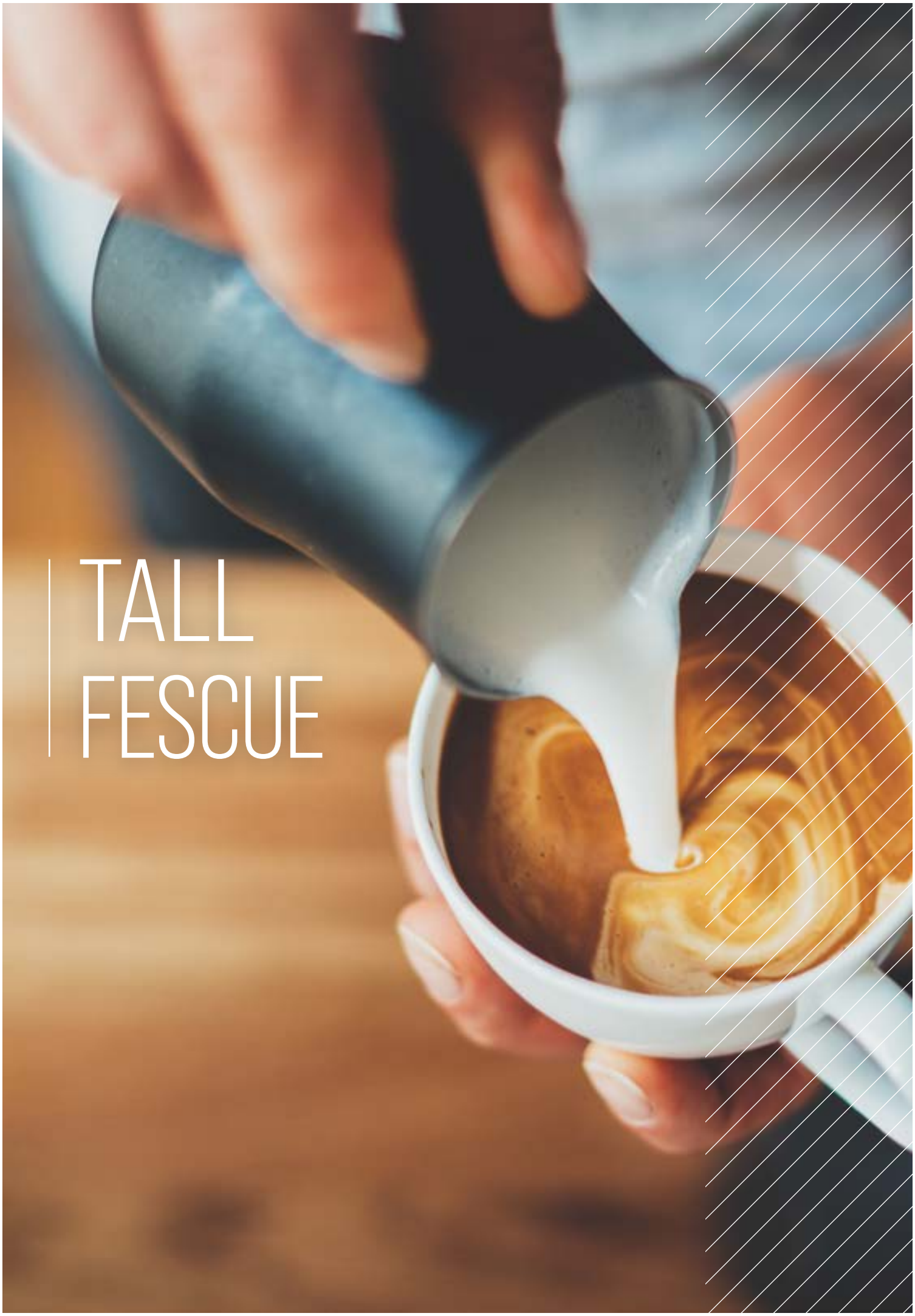

TALL
FESCUE

Tall Fescue Selection

Tall fescue can be divided into two main types:

Mediterranean Tall Fescue is winter active and summer dormant and best suited to warm climate areas with little summer rain and where summer dormancy is important for persistence. This includes the inland slopes of north eastern Victoria, southern and central west NSW and WA.

Continental Types are traditionally summer active with varying degress of winter growth. These types are best suited to northern NSW with its summer rainfall or as the best perennial grass option for hot climate irrigation areas of northern Victoria and NSW. It is also used in summer moist areas of southern Australia such as river or creek flats and swamps.

MEDITERRANEAN

Medallion - good production autumn to spring, but greater winter feed with good summer dormancy.

CONTINENTAL

Finesse-Q - good production across all seasons with focus on warm seasons, fine and dense with soft leaf and excellent quality.

Nouga - good production across all seasons, with greater focus on warm seasons, soft and extremely palatable.

Medallion

Medallion is a summer dormant mediterranean tall fescue. It has been selected to produce similar yields to existing types, but with lower NDF and higher ME for increased animal intake and liveweight gain.

THE MEDAL WINNING WINTER ACTIVE FESCUE

Medallion It has shown excellent palatability and persistence in Australian trials. It has no endophyte and poses no animal health risks to grazing livestock, including horses and alpacas.

Medallion is two weeks later flowering than current mediterranean varieties offered.

FEATURES

High winter production	Excellent feed quality
High summer dormancy	Nil endophyte status

BENEFITS

- Produces feed when it is most needed
- This provides higher liveweight gain and milk per ha
- Provides the plant with outstanding persistence, especially in areas of hot dry summers
- Poses no animal health risks to all livestock classes

SOWING RATES

Sole grass with clovers	8-12kg/ha
Mixes with lucerne	4-6kg/ha

Suited to All Livestock Types, Silage and Hay

Mid Season Maturity

Australian Release >2011

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

TALL FESCUE	YIELD	ME MJ/KG DM	CP %	NDF %	EXTRA MEAT VALUE	EXTRA MILK VALUE
Medallion	100	11.1	24.3	45.5	102	+$181
Resolute	100	10.9	23.3	45.3	103	+$92
Flecha	102	10.8	22.4	46.7	0	$0

*Relative yields based on three year replicated trials at Gundagai 2006, Warrnambool 2012 and Gloucester 2013. * Extra meat values based on mean yields and feed quality analysis undertaken by NSW DPI Feed Analysis Service at 65% utilisation and $3.50/kg liveweight gain.

CONTINENTAL TALL FESCUE

Finesse-Q

Finesse-Q is a high yielding, densely tillered, soft-leaf fescue with semi-late heading. It is extremely persistent due to its dense nature and has no fescue endophyte.

FEEL THE DIFFERENCE

Finesse-Q has an intermediate growth pattern better suited to much of Australia's climate, and has performed well in Australian trails.

Its tiller density and high leaf quality make it well suited to dairy, beef and sheep. Its lack of endophyte makes it also suited to grazing by horses, goats and alpacas.

FEATURES

Deep rooted pastures species	Continental type
Excellent fine leafed, densely tillered variety	

BENEFITS

- High quality, soft-leaf fescue for increased intake. Cultivar recommended for use by dairy cows
- Gives all year round high yields and quality. Best suited to areas of summer rainfall or irrigation
- Provides improved persistence for longer pasture life

SOWING RATES

>850mm irrigation	20-25kg/ha
700-850mm rainfall	15-20kg/ha
500-700mm rainfall	10-15kg/ha

Suited to All Livestock Types, Silage and Hay

Mid Season Maturity

Australian Release >2009

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

VARIETY	AUTUMN	WINTER	SPRING	SUMMER	TOTAL YIELD	NDF%	CP%	ME MJ/KG DM	EXTRA MEAT VALUE $/HA	EXTRA MILK VALUE $/HA	NO. OF TRIALS
Finesse-Q	102	100	103	107	103	49.8	20.1	11.4	+$215	+$368	8
Quantum II MaxP	100	100	100	101	100	50.3	18.1	11.2	$0	$0	8
Demeter	86	87	95	95	92	50.6	18.4	10.9	-$1031	-$1072	3

*Relative yields based on up to 8 three year trials 2006-2017. * Extra meat values ($/ha/yr) based on mean yields at 65% utilisation and $3.50/kg liveweight gain. * Extra milk value ($/ha/yr)estimated based on mean yields at 75% utilisation and $0.53/litre milk.

Nouga

Nouga is a new unique fine leaf tall fescue with leaf softness and palatability closer to perennial ryegrass.

GENERAL FIT

Nouga is a unique new fescue option, with outstanding palatability and improved feed quality over other fescue types. It has very late heading compared to other varieties meaning that it will remain vegetative longer into the spring to maintain quality for either grazing or fodder conservation.

It has fine leaves with minimal serrations that are present in most other tall fescue varieties. As such Nouga more closely resembles perennial ryegrass in appearance, feel and acceptability by livestock.

Nouga is extremely persistent due to its dense nature and has no fescue endophyte. It has an intermediate growth pattern better suited to much of Australia's climate.

Its tiller density and high leaf quality make it well suited to dairy, beef and sheep. Its lack of endophyte makes it also suited to grazing by horses, goats and alpacas.

FEATURES

Fine, palatable leaves	Oceanic/Continental
High feed quality	Excellent disease tolerance

BENEFITS

- Fine, densely tillered, well suited to grazing by livestock
- Less serrations than traditional tall fescue leaf blades
- Fast establishing, including over-sowing sub-tropical pastures
- Improved yield potential and palatability

SOWING RATES

>850mm irrigation	20-25kg/ha
700-850mm rainfall	15-20kg/ha
500-700mm rainfall	10-15kg/ha

Suited to All Livestock Types, Silage and Hay

Mid–Late Maturity

Australian Release >2021

FORAGE EBV'S - % OF CONTROL CULTIVAR QUANTUM II MAXP

VARIETY	AUTUMN	WINTER	EARLY SPRING	LATE SPRING	SUMMER	TOTAL
Finesse-Q	102%	102%	101%	121%	101%	106%
Nouga	102%	97%	97%	124%	102%	103%
Easton MaxP	105%	113%	95%	110%	101%	101%
Quantum II MaxP	100%	100%	100%	100%	100%	100%
Mean yield	1,283	1,384	2,654	3,509	5,423	16,572

*Based on two completed 3 year trials at Christchurch, New Zealand. *Nouga has been sown in Australian trials but those sown during drought conditions failed to establish successfully. Other trials have not yet achieved 3 year status.

COCKSFOOT

Cocksfoot Selection

This perennial grass option has typically been used in high aluminium soils and in marginal ryegrass regions, due to its improved persistence over perennial ryegrass. Older cultivars have typically shown lower quality for animal production, however recent breeding efforts have significantly improved forage quality within some cocksfoot germplasm.

It has good persistence in most soil types, handles low fertility and acid soils, but is sensitive to waterlogging.

THERE IS A RANGE OF COCKSFOOT TYPES

· Summer dormant (Mediterranean types), which provide good autumn to spring feed, but will become dormant over summer to aid persistence. These types are better suited to inland areas with relatively low incidence of summer rain.

· Intermediate types which have good feed across all seasons, but have less summer activity and better persistence than summer active types in harsh environments.

· Summer active (European types) which can provide good warm season feed with some winter production. These are well suited to summer rainfall areas or where extra summer feed is wanted in cool regions which receive some summer moisture.

RAGT has screened many types and has focused its efforts on introducing to Australia new soft leaf types with both high yields and much improved feed quality.

These can be sown at higher density rates for intensive dairy and beef operations to provide a more persistent pasture option than perennial ryegrass with no adverse animal health effects and resistance to most plant pests such as African black beetle.

"I have been very impressed, very impressed with RAGT cocksfoot. It is the first time I have put cocksfoot in. It is quite different to traditional cocksfoot. It maintains its quality, which is great. I was looking for one-kilo a day weight gain, and that has been easily achieved. I am running yearling heifers on it at the moment, but the quality is good enough to milk off. It is very, very palatable. It has enabled me to free up more area of better country for the milking herd."

Graham Forbes - Gloucester, NSW

"The RAGT cocksfoot has been really great. We are really happy with it. We put cross-bred lambs on it in early December and are still doing one kilo a week. There was no persistence in ryegrass varieties, so we thought we would try cocksfoot to see if it would last longer. We can't fault it so far. I guess I was surprised. I was sceptical considering the old cocksfoot was always the last option. I have recommended it to other farmers and we've had quite a few agronomists out here as well."

Richard Gough - Branxholme, VIC

Lazuly

Lazuly is a new type of soft leaf Oceanic (intermediate) cocksfoot with improved winter activity over Greenly.

GOOD GRAZING RECOVERY

Lazuly should be sown at higher sowing rates to produce a fine, dense soft sward. It has no adverse animal health effects from endophyte and good resistance to pasture pests.

Lazuly has performed well in RAGT replicated trials and in commercial sowings in Australia. It has superior quality over other commercial varieties and is a replacement for the highly popular Greenly.

FEATURES

New soft-leaf technology

Excellent production

Good persistence

Increased winter activity

BENEFITS

- Ensures excellent palatability and quality. More feed eaten for conversion to meat or milk
- Suited to all pasture seasons with good grazing recovery. Greater performance than standards over the warm seasons
- A better option in marginal areas to perennial ryegrass and tall fescue
- More feed when it is needed most

SOWING RATES

8-12kg/ha

4-6kg/ha in a mix

Suited to All Livestock Types

Intermediate Summer Active

Australian Release >2009

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

VARIETY	AUTUMN	WINTER	SPRING	SUMMER	TOTAL YIELD	NDF%	CP%	ME MJ/KG DM	EXTRA MEAT VALUE $/HA	EXTRA MILK VALUE $/HA	NO. OF TRIALS
Lazuly	99	106	114	102	110	54.7	19.3	10.6	+$391	+$633	12
Greenly	92	99	112	100	105	55.1	17.9	10.5	+$412	+$449	8
Porto	100	100	100	100	100	56.4	17.9	10.1	$0	$0	9
Savvy	98	109	104	111	105	56.0	19.9	10.5	+$564	+$595	3
Safin	96	110	105	105	104	56.2	21.2	10.9	+$328	+$332	3

*Relative yields based on up to 12 three year trials 2006-2017. * Extra meat values ($/ha/yr) based on mean yields at 65% utilisation and $3.50/kg liveweight gain. * Extra milk value ($/ha/yr)estimated based on mean yields at 75% utilisation and $0.53/litre milk.

Beverly

Beverly is a new soft-leaf Oceanic (intermediate) cocksfoot from the RAGT program that has outproduced Greenly.

GENERAL FIT

Beverly has similar leaf softness, higher ME and lower NDF% like Lazuly, but considerably better than other commercial varieties. This enables it to deliver higher liveweight gain potential.

Beverly has higher overall yield and improved rust resistance to Greenly and Lazuly, but similar persistence. It is a few days later flowering.

FEATURES

High forage yields

Excellent feed quality

Good disease resistance

BENEFITS

- More feed when it is needed
- Outstanding animal performance
- Increased palatability by stock

SOWING RATES

8-12kg/ha

4-6kg/ha in a mix

Suited to All Livestock Types, Silage and Hay

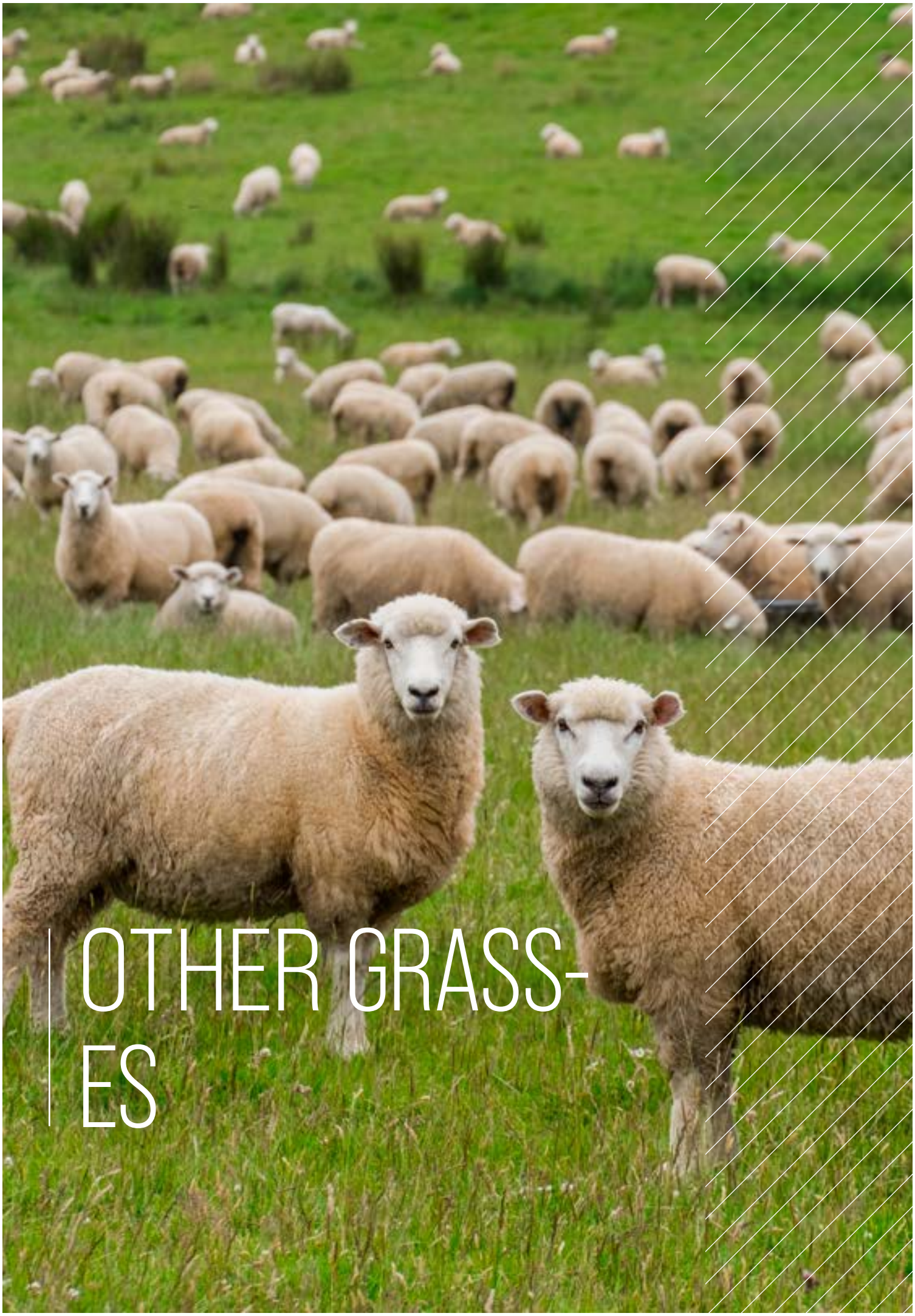
Late Maturity

Australian Release >2019

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

VARIETY	AUTUMN	WINTER	SPRING	SUMMER	TOTAL YIELD	NDF%	CP%	ME MJ/KG DM	EXTRA MEAT VALUE $/HA	EXTRA MILK VALUE $/HA	NO. OF TRIALS
Beverly	108	106	117	132	112	55.6	20.6	10.7	+$640	+$652	5
Greenly	92	99	112	100	105	55.1	17.9	10.5	+$412	+$449	8
Porto	100	100	100	100	100	56.4	17.9	10.1	$0	$0	9
Savvy	98	109	104	111	105	56.0	19.9	10.5	+$564	+$595	3
Safin	96	110	105	105	104	56.2	21.2	10.9	+$328	+$332	3

*Relative yields based on up to 12 three year trials 2006-2017. * Extra meat values ($/ha/yr) based on mean yields at 65% utilisation and $3.50/kg liveweight gain. * Extra milk value ($/ha/yr)estimated based on mean yields at 75% utilisation and $0.53/litre milk.



OTHER GRASSES

Maté

#1 MLA PTN TRIALS

Maté is a highly winter active phalaris bred in Argentina with excellent autumn to spring forage production.

HIGH WINTER PRODUCTION

Maté is a about 2 weeks earlier flowering than Holdfast making it better suited to the 450–600mm mixed farming zone. It can also be sown in mixes with Landmaster or Australian for use in 600–700mm higher rainfall zone.

It can be sown as the sole perennial grass with sub clover, or in a mix with summer active cocksfoot varieties for all year round feed. It is also suited to sowing at 0.5–1kg/ha with lucerne.

Maté is the fastest phalaris in establishment giving it an advantage over other varieties in beating weed competition.

FEATURES

Good seedling vigour	Early flowering
Highly autumn/winter active	Summer dormancy

BENEFITS

- Improved establishment. Greater first year yields
- Improved persistence for better stand longevity
- More feed when it is needed most
- Improved persistence. Improved survival with summer active forages

SOWING RATES

Sole grass with clovers & herbs	3-4kg/ha
Pasture mixes	1-2kg/ha

Suited to All Livestock Types, Silage and Hay

Early–Mid Maturity

Australian Release >2018

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

MEAN	CRESSY '13		CASTERTON '21		WANGARATTA '11		STOCKINGBINGAL '13		BLAYNEY '12		MEAN		NO SITES
	YIELD	%CNTR	YIELD	%CNTRL	YIELD	%CNTRL	YIEL	%CNTRL	YIELD	%CNTRL	YIELD	%CNTRL	
Maté	4,281	106	4,615	108	7,148	109	7,230	105	5,907	102	5,836	106	5
Holdfast GT	4,092	101	4,672	109	7,057	107	7,185	104	5,639	97	5,729	104	5
Advanced AT	4,067	101	4,415	103	7,486	114	6,667	97	5,841	101	5,695	103	5
Landmaster	4,065	100	4,560	106	7,277	111	6,650	97	5,738	99	5,658	103	5
Lawson	3,682	91	4,618	108	6,881	105	7,130	104	5,925	102	5,647	102	5
Atlas PG	3,836	95	4,467	104	7,124	108	6,798	99	5,708	98	5,587	101	5
Holdfast	4,046	100	4,292	100	6,568	100	6,888	100	5,799	100	5,519	100	5
Fosterville	3,729	92	4,141	96	5,434	83	6,538	95	5,456	94	5,060	92	5
Australian II			4,058	95	5,637	86	7,049	102	5,662	98	5,602	95	4
Sirosa	3,723	92	4,821	112	7,190	109			5,862	101		104	4
Australian			4,091	95					5,471	94		95	3
Maru	3,952	98	3,893	91					5,728	99		96	3
Confederate					6,581	100	7,526	109				105	2
PA13(10)							6,637	96				96	1

*Total and relative yields of phalaris at 5 independent trials run by MLA. The information above has been sourced from the MLA/PTN website. It is presented as approved by MLA and PTN and is in line with the ASF code of conduct. To better inform your species and variety choice, refer the full range of data at the PTN website: https://tools.mla.com.au/ptn/#/home.

PRAIRIE GRASS

Jeronimo

NOW TREATED WITH TILT FUNGICIDE FOR HEAD SMUT

Jeronimo is a new highly winter active prairie grass with a broad fit for pasture systems where rotational grazing is used.

A BROAD FIT FOR PASTURE SYSTEMS

Jeronimo has similar maturity to Matua and has excellent capacity for reseeding into pasture swards. It has much improved autumn/winter activity to ensure more feed when it is most needed.

Jeronimo can be sown as the sole grass at high rates for intensive dairy production to provide a boost to autumn winter production. It is especially well suited to the sub tropics.

It can also be used as a component of cocksfoot or tall fescue based perennial pastures to provide re-seeding into the pasture sward, especially around stock camps. It can also be used in mixes with lucerne to provide a balanced pasture with more winter production and no need for expensive winter cleaning.

FEATURES

Excellent palatability	Excellent production
Early maturity	Increased winter activity

BENEFITS

- Has excellent palatability and quality even when seeding
- More feed eaten for conversion to meat or milk
- Suited to all pasture systems under rotational grazing
- Greater performance than standards over the warm seasons
- Enables excellent re-seeding for strong pasture regeneration
- More feed when it is needed most

SOWING RATES

Sole grass with clover & herbs	25-50kg/ha
Perennial pasture mixes	4-5kg/ha

Suited to All Livestock Types, Silage and Hay

Early Maturity

Australian Release >2013

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

VARIETY	AUTUMN	WINTER	SPRING	YR 1	YR 2	TOTAL
Jeronimo	125	124	135	129	128	128
Gala	111	110	126	117	116	116
Atom	115	109	110	111	112	111
Matua	100	100	100	100	100	100

*Based on 2011 sown trial Eurongilly NSW

Acacia Plateau

Acacia Plateau is a fast-establishing forage kikuyu with improved cold tolerance and rapid lateral spreading ability.

THE LATERAL SPREADING KIKUYU FOR LATERAL THINKING PRODUCERS

Acacia Plateau was selected from plants growing at Acacia Plateau at the top of the Clarence River catchment close to the NSW/QLD border some 1000m above sea level.

This has led to a new variety with an ability to establish and grow under cooler temperatures, yet cover over rapidly. Trials have shown it to establish faster and produce more feed than Whittet, especially in the cool season.

It also has higher quality when grazed on a tight rotation length (see table below).

FEATURES

- Rapid lateral spread
- Excellent feed quality
- Broad seed germination period
- High forage yields
- Greater cold tolerance

BENEFITS

- Can achieve pasture coverage faster
- More feed available for livestock
- Improved animal performance
- Can establish under cooler temperatures and in autumn with temperate grasses. Will produce greater winter feed yields
- Can handle staggered moisture profile

SOWING RATES

Sole grass with clovers & herbs	Minimum 5kg/ha
Other tropical grasses with clovers & herbs	2-5kg/ha

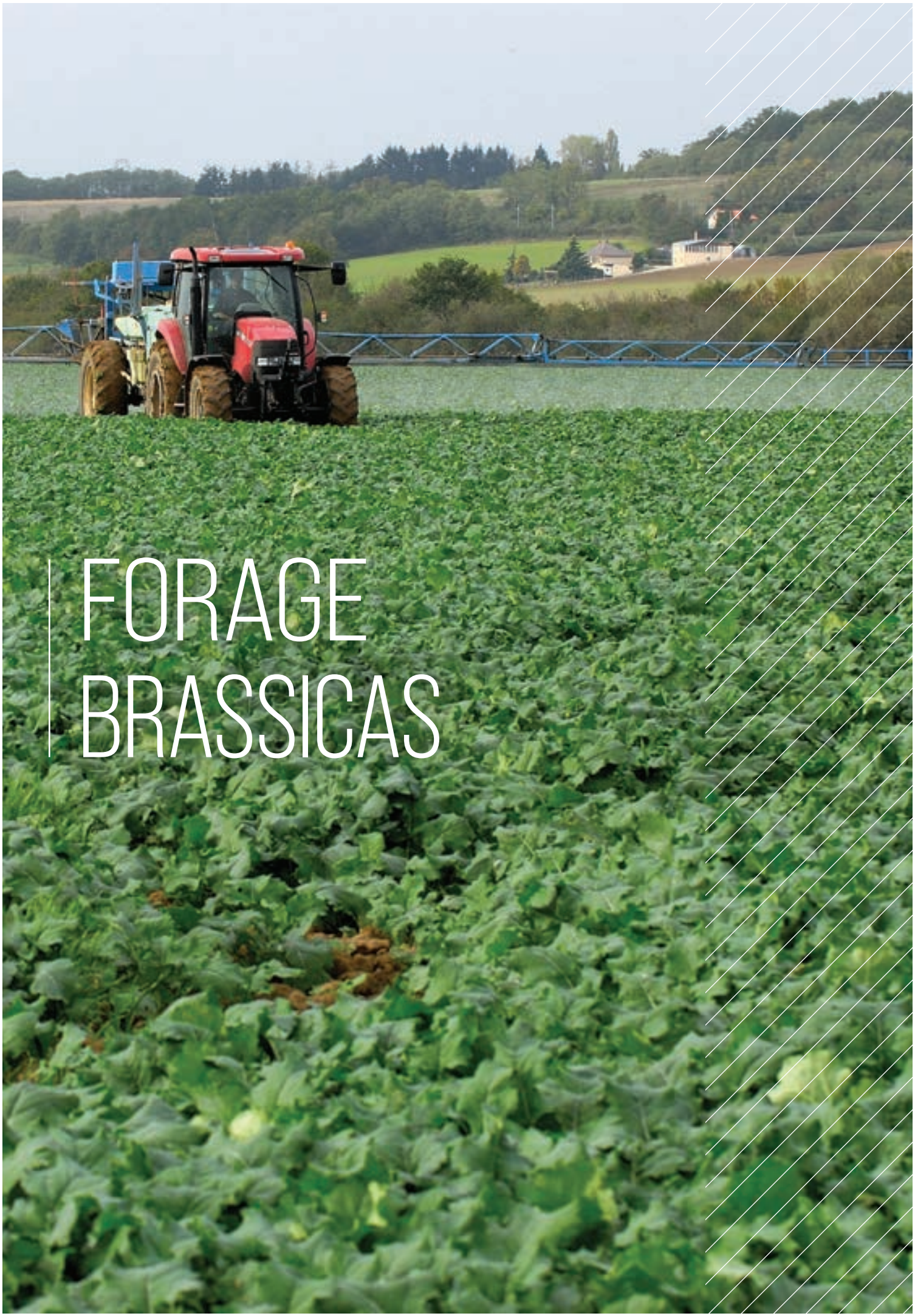
Suited to All Livestock Types, Silage and Hay

Early Maturity

Australian Release >2014

FORAGE EBV'S FORAGE YIELD AND QUALITY

VARIETY	WARM SEASON	COOL SEASON	QUALITY BY ROTATION LENGTH (DAYS)		
	YIELD KG DM/HA		ME MJ/KG DM		
Acacia Plateau	14,816	7,089	12.0	11.3	10.9
Whittet	13,006	6,008	11.3	10.9	10.8
No. of days	242	103	15	19	22
Rainfall	1,038	755			



FORAGE BRASSICAS

Getting the Best from Forage Brassicas

Forage brassicas are well established as a valuable tool for livestock producers. They provide sowing options for most seasons to provide high quality feed to fill both quantity and quality feed gaps.

They also offer opportunities for crop rotations, for disease management and to combat difficult weeds such as barley grass and wimmera ryegrass in grazing and mixed farming situations.

The following pages can help producers to get the best from forage brassicas by providing key information:

- selecting the most appropriate option,
- understanding the time to graze,
- crop agronomy advice,
- grazing management advice, and,
- the extra value of sowing better varieties.

Forage brassicas cover the species: rape, leafy turnips, turnips, swedes, kale and radish. These forages have outstanding feed quality and water use efficiency across various seasons. When fed as part of a balanced ration they can produce high animal performance especially when traditional pastures have poor quality.

Forage brassicas have been used for winter feed mainly in cold climate regions where extremely cold temperatures, frosts and snow reduce traditional winter feed production. In many parts of Tasmania and the tablelands of NSW winter turnips and kale are sown under cool summer conditions to provide high quality winter feed.

Forage rapes with very late flowering and longer growing seasons can also be sown at this time to produce winter feed with additional re-growth potential. Forage brassicas fit well into livestock production systems and can also provide significant benefits as a high quality summer feed. They can be sown from late winter through spring and provide high quality feed when the existing pasture feed base starts to lose quality.

They can be used to clean up a run-down pasture. This is best achieved by spraying to control all weeds and preparing a seedbed for a forage brassica that can then be followed up by direct drilling a new pasture or winter crop. Forage brassicas are high in quality and can enable liveweight gains to be maintained at similar levels to the spring pasture flush, as well as maintain high milk production when fed as part of the ration to dairy cows. When fed they have a similar feed value to grain, but at a much lower cost.

SINGLE GRAZING OPTIONS

Turnips can produce very high yields for a one-off grazing, enabling paddocks to be prepared early for re-sowing. They can be sown at low rates (0.8–2kg/ha) and provide feed from 10–12 weeks after planting.

MULTIPLE GRAZING OPTIONS

Where producers are not planning to early autumn sow, or where they are looking for brassicas to fill the critical autumn feed pinch, forage rapes or leafy turnips offer an excellent option.

Forage rape maintains high quality over late summer and autumn, re-growth from rain will be faster than any early pasture sowing as rape's deep root system ensures good persistence during the hot dry summer and rapid response from autumn rain.

Leafy turnips provide much faster feed as they are more shallow rooted putting reserves into above ground growth. They also have faster regrowth than forage rape. As such they are best suited to mild growing conditions or where feed is required rapidly.

Getting the Best from Forage Brassicas Cont.

When do you want the feed?

Winter/Spring

Multiple Grazings

Quick Feed	Highest Yield Graze	High Yield
Graze 6-8 weeks after sowing. Finish September	Graze 8-10 Weeks after sowing Finish November/ December	Graze 10-12 weeks after sowing. Finish November/ December
Pacer	Hybra F1 Hybrid	Greenland

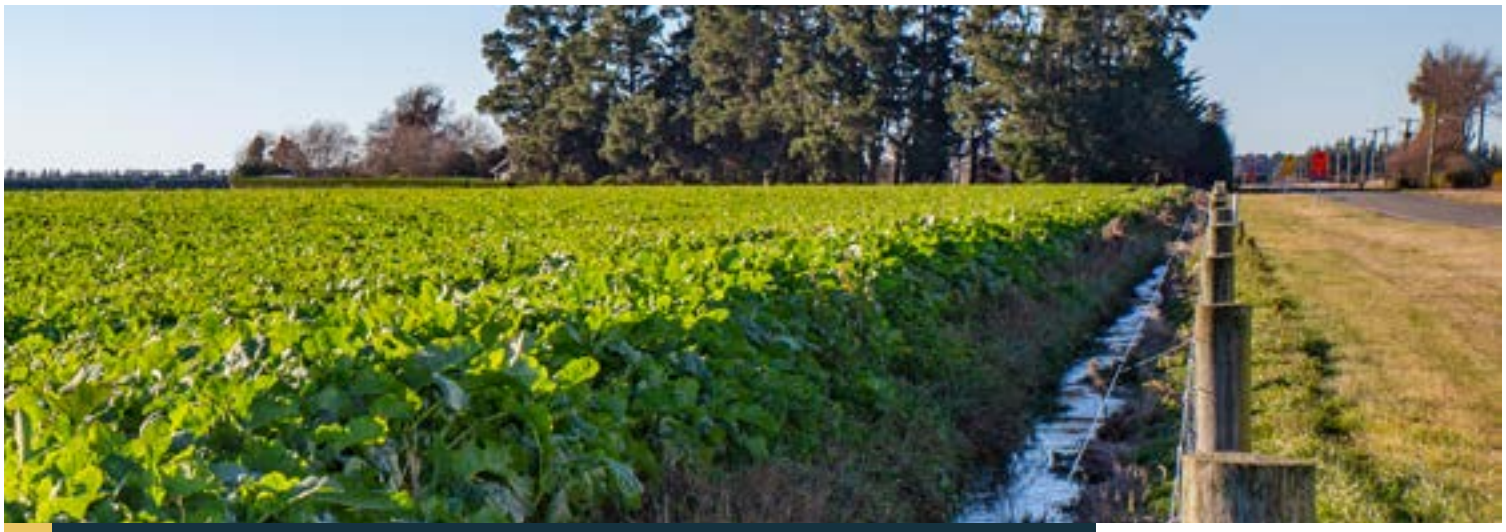
Summer/Autumn

Multiple Grazings

Quick Feed	Highest Yield Graze	High Yield
Graze 6-8 weeks after sowing.	Graze 8-10 weeks after sowing.	Graze 10-12 weeks after sowing.
Pacer	Hybra F1 Hybrid	Greenland

Single Grazing

Winter Feed
Graze 14-16 weeks after sowing.
G2



LEAFY TURNIP

Pacer

Pacer has been bred as a replacement for Pasja by its plant breeder.

SETTING THE PACE

Pacer was selected from four breeder's lines bred and evaluated for increased yield, improved regrowth and reduced bolting between grazings. In Australian and New Zealand trials it has shown rapid establishment, fast growth to first grazing and outstanding re-growth.

FEATURES

Fast to first grazing	Higher yielding
Improved re-growth potential	Reduced bolting

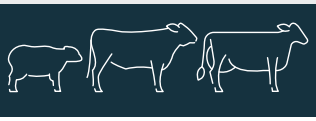
BENEFITS

- Can provide earlier feed for livestock
- Can deliver more liveweight gain or milk per hectare
- Provides more feed from later grazings
- Provides better quality longer

SOWING RATES

3-5kg/ha

Stock Suitability:
Dairy, Sheep & Beef



6–8 Weeks
After Sow

Australian
Release >2007

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

FORAGE RAPE	SOWING RATES	MATURITY	GRAZINGS	YIELD WINFRED = 100	EXTRA MEAT VALUE $/HA	EXTRA MILK VALUE $/HA	NO OF TRIALS
Pacer	3-4kg/ha	42-56 days	Multiple	112	+$207	+$209	9
Pasja	3-4kg/ha	42-56 days	Multiple	100	+$0	+$0	7
Hunter	3-4kg/ha	42-56 days	Multiple	102	+$33	+$101	7
Pasja 2	3-4kg/ha	42-56 days	Multiple	103	+$48	+$151	2

*Relative yields based on up to nine replicated Australian trials 2006-2019. Meat value using 70% utilisation of feed with feed conversion ratio of 8:1at $3.50/kg lwg. *Milk value estimated using 80% utilisation of feed fed at 5kg/cow/day at $0.53/litre milk.

Greenland

Greenland is a high yielding forage rape that can be used by dairy, beef and sheep producers to produce high quality feed in any season where moisture during growing season will allow.

THE NEW BENCHMARK FOR FORAGE RAPE

Due to its late flowering, Greenland is well suited to sowing during late summer until spring. It is consistently producing high yields when sown for either winter or summer feed.

Greenland has become the rape of choice for producers looking to improve their profitability from growing forage rape.

FEATURES

- Fast to first grazing
- Higher yielding
- Improved re-growth potential
- Reduced bolting

BENEFITS

- Can provide earlier feed for livestock
- Can deliver more liveweight gain or milk per hectare
- Provides more feed from later grazings
- Provides better quality longer

SOWING RATES

3-5kg/ha

Stock Suitability:
Dairy, Sheep & Beef

10–12 Weeks
After Sow

Australian
Release >2006

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

FORAGE RAPE	SOWING RATES	MATURITY	GRAZINGS	YIELD WINFRED = 100	EXTRA MEAT VALUE $/HA	EXTRA MILK VALUE $/HA	NO OF TRIALS
Greenland	3-4kg/ha	70-90 days	Multiple	125	+$472	+$1,416	18
Winfred	3-4kg/ha	70-90 days	Multiple	100	+$0	+$0	18
Pillar	3-4kg/ha	90-110 days	Multiple	118	+$346	+$1039	3
Goliath	3-4kg/ha	90-120 days	Multiple	115	+$278	+$838	16
Titan	3-4kg/ha	70-90 days	Multiple	107	$120	+$373	8
Mainstar	3-4kg/ha	70-90 days	Multiple	95	-$107	+$295	2

*Relative yields based on up to nine replicated Australian trials 2006-2019. Meat value using 70% utilisation of feed with feed conversion ratio of 8:1 at $3.50/kg lwg. *Milk value estimated using 80% utilisation of feed fed at 5kg/cow/day at $0.53/litre milk.

G2

G2 is a diploid, green-skinned, white fleshed turnip. It is a later maturing round traditional globe turnip for winter use.

THE WINTER TURNIP

G2 is a high quality bulb that will keep well over winter, plus a high ratio of palatable leaf. It is an ideal replacement for Green Globe.

FEATURES

- Later maturing globe turnip
- High keeping quality bulb
- High ratio of palatable leaf

BENEFITS

- Can be grown to use as deferred winter feed. Also suitable for late summer and autumn feed
- Keeps good quality well over winter under wet and frosty conditions
- Higher energy in leaf can enable greater conversion to meat or milk

SOWING RATES

0.5-2.0kg/ha

Stock Suitability:
Dairy, Sheep & Beef

14–16 Weeks
After Sow

Australian
Release >2009

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

GLOBE TURNIP	SOWING RATES	MATURITY	GRAZINGS	LEAF YIELD	BULB YIELD	TOTAL YIELD
G2	0.8–2kg/ha	100–130 days	Single	125	120	123
Green Globe	0.8–1.5kg/ha	100–130 days	Single	100	100	100

*Relative yields based on up to nine replicated Australian trials 2006-2019. Meat value using 70% utilisation of feed with feed conversion ratio of 8:1at $3.50/kg lwg. *Milk value estimated using 80% utilisation of feed fed at 5kg/cow/day at $0.53/litre milk.

Forage Brassica Management

MAXIMISING FORAGE YIELD

- Forage brassicas will handle a broad pH (CaCl2) range from 4.6–8.6.
- Ensure up to date soil or plant tissue test information to identify potential nutrient deficiencies.

1. WEED AND PEST PREVENTION

- Sow into a weed free seedbed.
- Spray any existing weeds with glyphosate and tank mix with insecticide for any pests.
- Consider pre-emergent application of Trifluralin if wireweed is likely to be a problem.

2. SOWING

- Brassicas should be shallow sown (5–10mm) and covered with roller, chain or mesh.
- Sow rape or leafy turnip at 3-5kg/ha, using higher rates for higher rainfall or rougher seedbeds.
- Sow with Triple Super into worked paddocks, use MAP or DAP if direct drilling.
- Sow with around 20kg P/ha, using low sulphur based fertilisers.
- Address any trace element deficiency, especially molybdenum and boron.

3. MONITOR AND TREAT FOR PESTS

- Forage rape is susceptible at emergence to pests, especially Redlegged Earth Mite
- We recommend using insecticide treated seed.

4. APPLY NITROGEN 3–4 WEEKS AFTER ESTABLISHMENT

- To increase yields apply up to 60kg N/ha (125kg/ha Urea) 3–4 weeks after establishment.
- Do not apply nitrogen within four weeks of feeding off crop.

Forage Brassica

Grazing the Crop

1. GRAZE AT MATURITY

- Forage brassicas should be allowed to mature to minimise risks of stock health disorders.

2. TRANSITION

- Allow generous transition time for grazing any brassica crop.
- Sudden access can upset the balance of rumen microbes, resulting in poor animal performance, scouring and acidosis.
- When introducing animals to brassica crops, allow stock access to pasture, or feed out hay, straw or silage before grazing the crop.
- Begin grazing the crop for short periods each day, building up to a maximum allowance over a week.

3. PROVIDE FIBRE

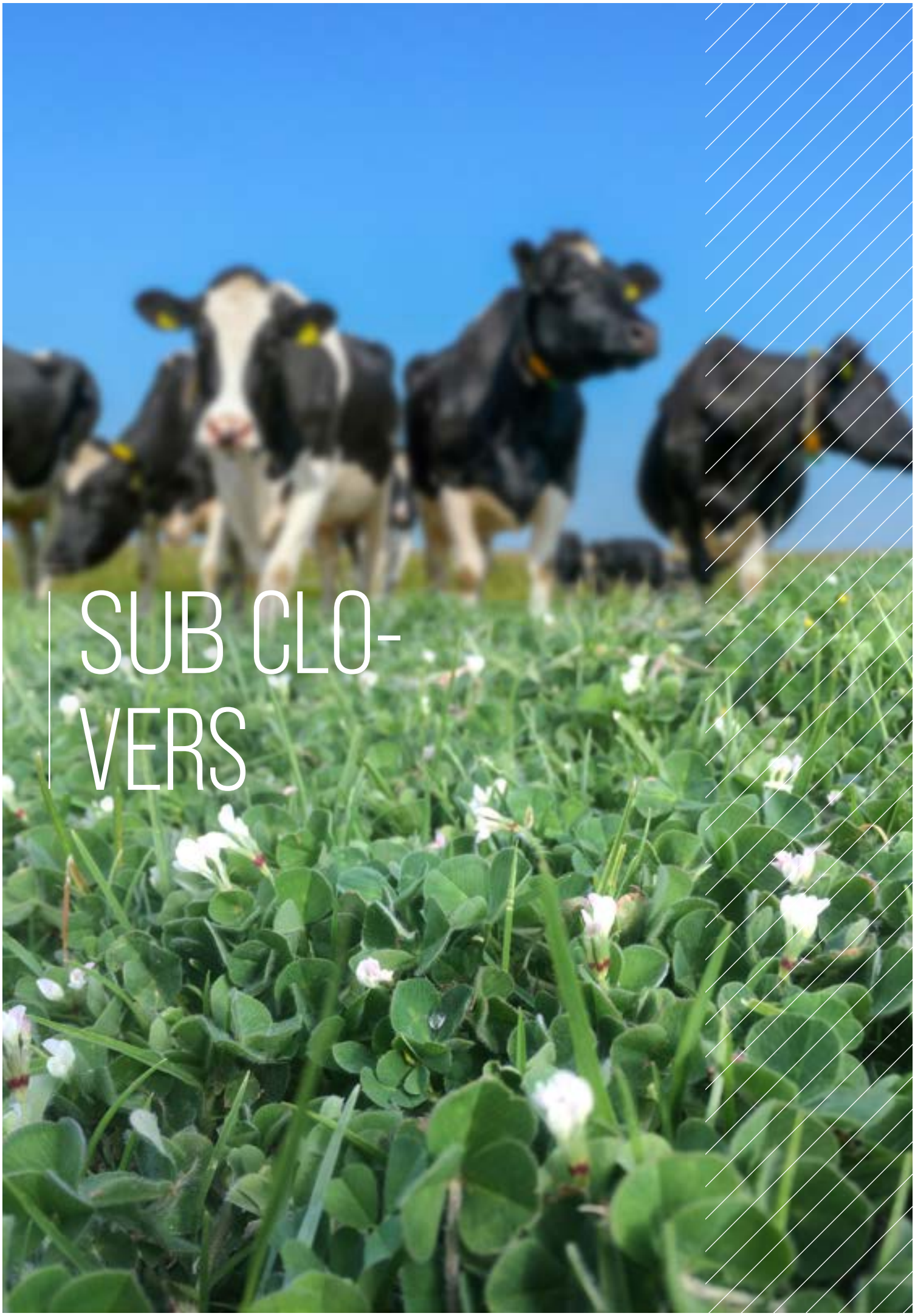
- Forage brassica crops are highly digestible, and don't contain much 'effective fibre', the sort of fibre that makes animals chew.
- Feeding extra effective fibre means more chewing producing saliva which is a rich source of bicarbonate that buffers rumen pH. More effective fibre means less acid in the rumen and fewer digestive upsets.
- Continue feeding out hay, straw or silage even when stock have adjusted to the crop.

4. BREAK FEED (STRIP GRAZE)

- This ensures the high quality leaf is balanced with stalks or bulbs.
- This will provide less wastage through trampling and fouling.
- Forage brassicas can also be grazed in conjunction with summer dry pastures or crop stubbles to balance the diet.

5. ANIMAL HEALTH

- Be aware of potential high nitrate risks under overcast conditions.
- Grazing high quality brassicas can put animals at risk of pulpy kidney. Ensure that all stock are drenched and vaccinated at least seven days before grazing the crop.



SUB CLO-VERS

Subterranean Clover Selection

Subterranean clover (sub clover) is a pasture legume native to the Mediterranean basin, the western Atlantic coast of Europe and west Asia. This makes it well adapted to other areas of the world with similar climates, such as southern Australia, South Africa, Chile, Argentina, New Zealand and USA (California, Oregon and Texas).

PLANT FEATURES

- Annual life cycle: Sub clover is an annual legume, which germinates in autumn and completes seed production in spring/early summer (timing depends on cultivar).
- Natural re-seeding: Sub clover regenerates naturally each year from seed set in previous years, without the need for re-sowing.
- Persistence over seasons: Sub clover is a reliable seed producer. Most seeds germinate in the following autumn, but some seeds remain dormant as 'hard seeds' (the proportion depends on cultivar), which 'soften' over subsequent summers for germination. This results in natural re-seeding even after poor seasons for seed production.
- High feed quality: Green sub clover has similar feed quality characteristics to lucerne and white clover.
- Improved soil fertility: Sub clover fixes nitrogen, with the aid of Rhizobium bacteria, for its own growth and supplies N to other grasses and herbs in the pasture. It also provides N in the soil for crops and other plants in following years.
- Easy-care grazing: Sub clover is very grazing tolerant, due to its prostrate growth habit, flowers close to the ground and burial of its seed-containing burrs.

SUBSPECIES AND SOIL TYPE SUITABILITY

Sub clover consists of three subspecies, adapted to different soils.

- ssp. subterraneum is adapted to well-drained,moderately acid (pH CaCl2 4.5–6.5) soils. Most cultivars belong to this group. This type actively buries it burrs.
- ssp. yanninicum is also suited to moderately acid (pH CaCl2 4.5–6.5) soils, but are well adapted to waterlogged or poorly drained soils and to soils that hold their moisture. They actively bury their burrs.
- ssp. brachycalycinum is best suited to welldrained, neutral-alkaline (pH CaCl 2 6.0–8.0) soils. They have long, thin burr stalks and seek out cracks or stones to develop their burrs, rather than actively burying them.

USE OF SUBTERRANEAN CLOVER IN SOUTHERN AUSTRALIA

- Sub clover is well adapted to the Mediterranean-type climate (mild, wet winters and hot, dry summers) of southern Australia, where it has been sown over an estimated 29 million ha. A range of cultivars, differing in flowering times, enables it to be grown in environments with annual average rainfall ranging from 275 mm to 1,200 mm.
- In high rainfall areas sub clover is generally sown in permanent pastures, often with perennial grasses, while in low and medium rainfall areas it is often grown in rotation with crops. It is grazed by both sheep and cattle. Its prostrate growth habit makes it particularly well suited to prolonged heavy grazing by sheep. Excess pasture in spring is often cut for conserved fodder (hay or silage), although more erect species are better suited to this. Dry pasture residues over summer are grazed.

SELECTING THE BEST SUB CLOVER VARIETY FOR YOUR SITUATION

The RAGT sub clover selection chart (click here or visit ragt.au/subcloverselectionguide) can help you select varieties that have been bred for improvements in yield, pest and disease resistance, hardseededness and seed yield for regeneration.

You should select the correct sub-species (subterranean, yanninicum, brachycalycinum or mix) for different soil types in paddock (based on the information on page 46).

Then select the most appropriate variety for your rainfall It is often advisable to mix 2-3 varieties to cover the fact that seasons and rainfall can vary by year. For example:

- A mix or Narrikup and Rosabrook could be used in 500-900mm rainfall to cover higher or lower rainfall years, or
- A mix of Rouse and Rosabrook could be used where parts of a paddock can become waterlogged in some years but rainfall is reliable.

LOOK FOR THESE LOGOS WHEN CHOOSING YOUR FORAGE LEGUMES

FORCE FIELD

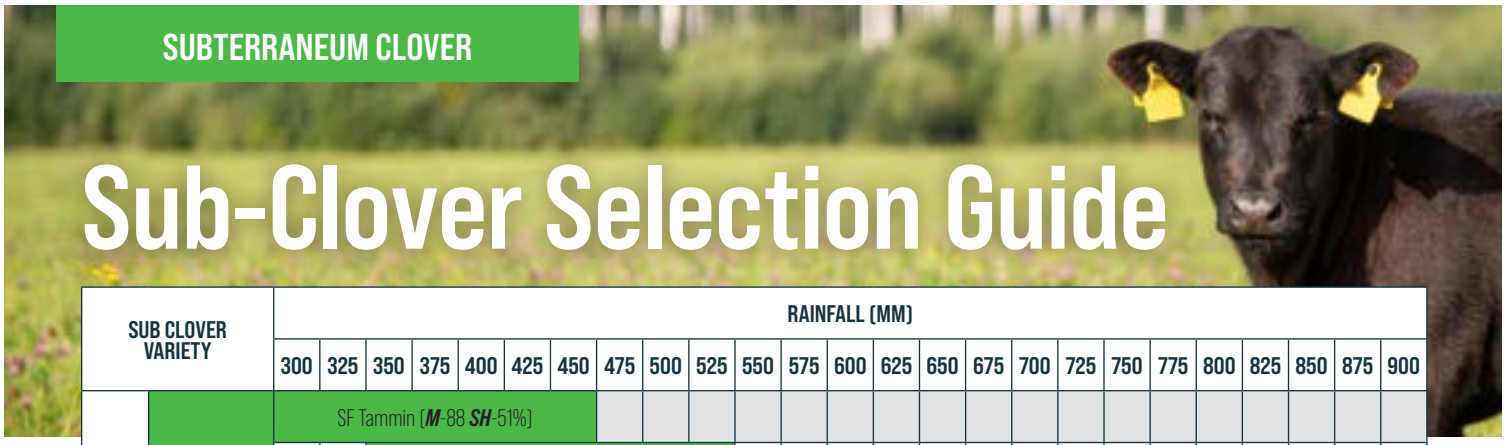
Long life inoculation with lime coating.

FORCE FIELD PLUS

Long life inoculation with lime coating includes systemic fungicide PLUS systemic insecticide.

Force Field Plus seed coating technology used on RAGT proprietary sub clovers delivers a market leading seed coat using the latest scientifically proven insecticidal and fungicidal chemistry available. The Force Field Plus coating process also ensures the sub clover legume seed is inoculated with live rhizobia to enable effective nitrogen fixation. The lime based coat is delivered through a purpose build state of the art seed coating plant using the best available polymer and binders to deliver a durable and light weight lime seed coat.

BENEFITS	CONTAINS
• Improved plant establishment via • Insecticidal protection from biting and sucking insects • Fungicidal protection from damping off diseases • Encapsulated Rhizobia • Not harmful to beneficial insects • Reduces the likelihood of a requirement for in crop insecticide or fungicide applications	• Poncho Plus, a systemic insecticide for protection against Red Legged Earth Mite, Blue Oat Mite, Cutworm and Lucerne Flea (suppression only) • Apron XLfungicide effective against the 'damping off' diseases Pythium and Fusarium • Group C rhizobia, nitrogen fixing bacteria • Lightweight lime based coat, which is industry leading for seeds/kg



Sub-Clover Selection Guide

SUB CLOVER VARIETY		RAINFALL (MM)																									
		300	325	350	375	400	425	450	475	500	525	550	575	600	625	650	675	700	725	750	775	800	825	850	875	900
SUBTERRANEAN (SUITED TO BETTER DRAINED ACID SOILS)	NEW/ CURRENT	SF Tammin (*M*-88 *SH*-51%)																								
				SF Forbes (*M*-101 *SH*-33%)																							
							Bindoon																			
										SF Narrikup (*M*-126 *SH*-22%)																
														SF Rosabrook (*M*-143 *SH*-29%)												
	SUPERSEDED		Dalkeith																							
				Losa																						
					Seaton Park																					
										Campeda																
												Mt Barker														
													Denmark/Goulburn													
																			Leura							
YANNINICUMS (SUITED TO PERIODS OF WATER LOGGING)	NEW/ CURRENT				Monti																					
								SF Yanco (*M*-121 *SH*-45%)																		
												SF Rouse (*M*-131 *SH*-24%)														
	SUPERSEDED					Trikkala/Riverina																				
										Gosse																
															Larissa											
																				Napier						
BRACHYCALYCINUMS (SUITED TO ALKALINE OR CRACKING SOILS)	NEW/ CURRENT			Mawson																						
									SF Tarlee (*M*-130 *SH*-5%)																	
											SF Antillo (*M*-136 *SH*-5%)																
	SUPERSEDED					Mintaro																				
											Clare															
											Antas															

RAGT PRODUCTS | SUPERCEDED PRODUCTS | COMPETITOR PRODUCTS | *M* FLOWERING MATURITY | *SH* SEED HARDINESS

SELECTING THE BEST SUB-CLOVER VARIETY FOR YOUR SITUATION

The chart below can help you select varieties that have been bred for improvements in yield, pest and disease resistance, hardseededness and seed yield for regeneration. You should select the correct sub-species (subterranean, yanninicum, brachycalycinum or mix) for different soil types in paddock, then select the most appropriate variety for your rainfall. It is often advisable to mix 2-3 varieties to cover the fact that seasons and rainfall can vary by year. For example:

A mix of Narrikup and Rosabrook could be used in 600-650 mm rainfall to cover higher or lower rainfall years, or

A mix of Rouse and Rosabrook could be used where parts of a paddock can become waterlogged in some years but rainfall is reliable.

Tammin

Tammin is a more persistent and resilient early flowering subterraneum clover(ssp. subterraneum).

HIGH HARD SEED LEVELS

Tammin was developed for cropping rotations in low-medium rainfall (300-450 mm annual average rainfall) areas with the novel traits of RLEM cotyledon resistance and much higher hardseededness than other cultivars.

Tammin also has a much slower breakdown of hard seed in the autumn making it able to handle false breaks. It will still have 15% hard seed after 3 years, improving its ability to recover in short cropping phase rotations.

FEATURES

Early flowering	High hard seed levels
Delayed hard seed breakdown	Redlegged earthmite resistance

BENEFITS

- High forage yields in lower rainfall environments
- Provides quick feed in autumn and winter
- Will re-seed in early season finishes
- Protects against seedling losses with false breaks
- Will maintain better persistence and yield over time
- Less seed lost due to out of season rainfall
- Some seed will survive after 3 year cropping phase

SOWING RATES

Sole species	5-10kg/ha
Pasture mixes	2-5kg/ha

RAINFALL

300-400

Suited to All Livestock Types, Silage and Hay

Early Maturity

Australian Release >2017

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

VARIETY	AUTUMN YIELD %	WINTER YIELD %	SPRING YIELD %	RLEM DAMAGE# %	SEED YIELD %	HARD SEEDEDNESS %	DAYS TO FLOWERING
							PERTH
Tammin	107	102	117	6	100	51	88
Nungarin	100	85	82	33	110	24	77
Izmir	102	88	96	28	112	24	80
Geraldton	87	72	72	41	86	21	88
Losa	103	80	105	28	93	9	95
Dalkeith	100	100	100	39	100	16	96
Urana	104	78	106	25	89	21	105

*Forage and seed yields are relative to control variety Dalkeith = 100 ^ susceptibility values based on 0 = very resistant, 10 = very susceptible. # impact is % cotyledon damage to germinating plants. All data is based on trials at Cunderdin and Katanning WA and Eurongilly NSW

Forbes

Forbes is an early-mid season sub clover providing a new and improved replacement for Dalkeith, Losa and Urana (ssp. subterraneum).

BETTER SEED REGENERATION AND DISEASE RESISTANCE FOR MORE FEED

Forbes is more hard-seeded than all other cultivars, apart from Tammin giving it improved tolerance to false breaks. It is best suited to areas with approximately 350-525 mm annual average rainfall.

It has been tested in both three-year pasture trials as well as under a one year pasture followed by one year crop, then one year pasture rotation. It shows improved regeneration after cropping compared to other varieties apart from Tammin. Despite this Forbes will produce more feed than all varieties after crop in its recommended rainfall zone.

Forbes is suitable for permanent and semi-permanent pastures. It can be used in cropping rotations, but at least two years of pasture are required between crops. Its upright, vigorous growth makes it suited to hay and silage production, as well as to grazing by cattle or sheep.

PBR

Suited to All Livestock Types, Silage and Hay

FEATURES

Sub species subterraneum (black seeded)	Seedling redlegged earthmite resistance
Early-mid-season flowering	Good hard seed levels

BENEFITS

- Tolerant of water-logging
- Well suited to flood irrigated hay production
- Higher seedling regeneration in years 2 and beyond
- Higher autumn/winter yields from more plants
- Produces more feed in medium-high rainfall zone
- Will re-seed in early season finishes
- Protects against seedling losses with false breaks

SOWING RATES

Sole species	5–10kg/ha
Pasture mixes	2–5kg/ha

RAINFALL

350–525

Early–Mid Maturity

Australian Release >2019

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

VARIETY	WINTER YIELD %	SPRING YIELD %	TOTAL YIELD %	RLEM DAMAGE# %	SEED YIELD %		REGENERATION AFTER CROP %	HARD SEEDEDNESS %	DAYS TO FLOWERING
					YR1 %	YRS 2-3 %			PERTH
Forbes	92	131	112	6	79	104	127	33	101
Dalkeith	100	100	100	39	100	100	100	16	96
Losa	83	106	97	28	84	73	31	9	95
Urana	79	108	91	25	84	58	72	24	105

*Forage and seed yields and regeneration after crop are relative to control variety Dalkeith = 100 ^ data based on 3 years at 3 sites – Cunderdin and Katanning, WA and Eurongilly NSW. # % damage ia % of plants affected.

Narrikup

Narrikup is a very vigorous mid-late season subterraneum clover (ssp. subterraneum).

TOLERANCE TO REDLEGGED EARTH MITE

Narrikup is best suited to well-drained,moderately acid (pH CaCl2 4.5 – 6.5) soils in areas of southern Australia with approximately 500-700 mm mean annual rainfall and where the growing season extends to mid-November.

Emerging seedlings of Narrikup suffer less damage from redlegged earth mite than older subterraneum clovers. Narrikup has high winter production, driven by strong seedling regeneration.

FEATURES

- Increased winter feed
- Improved seedling regeneration
- Seedling redlegged earth mite tolerance
- Mid season flowering
- Increased spring feed

BENEFITS

- Improved establishment. Greater first year yields. Reduced need for insecticide & application costs
- Produces more feed in 500–700mm rainfall zone
- 87% more winter feed to Campeda. 29% more winter feed to June
- 13% more spring feed to Campeda. Similar spring feed to June

SOWING RATES

Sole species	5-10kg/ha
Pasture mixes	2-5kg/ha

RAINFALL

500-700

Suited to All Livestock Types, Silage and Hay

Mid-Late Maturity

Australian Release >2013

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

VARIETY	WINTER YIELD %	SPRING YIELD %	PHYTOPHTHERA IMPACT %		CLOVER SCORCH IMPACT %		RLEM DAMAGE LIGHT %	HARD SEED %	SEEDLING REGEN. %	DAYS TO FLOWERING	
			RACE 177	RACE 173	RACE 1	RACE 2				PERTH	WAGGA
Narrikup	142	135	26	72	30	40	7	22	127	126	136
Campeda	79	119	332	72	60	80	35	-	79	128	130
Junee	110	137	38	26	30	80	53	32	107	127	138
Coolamon	122	143	18	42	0	20	35	30	125	135	138
Seaton Park	125	112	18	44	70	80	38	25	98	108	125
York	100	100	14	86	50	90	36	5	100	110	125

*Forage comparisons developed from data supplied by DAFWA from sites at Esperance, Kojunup and Williams WA, Kybybolite & Turretfield SA, and Harden NSW 2004-2007.
#Impact measures % damage when disease was present.

Rosabrook

Rosabrook was developed by the National Annual Pasture Legume Improvement Program (NAPLIP) as a replacement for cv. Denmark with improved cotyledon tolerance to Redlegged Earth Mite (RLEM).

NEW BREAKTHROUGH REDLEGGED EARTH MITE TOLERANT SUB CLOVER FOR INCREASING PASTURE LEGUME CONTENT

Rosabrook results from a single backcross, with cv. Denmark as the recurrent parent, and has a flowering time of 143 days from an early May sowing in Perth, the same as Denmark.

Rosabrook is suited to well drained, moderately acid (pH CaCl2 4.5–6.5) soils in areas of southern Australia where the growing season extends to mid-late November, corresponding to a minimum annual rainfall of approximately 600 mm.

It is well suited to permanent pasture systems, but should regenerate strongly following occasional years in crop. It is not suited to 1:1 crop/pasture rotations.

FEATURES

High yielding

Late flowering

Cotyledon redlegged earthmite resistance

BENEFITS

- Improved establishment. Greater first year yields.
- Reduced need for insecticide application costs
- Produces more feed in high rainfall zone
- Produces more feed per hectare. Produces lower cost feed

SOWING RATES

Sole species	5–10kg/ha
Pasture mixes	2–5kg/ha

RAINFALL

>600

Suited to All Livestock Types, Silage and Hay

Late Maturity

Australian Release >2011

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

VARIETY	WINTER YIELD %	SPRING YIELD %	PHYTOPHTHERA IMPACT %		CLOVER SCORCH IMPACT# %		RLEM DAMAGE LIGHT %	HARD SEED %	DAYS TO FLOWERING	
			RACE 177	RACE 173	RACE 1	RACE 2			PERTH	WAGGA
Rosabrook	118	105	10	22	20	40	13	29	143	150
Denmark	100	100	16	18	10	30	33	14	143	150
Coolamon	115	91	12	42	0	20	33	30	135	138
Goulburn	101	103	18	60	30	20	29	33	135	145
Leura	106	118	28	52	30	30	38	12	150	156
Karridale	81	94	28	94	40	60	39	18	140	146
Mt Barker	78	102	36	84	70	70	40	4	137	143

*Forage comparisons developed from data supplied by DAFWA based on trials at Casterton and Heywood (Vic), Gerogery and Harden (NSW), Mt Barker (WA) and Narracoorte (SA).
Impact measures % damage when disease was present.

Yanco

Yanco is a mid-season sub clover providing a new and improved replacement for Riverina, Trikkala and Monti (ssp. yanninicum).

BETTER SEED REGENERATION AND DISEASE RESISTANCE FOR MORE FEED

Yanco is well adapted to moderately acidic (pH CaCl2 4.5-6.5) soils prone to waterlogging and to loamy and clay soils with good water retention. It is highly resistant to both Race 1 and 2 of clover scorch (Kabatiella caulivora) and that coupled with its outstanding seeding ability, ensures highest autumn-winter forage yields and high total yields.

It is best suited to areas with approximately 450-700 mm annual average rainfall and where the growing season extends into November.

Yanco is suitable for permanent and semi-permanent pastures.
It can be used in cropping rotations, but at least two years of pasture are required between crops.

PBR

FEATURES

- Mid-season flowering
- High seed yields
- Good hard seed levels
- Strong clover scorch resistance
- Sub species yanninicum (cream seeded)

BENEFITS

- Tolerant of water-logging. Well suited to flood irrigated hay production
- Higher seedling regeneration in years 2 and beyond. Higher autumn/winter yields from more plants
- Produces more feed in medium-high rainfall zone Will re-seed in early season finishes
- Better plant survival and forage yields
- Protects against seedling losses with false breaks

SOWING RATES

Sole species	5-10kg/ha

RAINFALL

450-700

Suited to All Livestock Types, Silage and Hay

Mid Maturity

Australian Release >2018

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

VARIETY	AUT/WINT YIELD %	TOTAL YIELD %	PHYTOPHTHORA DAMAGE*		LEAF RUST %	CLOVER SCORCH IMPACT%	SEED YIELD %	HARD SEED %	DAYS TO FLOWERING
			RACE 1	RACE 2					PERTH
Yanco	165	125	0	1.8	0.5	13	122	45	121
Napier	97	119	0		0.5	40	97	42	140
Gosse	141	137	no data		2.5	12	96	16	128
Riverina	100	143	0	0.3	1.0	35	100	24	122
Trikkala	139	112	0	3.1	2.5	24	98	14	117
Monti	140	100	no data		3.5	no data	106	22	115

*Forage and seed yields are relative to control variety Riverina = 100 ^ susceptibility values based on 0 = very resistant, 10 = very susceptible #impact is % damage to the plants infected Data based on 3 years at 4 sites – Manjimup & Mt Barker, WA and Echuca & Koroit, VIC.

Rouse

Rouse is a midseason to late flowering cultivar. It is a replacement for Gosse and Napier with a flowering time between them but superior field performance (ssp. yanninicum).

IMPROVED FORAGE YIELDS AND REGENERATION

Rouse has higher forage yield, especially in autumn/winter, higher seed yields and higher seedling regeneration densities than Gosse. It also has higher resistance to both Races 1 and 2 of clover scorch disease and to leaf rust than Gosse.

Rouse is well adapted to moderately acidic (pH CaCl2 4.5-6.5) soils prone to waterlogging and 550- 900 mm annual rainfall and where the growing season extends to mid-late November.

PBR

FEATURES

Mid-late flowering	High seed yields
Sub species yanninicum	Moderate hard seed levels

BENEFITS

- Tolerant of water-logging
- Well suited to flood irrigated hay production
- Higher seedling regeneration in years 2 and beyond
- Higher autumn/winter yields from more plants
- Produces more feed in high rainfall zone
- Will re-seed in early season finishes
- Protects against seedling losses with false breaks

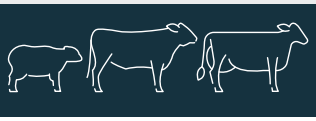
SOWING RATES

Sole species	5-10kg/ha
Pasture mixes	2-5kg/ha

RAINFALL

550-900

Suited to All Livestock Types, Silage and Hay



Mid-Late Maturity

Australian Release >2017

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

VARIETY	AUT/WINT YIELD %	TOTAL YIELD %	PHYTOPHTHORA DAMAGE*		LEAF RUST %	CLOVER SCORCH IMPACT# %	SEED YIELD %	HARD SEED %	DAYS TO FLOWERING
			RACE 1	RACE 2					PERTH
Rouse	128	111	0	1.8	0.5	11	132	24	131
Gosse	100	100	no data		2.5	12	100	16	128
Riverina	72	93	0	0.3	1.0	35	106	24	122
Trikkala	97	98	0	3.1	2.5	24	103	14	117
Monti	100	93	no data		3.5	no data	112	22	115
Napier	68	118	0	1.4	0.5	40	132	42	140

*Forage and seed yields are relative to control variety Gosse = 100 ˆ susceptibility values based on 0 = very resistant, 10 = very susceptible # impact is % cotyledon damage to germinating plants
Yield and seed yield data from trials at Mt Barker and Manjimup, WA and Echuca and Koroit VIC.

Tarlee

Tarlee is a mid-late season sub clover providing a new and improved replacement for Clare and Antas (ssp. brachycalycinum).

BETTER SEED REGENERATION AND DISEASE RESISTANCE FOR MORE FEED

Tarlee is well adapted to neutral to alkaline soils but will perform well in moderately acidic soils (pH CaCl2 6.5-8.5). It has improved seed yield and has shown superior performance over those older varieties after the establishment year. This is due to its improved seed yield and disease resistance resulting in higher regeneration levels over other brachycalycinum varieties. It is best suited to areas with approximately 500-775 mm annual average rainfall.

Tarlee establishes rapidly like other brachycalycinums. It can be used as for permanent and semi-permanent pastures in neutral to alkaline soils and where soil-cracking is likely over summer. It can be used in cropping rotations or for specialist hay and silage production due to its outstanding first year production.

PBR

FEATURES

Sub species brachycalycinum (black seeded)	High seed yields
Mid-late season flowering	Good disease tolerance

BENEFITS

- Suited to moderately acid-alkaline soils
- Well suited to flood irrigated hay production
- Higher seedling regeneration in years 2 and beyond
- Higher autumn/winter yields from more plants
- High spring and total forage yields
- Well suited to hay production
- Greater yield and seed set

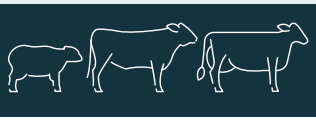
SOWING RATES

Sole species	5-10kg/ha
Pasture mixes	2-5kg/ha

RAINFALL

500-775

Suited to All Livestock Types, Silage and Hay



Mid-Late Maturity

Australian Release >2019

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

VARIETY	AUTUMN YIELD %	WINTER YIELD %	SPRING YIELD %	TOTAL YIELD %	REGEN BY MID-JUNE G.CLOVER %	CLOVER SCORCH SUSPECT. 0-10, 0=BEST	SEED YIELD %	HARD SEED %	DAYS TO FLOWERING PERTH
Tarlee	106	104	128	127	52	5	143	5	130
Clare	100	100	100	100	43	7	100	5	130
Antas	97	103	119	103	21	8	90	6	138
Mintaro	108	111	105	109	52	6	109	14	115

*Forage and seed yields are relative to control variety Clare = 100 ^susceptibility values based on 0 = very resistant, 10 = very susceptible Forage yield data based on 3 years at 4 sites – Tarlee, SA and Dungowan & Eurongilly, NSW. Seed yield data based on mean of first year harvest at Shenton Park & Eurongilly.

Antillo

Antillo is a late season sub clover providing a new and improved replacement for Antas (ssp. brachycalycinum).

BETTER SEED REGENERATION AND DISEASE RESISTANCE FOR MORE FEED

Antillo is well adapted to neutral to alkaline soils but will perform well in moderately acidic soils (pH CaCl2 6.5-8.5). It has improved seed yield and has shown superior performance over those older varieties after the establishment year. This is due to its improved seed yield and disease resistance resulting in higher regeneration levels over other brachycalycinum varieties.

It is best suited to areas with approximately 700-900 mm annual average rainfall.

Antillo establishes rapidly like other brachycalycinums. It can be used as for permanent and semi-permanent pastures in neutral to alkaline soils and where soil-cracking is likely over summer. It can be used in cropping rotations or for specialist hay and silage production due to its outstanding first year production.

PBR

FEATURES

Sub species brachycalycinum (black seeded)	Higher seed yields
Late season flowering	Good disease tolerance

BENEFITS

- Suited to moderately acid-alkaline soils
- Well suited to flood irrigated hay production
- Higher seedling regeneration in years 2 and beyond
- Higher autumn/winter yields from more plants
- High spring and total forage yields
- Well suited to silage and hay production
- Improved resistance to clover scorch
- Greater yield and seed set

SOWING RATES

Sole species	5-10kg/ha
Pasture mixes	2-5kg/ha

RAINFALL

550-900

Suited to All Livestock Types, Silage and Hay

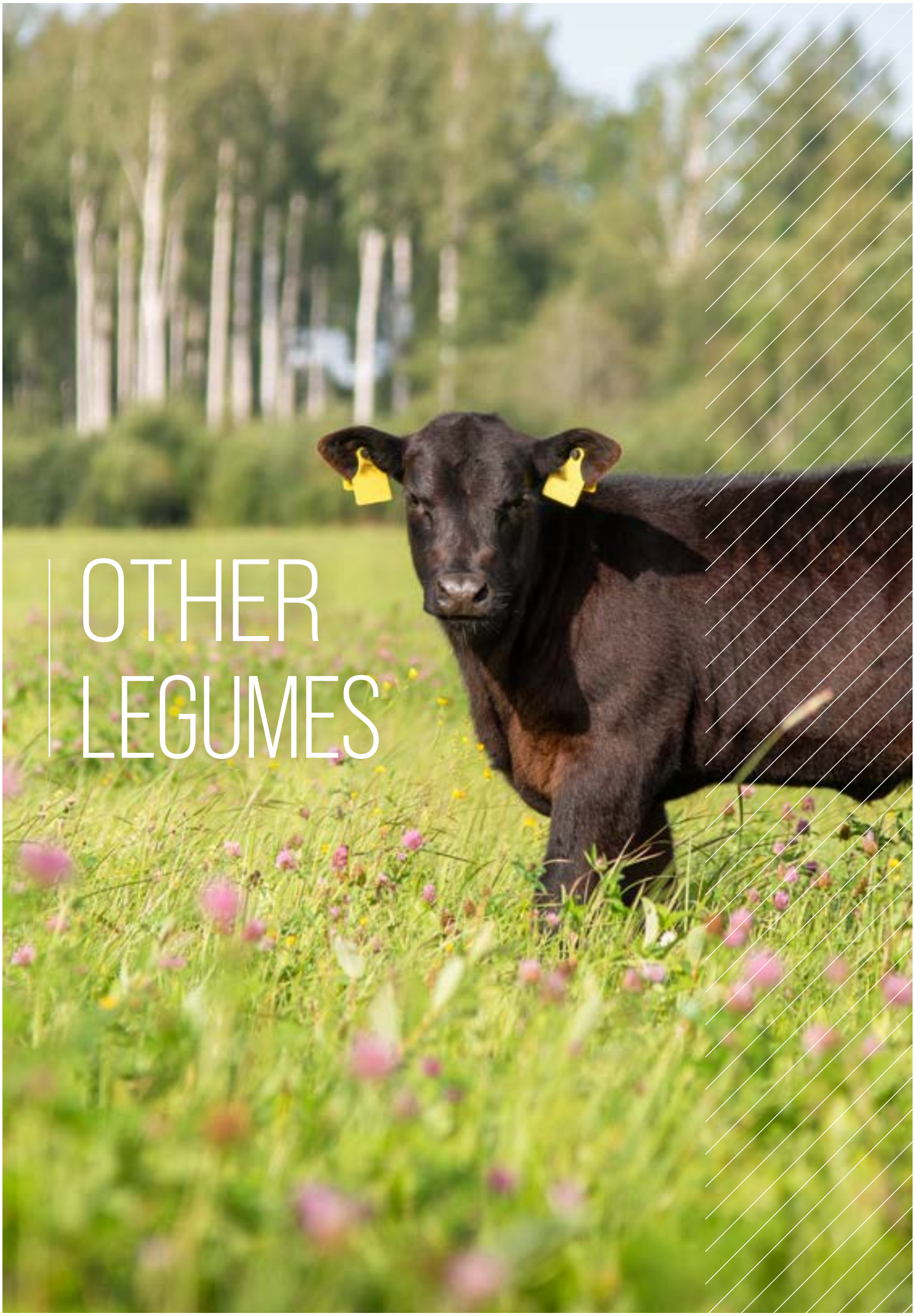
Mid-Late Maturity

Australian Release >2017

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

VARIETY	AUTUMN YIELD %	WINTER YIELD %	SPRING YIELD %	TOTAL YIELD %	REGEN BY MID-JUNE G.CLOVER %	CLOVER SCORCH SUSPECT. 0-10, 0=BEST	SEED YIELD %	HARD SEED %	DAYS TO FLOWERING PERTH
Antillo	121	124	132	125	58	5	130	5	136
Clare	100	100	100	100	43	7	100	5	130
Antas	97	103	119	103	21	8	90	6	138
Mintaro	108	111	105	109	52	6	109	14	115

*Forage and seed yields are relative to control variety Clare = 100 Forage yield data based on 3 years at 3 sites – Tarlee, SA and Dungowan & Eurongilly, NSW.Seed yield data based on mean of first year harvest at Shenton Park & Eurongilly. ˆ susceptibility values based on 0 = very resistant, 10 = very susceptible.



OTHER LEGUMES

Moa

Moa is a late flowering soft seeded persian clover.

GENERAL FIT

Moa is a soft seeded, late-flowering persian clover which produces higher quality vegetative feed longer into the growing season .It is a tall-erect, aerial seeding, annual type with thick, long and soft stems.

It is adapted to a wide range of soil types and has good waterlogging tolerance making it ideal to plant with tetraploid annual ryegrass for winter grazing and spring lock-up for high quality silage or hay.

Moa is very palatable and highly digestible feed (20-23% crude protein), It is well suited to hay, grazing or silage production, and is especially successful in pasture mixes with oats targeted at increasing dry matter production.

Its upright growth habit makes it more suited to planting as a companion legume with annual ryegrass and forage cereals. And being late-flowering it retains quality later into the season than other persian clover varieties. It should be sown in early autumn for best results.

Moa Persian clover has excellent post grazing/silage cut recovery.

FEATURES

Late flowering	Upright growth habit
Tolerates waterlogging	Free of oestrogen

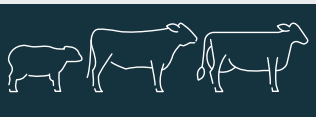
BENEFITS

- Produces higher yields in long growing season or irrigated areas
- Produces as a companion legume when sown with grassses or cereals
- Ideal companion for sowing with tetraploid annual ryegrass
- Safe for grazing by or feeding to pregnant stock

SOWING RATES

Sole species	8-10kg/ha
In high rainfall or irrigated mixes	5-8kg/ha
Medium rainfall dryland mixes	3-5kg/ha

Suited to All Livestock Types, Silage and Hay



Late Maturity

Australian Release >2021

PERFORMANCE DATA AND NUTRITIVE VALUE

VARIETY	YIELD (KG/HA)	NDF %	CP %	ME (MJ/KG DM)	STARCH %
Moa	5,013	23.6	22.5	12.6	3.7
Lightning	3,922	25.2	21.2	11.7	0.5

*Data based on trial undertaken in Canterbury NZ.

DIPLOID RED CLOVER

Rossi

Rossi is a diploid red clover bred by RAGT in Europe.

REV UP YOUR PASTURE LEGUME CONTENT

Rossi has good first year production and improved pest and disease resistance to ensure improved second year yield.

It is considerable more persistent than most red clover varieties and as such lends itself to inclusion in perennial pasture mixes or as a stand alone grazing and hay option.

FEATURES

Diploid red clover

High first year yield

Excellent pest and disease resistance

BENEFITS

- Lower sowing rate needed per hectare to reduce costs
- Provides yield benefit for areas where red clover may only last one year
- Improved plant density into second year. Provides greater second year yields

SOWING RATES

Sole species	6–10kg/ha
As sole clover with perennial grass	4–6kg/ha
With perennial grass and other clovers	2–3kg/ha

Suited to All Livestock Types, Silage and Hay

Early Maturity

Australian Release >2009

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

RED CLOVER	AUTUMN / WINTER YIELD %	SPRING / SUMMER YIELD %	TOTAL YIELD %
Rossi	114	112	113
NZ Red	100	100	100

*Source: red clover trial Gundagai 2008.

Quest

Quest is a high yielding large leaf and highly stoloniferous white clover with good persistence under grazing.

LARGE LEAF

Quest is well suited to sowing in pasture mixes for beef and dairy grazing where white clover will persist.

It is highly winter active and can also set seed in most pasture swards. As such it has the ability to persist from its root system in favourable seasons, but also regenerate from seed during tough dry summers.

FEATURES

Good seedling vigour

Early flowering

Highly autumn/winter active

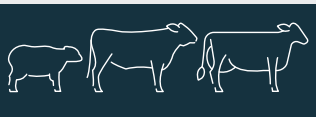
BENEFITS

- Establishes well in mixed swards
- Provides ease of grazing to all livestock
- Provides improved recovery after grazing and persistence
- Suited to inclusion in mixes in both winter and summer dominant rainfall regions and under irrigation

SOWING RATES

Sole species	6–10kg/ha
As sole clover with perennial grass	2-3kg/ha
With perennial grass and other clovers	1-2kg/ha

Suited to All Livestock Types, Silage and Hay



Early Maturity

Australian Release >2009

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

WHITE CLOVER	AUTUMN / WINTER YIELD %	SPRING / SUMMER YIELD %	TOTAL YIELD %
Quest	99	96	99
Haifa	100	100	100

*Source: white clover trial Gundagai 2007–08.

LUCERNE

Lucerne Selection

The seasonal production of different winter activity lucernes will determine the number of cuts or grazings. High winter activity lucernes can be cut more often than more dormant types due to their more erect habit, faster regrowth and longer growing season. Whilst they will produce more over the cool seasons they may not necessarily produce more than less winter active types over a full 12 month period. Selection should also ensure good resistance to the major pests and diseases that may be a problem in your growing region.

Question	Enterprise	Persistence	Situation	Production	Reccs.
Which Lucerne?	Intensive Live-stock Grazing OR Intensive Hay Cutting	Long Stand Life 8+ years	Cool Climate Areas	4-5 Grazings/ Cuts Per Year	614QL
		Medium Stand Life 5-8 Years	Warm Climate Areas	6-7 Grazings/ Cuts Per Year	714QL
		Medium Stand Life 3-5 Years	Warm Winters, Wet Summers or Irrigation	8+ Grazings/ Cuts Per Year	914QL
	Extensive Mixed Farming	Long Rotation 7+ Years	More Focus on Grazing Over Warmer Months	Feed Required from Mid-Spring to Autumn	614QL
		Medium Rotation 5-7 Years	Dual Purpose Grazing and Fodder	Feed Required from Early-Spring to Late-Autumn	714QL
		Short Rotation 3-5 Years	More Focused on Cropping and Winter Fat-tening	Maximum Feed Required Over Winter and Spring	914QL

614QL

614QL Lucerne is a versatile and broadly adaptive variety suited to multi-purpose mixed farming systems in semi/non dormant regions.

614QL is versatile and broadly adaptive to multi-purpose mixed farming systems looking for exceptional yield and forage quality with good stand persistence in semi/non dormant regions. 614 QL is an excellent choice for grazing tolerance with good pest and disease resistance and fast recovery after grazing or cutting.

614QL demonstrates a low level of multifoliate leaf expression and has been selected from old forage yield trials for persistence, vigour, and freedom from leaf disease. The germplasm sources used in the development trace to elite USA breeding populations.

FEATURES

High yielding,multi-purpose variety	Multifoliate leaf expression
Strong pest and disease resistance	Good grazing tolerance

BENEFITS

- Excellent persistence
- Versatile and broadly adaptive
- Well suited to mixed farming zones

SOWING RATES

>900mm irrigation	10-20kg/ha
700-850mm rainfall	8-10kg/ha
600-750mm rainfall	6-8kg/ha
450-600mm rainfall	4-6kg/ha
<450mm rainfall	2-4kg/ha

Suitable to Dairy, Sheep, Beef and Hay

Semi-Dormant

Australian Release >2021

SOUTH AMERICAN FORAGE YIELD TRIAL

VARIETY	MARCOS JUAREZ 2016	RAFAELA 2016
614QL	119	124
Pintado	107	106
Victoria	103	116
GSM 681	97	92
WL 611	116	114
ACA 605	93	86

*The table above shows the performance of this variety relative to commercial checks in the first and second production years. ^The figure is the average % of checks over all locations.

DISEASE/ PEST RESISTANCE

DISEASE/ PEST	RESISTANCE
Fusarium Wilt	HR
Anthracnose (Race 1)	HR
Bacterial Wilt	R
Verticillium Wilt	R
Phytophthora Root Rot	R
Stem Nematode	R
Pea Aphid	R
Spotted Alfalfa Aphid	R

#(HR – Highly Resistant & R – Resistant).

DUAL PURPOSE LUCERNE

714QL

714QL is one of Australia's favourite hay lucernes due to its outstanding yield and quality characteristics.

DORMANCY 7 WINTER ACTIVE

714QL was selected from a pool of high yielding tri-foliate breeders' lines showing excellent plant density and high leaf content.

714QL was selected to provide a high yielding and high quality lucerne to satisfy the strict requirements for both premium hay producers and intensive livestock producers.

FEATURES

- High yielding
- Excellent leaf to stem ratio
- High quality specialist hay variety

BENEFITS

- Suits premium hay producers or quality silage
- Improved quality with high leaf content in the bale. Can provide increased hay value
- Provides greater returns per hectare

SOWING RATES

>900mm irrigation	10-20kg/ha
700-850mm rainfall	8-10kg/ha
600-750mm rainfall	6-8kg/ha
450-600mm rainfall	4-6kg/ha
<450mm rainfall	2-4kg/ha

Suitable to Dairy, Sheep, Beef and Hay

Winter Active

Australian Release >2008

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

VARIETY	MEASURED ACTIVITY	RELATIVE YIELD*	APHIDS			LEAF & STEM DISEASES				NEMATODES SN	EXTRA VALUE* $/HA/
			SAA	BGA	PA	PRR	CCR	BW	FW		
Aurora	6	100	HR	HR	-	R	MR	LR	-	R	$0
714QL	7/8	105	HR	HR	HR	HR	MR	R	HR	R	+$1,776
SARDI 7-2	7	99	HR	HR	HR	HR	HR	-	-	R	-$37
Titan 7	7	97	HR	R	-	R	HR	-	-	-	+$316
Q75	7	102	HR	R	-	HR	HR	MR	-	R	+$244
L71	7	98	MR	MR	-	R	R	R	-	R	-$254
Trifecta	7	102	R	HR	-	MR	R	R	LR	LR	+$346

Based on up to 14 completed dryland and irrigated trials sown 2007-2017,, compared to Aurora = 35.02t/ha over 3 years. extra value is based on extra value $/ha over the 3 years of trials at $400/t.

HIGHLY WINTER ACTIVE LUCERNE

914QL

914QL is a new highly winter active lucerne. It comes from the same breeder as 714QL, but was selected for increased winter activity.

THE NEW 9 FOR YOUR BLOCK

914QL was selected for increased winter activity with similar high leaf to stem ratio and improved persistence over many older activity 9 and 10 varieties.

It is well suited to both hay producers looking for an extra one or two cuts per year, or for livestock producers wanting more winter production in a highly winter active lucerne with improved persistence.

914QL is an ideal replacement for 10 and other activity 9 or 10 lucerne varieties.

FEATURES

- Very high yielding
- Increased winter activity
- Improved persistence

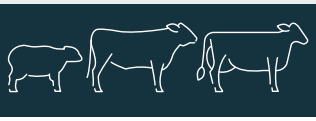
BENEFITS

- Suited to in situ grazing
- More cuts or grazing per year
- Longer stand life for a highly winter active variety

SOWING RATES

>900mm irrigation	15-25kg/ha
700-850mm rainfall	8-15kg/ha
600-750mm rainfall	6-8kg/ha
450-600mm rainfall	4-6kg/ha
<450mm rainfall	2-4kg/ha

Suitable to Dairy, Hay and rotationally grazed Beef & Sheep



Highly Winter Active

Australian Release >2016

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

VARIETY	WINTER ACTIVITY	RELATIVE YIELD*	APHIDS			LEAF & STEM DISEASES				NEMATODES SN	EXTRA VALUE* $/HA/
			SAA	BGA	PA	PRR	CCR	BW	FW		
Aurora	6	100	HR	HR	-	R	MR	LR	-	R	$0
Sequel	9	100	R	R	-	MR	R	S	S	SN	-$144
914QL	9	107	HR	-	R	R	MR	LR	R	R	+$995
Titan 9	9	103	HR	R	-	HR	R-HR	-	-	-	+$406
SARDI 10-2	10	107	HR	HR	-	R	R	-	-	R	+$959

Based on up to 14 completed dryland and irrigated trials sown 2007-2017, compared to Aurora = 35.02t/ha over 3 years. extra value is based on extra value $/ha over the 3 years of trials at $400/t.

Lucerne Management

PREPARATION

- Ensure paddock is suitable to sow lucerne.
- Take a soil test well in advance to check for appropriate nutrient status, and address any deficiencies before sowing.
  - pH (CaC_{l2}) 5.0–8.0
  - Ca:Mg > 2:1
  - Aluminium <15mg/kg
  - Water salinity < 2.4dS/m
  - Sodium <6%
  - Soil salinity < 2.0dS/m
- Apply lime to increase soil pH
- Apply gypsum to improve soil structure and/ or supply sulphur.
- Create a fine, firm seedbed, free of clods.
- Control all existing weeds prior to or during seedbed preparation.
- Apply pre-emergent herbicide to prevent germinations of wireweed or annual ryegrass.

SOWING

- Lucerne is ideally sown from late April through to late August, but can be sown later in high rainfall or irrigated regions.
- It is suited to undersowing cereal or pulse crops in broadacre regions.
- Ensure seed is inoculated with Group AL inoculant, and use fungicide to control Pythium, Rhizoctonia, Phytophthera and Fusarium. We recommend the use of a fungicide or Force Field PLUS treated seed.
- Lucerne seed should be shallow sown either drilled close to the surface or dropped onto the soil.
- It should be covered with a roller or a very light covering chain or mesh.
- For best results consider cross sowing at half rates each way with a band seeder.

MANAGEMENT POST SOWING

- Either apply a residual insecticide immediately post sowing, or monitor closely at emergence for lucerne flea or Redlegged Earth Mite and control promptly.
- Check stand for weeds and select the appropriate herbicide for earliest possible weed control.

CUTTING OR GRAZING

- Lucerne stands should be allowed to commence flowering before first cutting or grazing.
- After the initial cut, stands should be grazed just prior to flowering, when new shoots at the base of the plant reach about 20–50mm in length. This should be about every 21–28 days for highly winter active lucernes, 35–42 days for more dormant types, but will depend on moisture and temperature.
- Cutting or grazing at that time will provide the best compromise between yield and quality.
- When cutting, set cutter bar about 5cm above crown of plant to minimise crown damage.
- Dry lucerne down to 17–18% dry matter as quickly as possible to reduce quality losses.
- Avoid physical machinery damage under dry conditions to reduce quality leaf losses.
- Cattle do not graze lucerne as closely as sheep and do not require as strict rotational grazing.
- Avoid set stocking for long periods, and allow lucerne to flower when the opportunity arises to replenish root reserves. Spell paddocks when lucerne is under stress.
- Bloat risks in cattle can be managed. The high risk period is when lucerne is fresh and lush or when stand is immature (has not flowered). Risks can be managed by using sheep in high risk periods, using bloat capsules, antibloating agents, or sowing grass with lucerne for grazing.

MAJOR LUCERNE PESTS AND DISEASES

SAA	Spotted Alfalfa Aphid
BGA	Blue Green Aphid
PA	Pea Aphid
PRR	Phytophora Root Rot
CCR	Colitotrichum Crown Rot
BW	Bacterial Wilt
FW	Fusarium Wilt
SN	Stem Nematode

LUCERNE RESISTANCE RATINGS

LR	Low Resistance	6–14%
MR	Moderate Resistance	15–30%
R	Resistance	31–50%
HR	High Resistance	>50%

SPECIALTY FORAGES

Punter

Punter is a deep rooted perennial chicory providing outstanding summer productivity and feed quality.

DON'T TAKE A PUNT ON ANY OLD CHICORY

Punter has high mineral uptake and is extremely persistent. It provides a high energy forage with proven animal health benefits and increased animal production at a time of year when pasture quality is low.

Being more winter active than some varieties, Punter can be sown at any time when there is adequate moisture for good germination and establishment.

Punter can be sown in autumn with ryegrass due to its establishment vigour and competitiveness in a sward. It can also be spring sown with other forages such as Pacer leafy turnip.

FEATURES

- Excellent quality feed
- Persistent medium-term option
- Low dense crown high tillering variety

BENEFITS

- Suited to mixes for 3-5 years. Can regenerate from seed to thicken up in sward
- Better establishment and year round feed. Ideal companion species to pastures mixes

SOWING RATES

Sole species	4-5kg/ha
Pasture mixes	1-2kg/ha

Suitable to All Livestock Types

Highly Winter Active

Australian Release >2006

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

CULTIVAR	AUTUMN	WINTER	SPRING	SUMMER	TOTAL
Punter	118	164	123	100	122
Puna	100	100	100	100	100

*Data based on mean of yields from Gundagai 2007-2009 and Tenterfield trial 2011-2013.

Endurance

Endurance is a new forage plantain with improved feed production across all seasons.

FEED FOR ALL SEASONS

Plantain is a drought hardy deep rooted perennial herb well adapted to low fertility soils. Existing varieties have either been winter active and early flowering or summer active and late flowering.

Endurance provides similar winter feed to Tonic, but with improved warm season production. It is ideal for pasture mixes where producers are looking for a contribution from plantain across all seasons.

Being around 4 weeks later flowering than Tonic, it will not lose quality so early in the growing season.

FEATURES

Mid season maturity	All season growth
Frost tolerant	

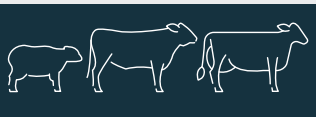
BENEFITS

- Suited to a broader range of environments
- Fills more than one feed gap
- Will still grow feed in extreme winter cold

SOWING RATES

Sole species	8–10kg/ha
Pasture mixes	3–5kg/ha

Suitable to All Livestock Types



Mid–Late Maturity

Australian Release >2011

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

PLANTAIN	AUTUMN	WINTER	SPRING	SUMMER	TOTAL
Endurance	97	93	93	107	100
Tonic	100	100	100	100	100
Boston	82	71	86	108	93

*Data based on yields from Tenterfield trial 2011-2013.

Brigadier

Brigadier is a traditional polyploid, mangel type fodder beet with orange bulbs that sit high up out of the soil.

HIGH YIELDS WERE NEVER THIS SWEET

Brigadier is ideal for grazing in-situ by all livestock classes, and its high sugar level makes it very palatable. Fodder beet is a well known crop, but with new genetics and better management practices it is gaining rapid interest for its ability to produce very high yields of high quality forage. It is typically sown in spring using specialist seeders and has a 4–6 month growing period.

Brigadier offers new genetic potential and is capable of producing 20–40t DM/ha for late autumn and winter grazing. It is not a brassica but a member of the beet family and offers the opportunity to break the traditional weed and pest cycle of brassicas, particularly for Diamondback moth. You should seek specialist advice from RAGT if considering growing this exciting crop.

FEATURES

High sugar feed option	Very high potential yields
Good weed & pest rotational crop	75% in the ground

BENEFITS

- Very good palatability for all livestock classes
- Can yield up to 20–40t DM/ha. Profitable crop option
- Sound option to avoid Diamondback moth problems

SOWING RATES

Sole species	80–100,000 seeds/ha

Suitable to All Livestock Types

16–26 Weeks After Sowing

Australian Release >2008

FORAGE EBV'S COMPARED TO INDUSTRY STANDARDS*

MANGEL FODDAR BEET	SOWING RATES ALONE	MATURITY	GRAZINGS	ME MJ/KG DM	CRUDE PROTEIN	YIELD
Brigadier	80–100,000	16–26 weeks	Single	12.5–13.5	6–8%	Up to 40t

1505Bv

1505Bv is a hybrid type fodder beet offering high yield potential.

1505Bv is a newly released genetic monogerm hybrid type fodder beet boasts a high yield potential. It will work for grazing both in-situ or self-harvesting. It is suitable for a range of grazing systems.

FEATURES

High leaf:bulb ratio	Medium – high DM%
Genetic monogerm hybrid variety	

BENEFITS

- Uniform tubular bulbs
- Versatile variety suited to grazing or harvesting
- High potential yields

SOWING RATES

Grazing	80–100,000 seeds/ha
Harvesting	100–120,000 seeds/ha

Suitable to All Livestock Types

16–26 Weeks After Sowing

Australian Release >2019

Pasture Blends

RAGT now has a range of ready-to sow pasture blends ideally suited to maximise your livestock performance.

PERENNIAL PASTURE BLENDS

Dairy ryegrass blend *Sowing rate 25kg/ha*

This blend contains diploid and tetraploid mid-late flowering perennial ryegrass varieties and white clover which can ensure good N fixation for grass production, and can improve nutritional balance.

Sheep/beef dryland ryegrass blend *Sowing rate 25kg/ha*

This blend contains the new generation perennial ryegrass Hustle, soft-leaf cocksfoot and highly winter-active Jeromimo prairie grass, plus new redlegged earth-mite tolerant sub clovers to enable long term regeneration of the legume base in this mix.

Tall fescue blend *Sowing rate 25kg/ha*

This blend contains 2 outstanding tall fescue varieties blended with Punter chicory plus white and red clover to improve nutritional balance.

Soft-leaf cocksfoot blend *Sowing rate 25kg/ha*

This blend combines the highly palatable Lazuly soft-leaf cocksfoot and highly winter-active Jeromimo prairie grass, with new legumes to maintain a good Nitrogen base in this mix.

Hardy phalaris blend *Sowing rate 12.5kg/ha*

This blend contains the top performing Maté phalaris with two new redlegged earth-mite tolerant sub clovers plus a waterlogging tolerant sub clover with varying maturities to ensure long term regeneration of the legume base in this mix.

SHORT TERM BLENDS

Tri-oomph – 3-way blend *Sowing rate 50kg/ha*

This popular blend of rust resistant oats and ryegrass plus leafy turnip can deliver highest winter feed, nutritional balance and spring feed for either grazing or conserving as fodder.

Graze "N" Bale EARLY *Sowing rate 25kg/ha*

This blend of annual ryegrass, shaftal & balansa clover has been popular in areas looking for quick winter feed and a cut of silage of hay with a balance of grass and clover.

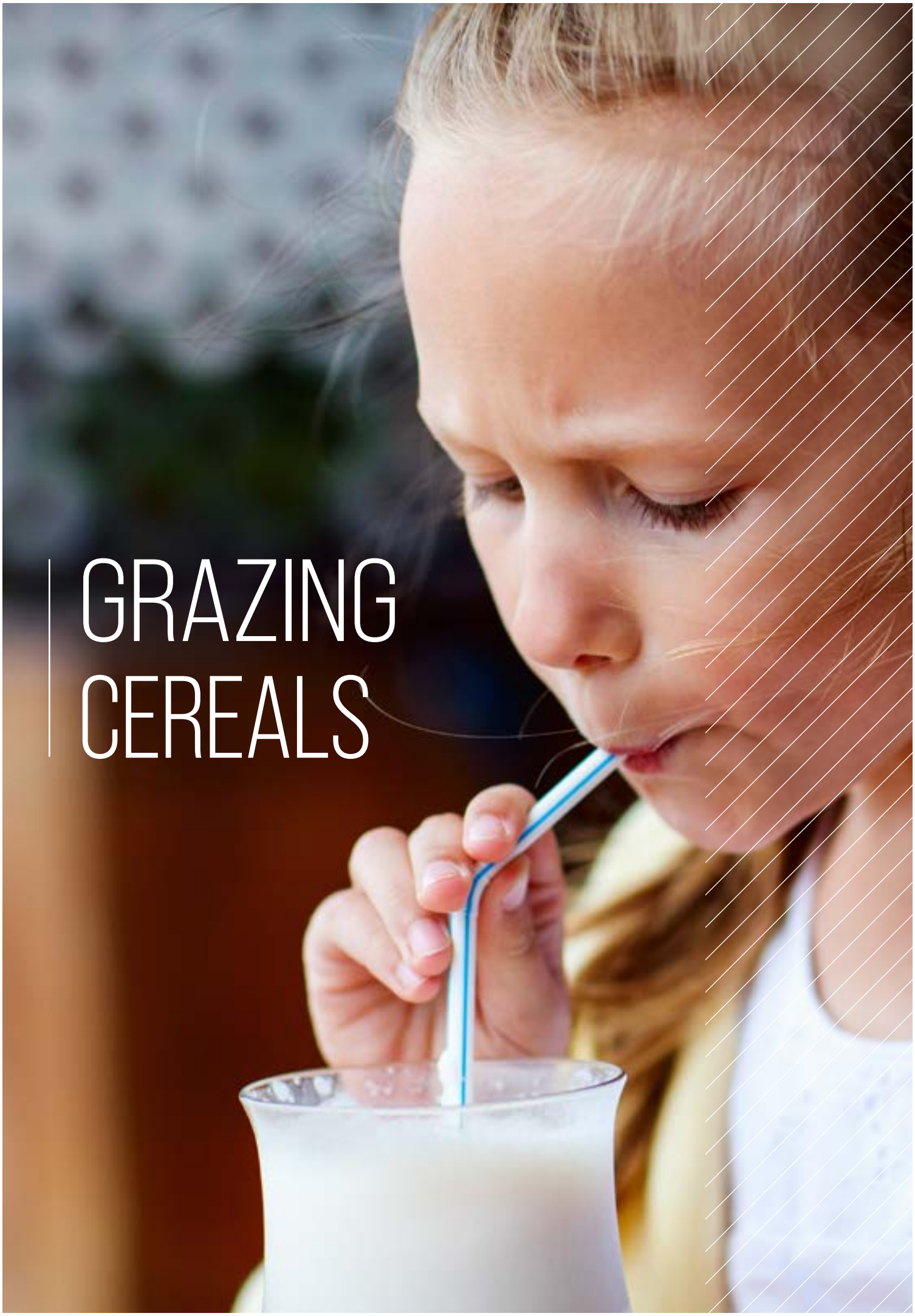
Graze "N" Bale LATE *Sowing rate 25kg/ha*

This blend of late flowering ryegrasses and shaftal clover has been popular in areas looking for quick winter feed and and two cuts of silage/hay with a balance of grass and clover.

Graze "N" Bale Italian *Sowing rate 25kg/ha*

This blend of late flowering diploid and tetraploid Italian ryegrasses with persian clover, is a highly recommended options where multiple forage cuts and late season feed is required

For further information about these mixes, visit ragt.au or request a copy of the Pasture blends brochure.


GRAZING
CEREALS

Tucana

Tucana is a mid-late flowering forage oat suitable for multiple grazings and lock up for high yields of high quality hay.

LEAFY OAT FOR GRAZING, HAY AND SILAGE

The Tucana is about 7 days later flowering than Colossus and better suited to mixing with forage legumes such as clovers or vetch to increase hay quality.

FEATURES

Multi-grazing variety

High yielding

Late flowering

Large broad leaf

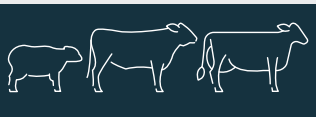
BENEFITS

- Can provide increased grazing returns
- For either increased grazing or hay production
- Suitable for producing high quality
- Improves quality and overall yield

SOWING RATES

80–100 kg/ha

Suitable to All Livestock Types



Mid–Late Maturity

Australian Release >2014

FORAGE EBV'S COMPARED TO INDUSTRY DATA

VARIETY	GLOUCESTER 2015		SHEPPARTON 2018		SHEPPARTON 2019	
	TOTAL	% MEAN	TOTAL	% MEAN	TOTAL	% MEAN
Tucana	9,845	117	6,201	104	10,360	99
Taipan	8,602	102				
Graza 53					10,744	102
Warlock					10,599	101
Aladdin	8,328	99				
Wizard					9,951	95
Outback	7,288	86			10,203	97
Eurabbie	5,723	68	5,797	97		
Site mean	8,446		5,958		10,495	

Regency

AVAILABLE FROM HART BROS SEEDS & NARACOORTE SEEDS

Regency is a unique new forage oat with prostrate growth habit and prolific tillering ability.

GENERAL FIT

The Regency's early growth to first grazing is around 30-40% lower than traditional oats which is a real benefit when using oats as cover for newly sown pastures especially clovers.

But after grazing its mid-season growth is 2-3 times that of all other forage oat varieties, giving higher overall total yield. As such it is recommended that it be grazed when it and any undersown species will withstand pulling.

It has significantly more fine tillers than other oat varieties and narrow width leaves. Whilst Regency is a mid-season maturity variety it produces leafy tillers after it goes to head. It has shown good rust resistance in trials over 2017-2019

Regency has good warm start tolerance for northern sowings, but this can also enable it to be planted early with warm soil temperatures in southern zones to get it to first grazing faster – then watch its outstanding recovery.

PBR

FEATURES

Good warm start option

High total yields

Prolific tillering after first grazing

High leaf production even when reproductive

BENEFITS

- Can be sown early into warm soil conditions <27°C
- Great as a companion oat to enable undersown pasture species the ability to establish outstanding recovery and higher mid-season production than other varieties
- Similar or better than other later maturity varieties
- More quality leaf for late silage or hay cuts. Ideal for cutting at milky dough stage with high leaf content

SOWING RATES

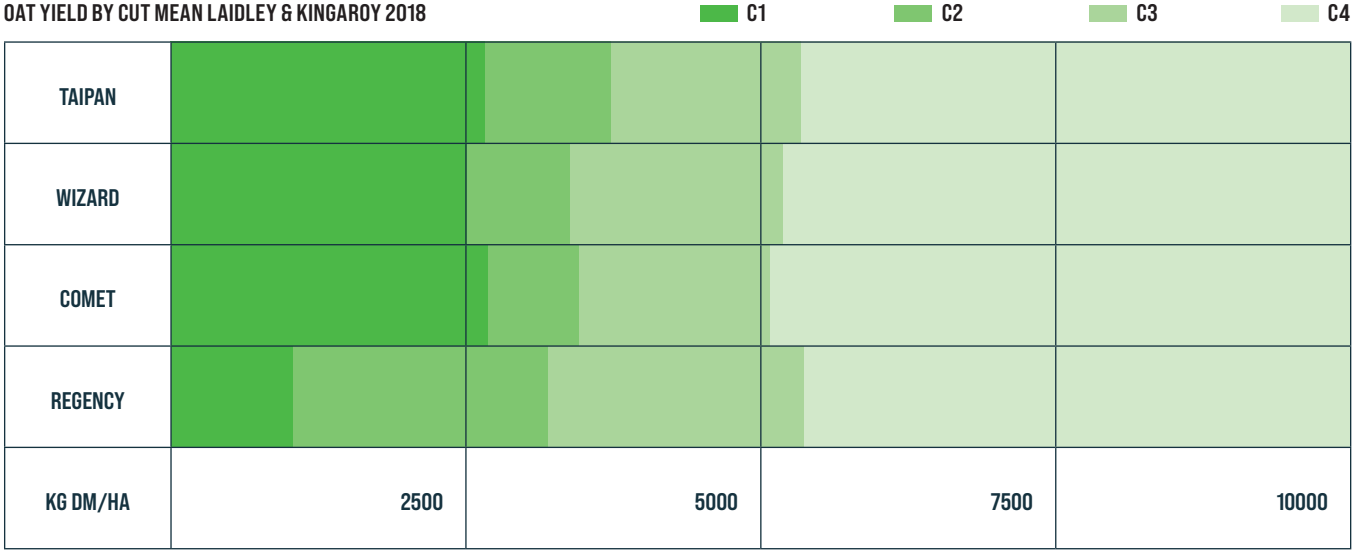
Alone for winter grazing and fodder conservation	50–80kg/ha
Sown with other species	25–40kg/ha

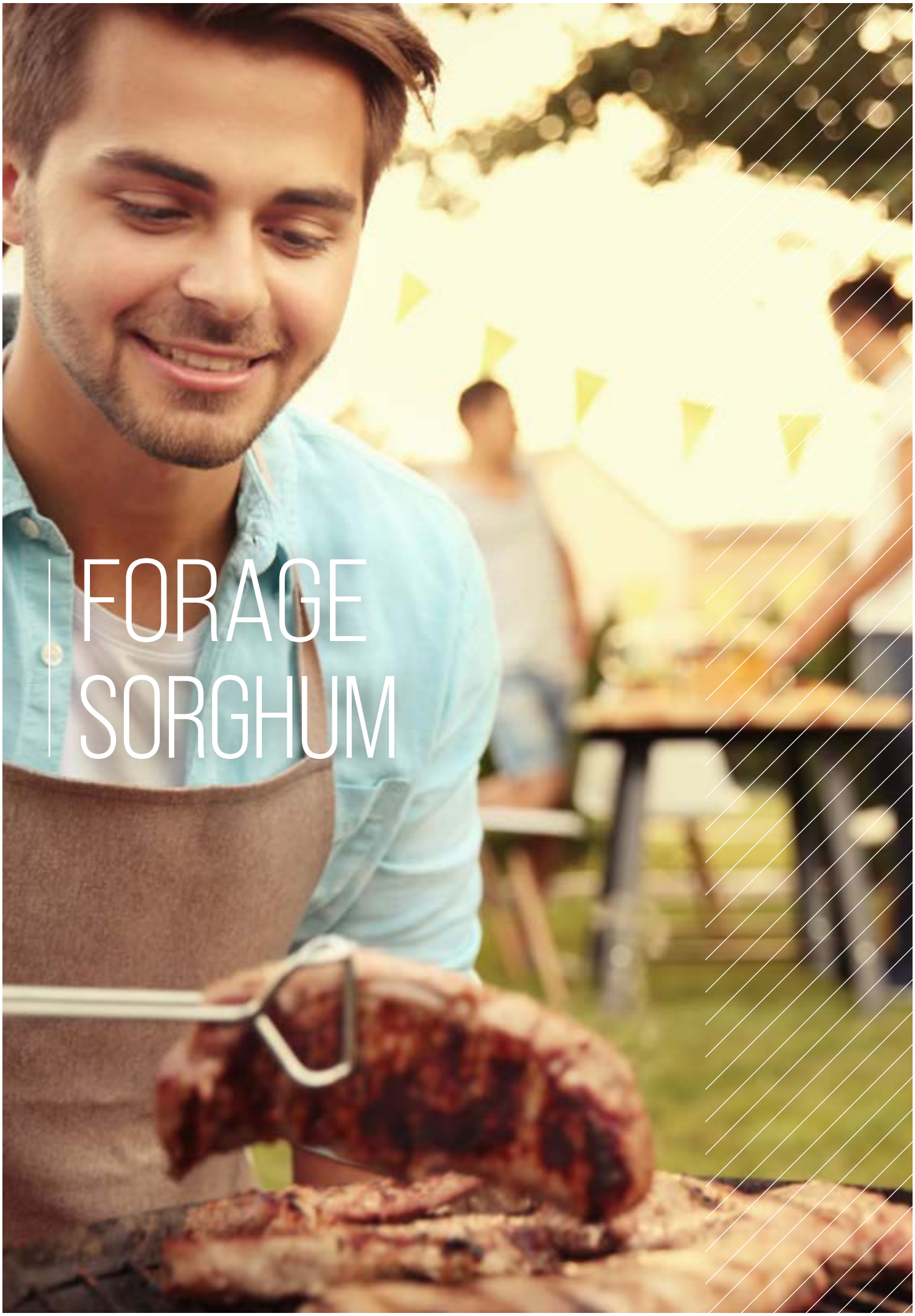
Suited to All Livestock Types, Silage and Hay

Mid Season

Australian Release >2021

OAT YIELD BY CUT MEAN LAIDLEY & KINGAROY 2018





FORAGE SORGHUM

Forage Sorghum Selection

The term forage sorghum covers a range of C4 summer forages including sudan grass, sorghum x sudan crosses, sorghum x sweet sorghum and sweet sorghum x sweet sorghum types. These hybrids can also have crosses involving BMR (brown mid rib) genes improving feed quality. Each of these has specific traits making them better suited to different on-farm uses.

The selection guide below is included to help you choose the most appropriate option for your situation.

You should also be aware that whilst they are included as forage sorghums, sudangrass is more susceptible to Atrazine damage which is excluded from most herbicide labels. If grass weeds are a problem, then you should use a seed safener such as Concep II, which can be used on all forage sorghum types. This can then enable the use of either Dual Gold or Primextra Gold.

FORAGE SORGHUM SELECTION GUIDE

Decision Criteria	Best Type	Preferred Option
Quickest feed to first grazing dual purpose grazing or hay cuts	Sorghum x Sudan	Flourish+
Deferred grazing or hay production, Late flowering to maintain quality	Sweet Sorghum x Sweet Sorghum	Calorific+

QUALITY ANALYSES CONDUCTED IN SUMMER 22/23 AT WARWICK QLD ON FLOURISH+ AND CALORIFIC+

Starting at the safe graze grazing/cutting height through to flowering.

FLORISH+ SERIAL SAMPLING TEST, WARWICK 2022/23*

SAMPLE ID	SAMPLE DATE	HEIGHT (M)	SWW	SDW	DM P'PTION	PWW AVG (G)	DRY MATTER	MOISTURE	% OF DRY MATTER					MJ/KG DM	% OF DRY MATTER	
									CRUDE PROTEIN	ACID DETERGENT FIBRE	NEUTRAL DETERGENT FIBRE	DIGESTIBILITY (DMD)	DIGESTIBILITY (DOMD)	EST. ME	FAT	ASH
1	23/1/23	0.7	284	41.6	0.15	638	13.9	86.1	22.5	25.3	49.6	68.4	64.8	10.2	5.1	10.1
2	27/1/23	0.9	275.7	31.2	0.11	1261	10.7	89.3	20	28.6	56.3	63.6	60.7	9.3	4.8	9.5
3	30/1/23	1.1	563.9	70	0.12	1481	11.8	88.2	18.1	29.5	57.4	62.4	59.7	9.1	4.7	9.4
4	2/2/23	1.3	410.2	50.3	0.12	1893	11.8	88.2	15.6	31.5	57.6	61.4	58.8	8.9	4.1	9.2
5	6/2/23	1.5	866	131	0.15	2702	14.4	85.6	14.4	30.8	56.1	62.1	59.4	9.1	4.2	9.1
6	10/2/23	1.7	594.6	112.7	0.19	2581	18	82	12.4	30.5	55.7	63.8	60.8	9.4	4.2	7.5
7	24/2/23	2	711.1	177.8	0.25	4013	23.9	76.1	11.8	28.7	55.3	61.9	59.3	9	4.4	7.2

CALORIFIC+ SERIAL SAMPLING TEST, WARWICK 2022/23*

SAMPLE ID	SAMPLE DATE	HEIGHT (M)	SWW	SDW	DM P'PTION	PWW AVG (G)	DRY MATTER	MOISTURE	% OF DRY MATTER					MJ/KG DM	% OF DRY MATTER	
									CRUDE PROTEIN	ACID DETERGENT FIBRE	NEUTRAL DETERGENT FIBRE	DIGESTIBILITY (DMD)	DIGESTIBILITY (DOMD)	EST. ME	FAT	ASH
10	30/1/23	1.1	870.3	105	0.12	1595	11.5	88.5	19	28.2	56.8	64.4	61.4	9.5	4.8	8.7
11	2/2/23	1.3	620.9	77.5	0.12	2297	11.9	88.1	14.3	32	59	60.5	58.1	8.8	4.1	8.5
12	6/2/23	1.5	1058	155.9	0.15	2367	14	86	15.6	29.5	57.3	61.8	59.2	9	4.4	8.5
13	10/2/23	1.7	878.2	159.1	0.18	2837	17.3	82.7	10.4	31.6	58.1	61.3	58.7	8.9	4.2	7.2
14	8/3/23	2.4	569.7	156.8	0.28	4963	26	74	8.4	29.1	57	59.6	57.3	8.6	4	7

*Row spacing: 0.76m. Samples: 1m lengths

Flourish+

Flourish+ is an excellent value forage sorghum option ideally suited to fast first feed and multiple harvests.

FAST FIRST FEED AND MULTIPLE HARVESTS

Flourish+ should be grazed from 60–100cm in height to maximise forage quality, but can be conserved as hay, although with lower feed value. Higher sowing rates will maximise yield and improve quality through production of finer stems. It is suited to hay or grazing by sheep, beef or dairy cattle.

It will need to be fed with adequate nutrition based on a soil test. We recommend sowing with an N/P based starter fertiliser and regular topdressing after grazings with Nitrogen and some Potassium. Being a sorghum by sudan, grass weeds can be controlled with Atrazine without the need for a seed safener. For difficult grass and broadleaf weed problems, you can use a seed safener such as Concep II to enable the use of Dual Gold or Primextra Gold.

FEATURES

- Hybrid Sorghum x Sudan
- Fine stemmed and leafy
- Excellent regrowth & drought tolerance
- Works well as a multi-cut hay or hay and silage

BENEFITS

- Low prussic acid risk
- Improved feed quality
- Outstanding animal performance
- Flexible stand management

SOWING RATES

Dryland	8–12kg/ha
Irrigated	20–25kg/ha

Suited to All Livestock Types, Silage and Hay

Early Flowering

Australian Release >2015

SORGHUM X SUDAN CUTTING TRIAL, WARWICK 2020/21*

VARIETY	RATINGS (13.04.21)		
	EX.T RATING (LEAF BLIGHT)	RUST RATING	GROWTH STAGE
Flourish+	7	5	9/4 Flowering
Flourish	6	5	13/4 Flowering
Pioneer SSS	6	5	5/4 Flowering
Revolution	6	7	14/4 Flowering

SORGHUM X SUDAN CUTTING TRIAL, KINGAROY 20/21^ & WARWICK 2021/22#

VARIETY	KINGAROY 20/21				WARWICK 21/22		
	HARVEST 1 (T/HA)	HARVEST 2 (T/HA)	HARVEST 3 (T/HA)	TOTAL DM (T/HA)	HARVEST 1 (T/HA)	HARVEST 2 (T/HA)	TOTAL DM (T/HA)
Flourish+	4.28	4.09	8.74	17.11	3.6	3.85	7.45
Flourish	3.64	3.24	8.32	15.19	-	-	-
Pioneer SSS	2.65	3.37	9.05	15.08	3.21	4.07	7.28
Revolution	3.08	2.59	7.67	13.33	2.94	2.81	5.75

WARWICK SORGHUM X SUDAN CUTTING TRIAL 2022/23+

VARIETY	HARVEST 1 (12.01.2023)			HARVEST 2 (08.02.2023)			HARVEST 3 (22.03.23)			RATINGS (04.05.23)		TOTAL DM
	GENERAL RATING	DM YIELD (T/HA)	LEAF PROD. (T/HA)	GENERAL RATING	DM YIELD (T/HA)	LEAF PROD. (T/HA)	GENERAL RATING	% IN HEAD	DM YIELD (T/HA)	GENERAL RATING	RUST RATING	DM YIELD (T/HA)
Flourish+	8	4.41	2.04	7.75	3.6	2	7.5	40	5.83	7.5	7	13.84
Banker	7	3.96	1.85	7.5	3.76	1.95	6	80	3.78	7	5.5	11.5
Calibre BMR	7.25	3.67	1.75	7	3.2	1.52	6.75	30	3.35	6.5	7	10.22

WARWICK SORGHUM X SUDAN CUTTING TRIAL (LATER PLANTING) 2022/23X

RATINGS ARE ON A 1–9 SCALE: 1=VERY POOR, 9=EXCELLENT.

VARIETY	HARVEST 1 (14.02.2023)			HARVEST 2 (23.03.2023)			HARVEST 3 (05.05.23)					TOTAL DM
	GENERAL RATING	DM YIELD (T/HA)	LEAF PROD. (T/HA)	GENERAL RATING	% IN HEAD	DM YIELD (T/HA)	LEAF BLIGHT RATING	RUST RATING	GENERAL RATING	% IN HEAD	DM YIELD (T/HA)	DM YIELD (T/HA)
Flourish+	7.5	3.9	1.71	6.25	5	4.56	8	7	6.5	5	2.63	11.09
Banker	7.5	3.46	1.54	6.5	40	4.61	8	6	7	2	2.58	10.65
Calibre BMR	7.5	3.28	1.58	6.5	20	4.44	8	7.5	7	0	2.43	10.15

*Sown 28/01/21. Wet weather prevented harvest. ^Sown 01/12/20. This trial was cut as if it was being grown for grazing. #Sown 25/01/22. Original Flourish not planted in 2021/22 trials. + Sown 23/11/2022. XSown 04/01/2023

Calorific+

Calorific+ is an outstanding new hybrid sweet sorghum ideally suited to fodder conservation.

GENERAL FIT

Like all sweet sorghum types, Calorific is slower to establish than sudangrass and sorghum x sudan hybrids if early feed is required. But when it is left to grow beyond 1.2m in height it will produce more than those earlier types. It can grow up to 3m tall and will have good grain content if allowed to mature for a late silage cut.

As such it is best suited to where a grower is chasing maximum fodder yield from one or potentially two large harvests. It is a late flowering variety with a large broad leaf to maximise leaf to stem ratio and hence improve feed quality. It also has high sugar content in the stem so will not be penalised when used for high yielding silage cuts.

Under good conditions or where irrigation is available, it can be shut up for a second cut or grazed by livestock.

Suited to Dairy & Beef Cattle, Silage and Hay

FEATURES

New hybrid sweet sorghum x sweet sorghum	Late maturity
Large broad leaf	High sugar stem

BENEFITS

- Suited to high yielding one or 2 cuts for fodder
- Retains quality under longer growing season
- Provides higher quality feed for conservation
- Maintains good quality

SOWING RATES

Dryland	6–10kg/ha
Irrigated	10–20kg/ha

Late Maturity

Australian Release >2019

SWEET SORGHUM CUTTING TRIAL, ROMA 2021/22*

VARIETY	HARVEST 1 (06.01.22)		04.03.22	25.05.22	
	GENERAL RATING	DM YIELD (T/HA)	GENERAL RATING	GREENNESS RATING	GENERAL RATING
Calorific+	7.5	8.7	6.5	8	8
Sugargraze	7.5	10.05	6	6	6
Lantern	6	9.27	6	6	6

SWEET SORGHUM SILAGE TRIAL, WARWICK 2021/22^

VARIETY	16.03.22	13.04.22	04.05.22					HARVEST 1 (26.05.22)					
	GENERAL RATING	GROWTH STAGE	EX.T RATING	RUST RATING	ERGOT RATING	GENERAL RATING	GRAIN SET %	EX.T RATING	RUST RATING	ERGOT RATING	GENERAL RATING	GRAIN SET %	DM YIELD (T/HA)
Calorific+	8	Mid Flower	8	7	8	6.5	95	6	4	8	5.5	100	16
Sugargraze	7	Heads Em.	7	7	5	7	0	6	6	3	6	5	17
Lantern	6	Mid Flower	7	5	4	5.5	5	7	5	4	5	10	15.2

SWEET SORGHUM MULTICUT TRIAL, WARWICK 2022/23#

RATINGS ARE ON A 1–9 SCALE: 1=VERY POOR, 9=EXCELLENT.

VARIETY	HARVEST 1 (17.01.21)		HARVEST 2 (SILAGE CUT) (05.05.2023)						TOTAL DM
	GENERAL RATING	DM YIELD (T/HA)	BLIGHT RATING	RUST RATING	ERGOT RATING	GENERAL RATING	GRAIN SET %	DM YIELD (T/HA)	DM YIELD (T/HA)
Calorific+	7.5	4.45	7	7	9	7	90	22.26	26.71
Sugargraze	7.25	4.36	6	7	6	7	30	15.34	19.7
Lantern	7	5.25	7	5	7	6	50	19.27	24.52
Megasweet	7	5.45	5	4	7	5.5	70	12.37	17.82

*Sown 18/11/21). Original Calorific not planted in 21/22 trials. ^Sown 25/01/22. Original Calorific not planted in 21/22 trials. #Sown 23/11/2022. First harvest was taken as a grazing harvest, second harvest was taken as a silage cut.

CANOLA

Spark TT

Spark TT is a new early maturity TT hybrid with high yields and improved oil content.

IMPROVED GROSS MARGINS

Spark TT is a new early maturity TT hybrid released by RAGT in 2019. With high yields, strong seedling vigour and improved oil content, it can deliver excellent returns in this maturity group.

Type	Hybrid
Herbicide Tolerance Group	Triazine tolerant
Blackleg Resistance	MR (Bare); R (Ilevo/Saltro)
Resistance Group	ABDS
Seedling Vigour	Excellent
Crop Height	Short-Moderate
Alternative To	Hyola 350, ATR Bonito, ATR Stingray
Sowing Zones	300 - 500mm

FEATURES

- Excellent early vigour
- High oil content
- Strong blackleg resistance
- High yields within maturity group

SOWING RATES

Average yield range	Optimum plants
1-2/ha	20-40 plants/m2
2-3/ha	30-40 plants/m2

Early Maturity

Australian Release >2019

CROP TRIAL DATA*

For information on performance of Spark TT in trials, please visit: nvtonline.com.au

*NVT Long Term MET Yield Reporter 2016-2020. For full results visit nvtonline.com.au

HYBRID CANOLA

RGT Capacity TT

RGT Capacity TT is a new generation TT hybrid from RAGT. It has excellent early vigour and gets up and establishes quickly for maximum weed competition.

Type	Hybrid
Herbicide Tolerance Group	Triazine tolerant
Blackleg Resistance	MS (Bare), R (ILeVo/Saltro)
Resistance Group	B
Seedling Vigour	Excellent
Crop Height	Moderate
Alternative To	Hyttec Trophy, Hyttec Trident, ATR Bonito, Hyola Blazer, InVigor T4510 and TurbineTT.
Sowing Zones	350 mm plus

FEATURES

EPR $10/T plus GST	Up to 19% higher yielding than open pollinated varieties
It improves gross margins	Equivalent yield to other TT hybrids

SOWING RATES

Average yield range	Optimum plants
1-2/ha	20-40 plants/m2
2-3.5/ha	30-50 plants/m2

Early–Mid Maturity

Australian Release >2022

CROP TRIAL DATA*

For information on performance of RGT Capacity TT in trials, please visit: nvtonline.com.au

HYBRID CANOLA

RGT Baseline TT

RGT Baseline TT has high yields in the medium to high rainfall areas combined with high oil levels.

IMPROVED GROSS MARGINS

RGT Baseline TT is an outstanding new release from RAGT, superseding Ignite. It will provide higher grain and highest oil yields of any variety in the medium to high rainfall areas throughout Australia, resulting in higher on-farm profitability.

Type	Hybrid
Herbicide Tolerance Group	Triazine Tolerant
Blackleg Resistance	MR-MS (Bare), R (Ilevo/Saltro)
Resistance Group	B
Seedling Vigour	Excellent
Crop Height	Moderate
Oil	High
Alternative To	HyTTec Trifecta, InVigor T 6010, Ignite, Hyola Blazer TT, ATR Wahoo
Sowing Zones	500mm+

FEATURES

Highest oil yields- 1.5-2% higher than any other varieties in its class

Very high yields in high rainfall and irrigated zones

Moderate crop height for easier harvesting

High yielding in industry trials in SW Vic and SE NSW

SOWING RATES

Average yield range	Optimum plants
2-4.5T/ha	30-50 plants/m2

Mid-Late Maturity

Australian Release >2023

CROP TRIAL DATA*

For information on performance of RGT Baseline TT in trials, please visit: nvtonline.com.au

*NVT MET Medium - High rainfall, all trials in SE NSW, SW & NE Vic and SE SA 21.9.2022

RGT Dynatron TT

RGT Dynatron TT combines the value of the Triazine Tolerant herbicide system with other hybrid seed traits.

Type	Hybrid
Herbicide Tolerance Group	Triazine Tolerant
Blackleg Resistance	MR-MS (bare)
Resistance Group	BC
Seedling Vigour	Excellent
Crop Height	Medium-Tall
Oil	High
Alternative To	HyTTec Trident, HyTTec Trophy, InVigor T4510, Hyola 550TT, Hyola 559TT, ATR Bonito

FEATURES

An EPR of $10 per tonne (ex GST) applies to Dynatron TT to minimise upfront costs

Significantly higher yielding compared with OP TT cultivars (>17% in 2019 than ATR Bonito - refer to NVT data below)

SOWING RATES

Average yield range	Optimum plants
1-2/ha	20–40 plants/m2
2–3.5/ha	30–50 plants/m2

Mid Maturity

Australian Release >2011

CROP TRIAL DATA*

For information on performance of RGT Dynatron TT in trials, please visit: nvtonline.com.au

Winter Canola

RAGT pioneered the use of forage rape and blends of rape with cereals and ryegrass to increase winter feed production on mixed farms.

In 2011 we first trialled RAGT winter canolas for grain and oil yield. RAGT has seen the potential for these winter types to be sown early and provide exceptional autumn/winter feed and then be locked up for similar grain and oil yields where finishing spring rains occur. But given the large grazing returns from these varieties, even moderate grain yields or harvest for hay would enable improved Gross Margins over spring canolas used for grain & oil only.

Typical winter forage yields of 4.0 to 6.0tDM/ha have enabled grazing of 30-40 lambs/ha for 8-12 weeks prior to lock up for grain. This is resulting in grazing income of $1,000-1,500/ha (equivalent of 2-3t/ha grain), plus grain yields of 2.0-3.0t/ha.

A new Clearfield winter canola RGT Nizza CL will increase the potential use in mixed farming regions given its 2 week earlier maturity than Edimax.

GRAZING GUIDELINES

RAGT winter canola can be planted as early as adequate moisture is available to enable successful establishment. Plants can be grazed after they have reached withholding guidelines for seed treatments. Ensure that stock have been drenched and vaccinated at least seven days before moving onto the crop. They should be introduced slowly over a few days to enable rumen adjustment and additional fibre such as hay or straw should be available as well as fresh water.

Forage yields can be increased by the application of Nitrogen up to 60kg N/ha about four weeks after sowing. Crop should not be grazed within four weeks of application of Nitrogen.

RGT Nizza CL

RGT Nizza CL is a hybrid, Clearfield winter canola offering growers improved gross margins from both autumn/winter grazing and high potential grain yields.

GRAZING AND GRAIN

RGT Nizza CL can be sown in late summer or early autumn for grazing at eight weeks after sowing up until mid-July lock-up for grain with excellent oil content.

Type	Hybrid
Herbicide Tolerance Group	Clearfield
Blackleg Resistance	R (Bare)
Resistance Group	B
Seedling Vigour	Excellent
Crop Height	Moderate to tall
Alternative to	Hyola 970CL, Edimax CL, Pheonix CL and Hyola Feast CL
Sowing Zones	NW & SW Slopes, S Tablelands NSW, N Victoria (irrigation), NE & S Victoria, SE SA and Tasmania

FEATURES

Excellent early vigour high biomass yield

Suited to early planting

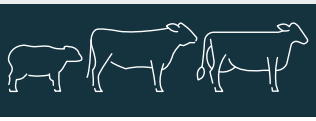
BENEFITS

- 3 to 4 days earlier than Edimax CL
- 7 to 10 days earlier to flower than Hyola 970CL
- High oil content
- No. 1 yielding variety in Europe

SOWING RATES

Grain only	2.5–3.5kg/ha
Early grazing and grain	3.5–4.0kg/ha

Suited to Sheep and Beef



Early Winter Maturity

Australian Release >2021

RAGT INTERNAL TRIAL RESULTS (GRAIN YIELD)

VARIETY	LAKE BOLAC (VIC) 2019		COOTAMUNDRA (NSW) 2019		SHEPPARTON 2019		SHEPPARTON 2020		MEAN
	T/HA	HOMOGENEOUS GROUPS	T/HA	HOMOGENEOUS GROUPS	T/HA	HOMOGENEOUS GROUPS	T/HA	HOMOGENEOUS GROUPS	
RGT Nizza CL	3.8203	A	0.5833	AB	1.3162	A	4.275	A	2.4987
Hyola 970	3.761	A	0.4833	AB	1.2786	A	4.2225	A	2.4364
Pheonix CL	3.069	A	0.7893	A	1.2764	A	4.04	A	2.2937
SFR65-056CL	3.8103	A	0.6333	AB	1.2782	A	4.0275	A	2.4373
Grand Mean	3.5472		0.575		1.1927		3.9579		2.3182
CV%	14.17%		31.15%		23.95%		8.79%		
LSD	1.2178		0.3259		0.5196		0.5242		

*For full results, visit nvtonline.com.au

RGT Clavier CL

RGT Clavier CL is a hybrid, Clearfield winter canola offering growers improved gross margins from both autumn/winter grazing and high potential grain yields.

GRAZING AND GRAIN

RGT Clavier CL can be sown in late spring to early autumn. Suitable for multiple grazings, and manage until harvest for high oil and grain yields.

Type	Hybrid
Herbicide Tolerance Group	Clearfield
Blackleg Resistance	R (Bare)
Resistance Group	TBC
Seedling Vigour	Excellent
Crop Height	Moderate–Tall
Alternative To	Hyola 970CL, Phoenix CL
Sowing Zones	NW & SW Slopes, S Tablelands NSW, N Victoria (irrigation), NE & S Victoria, SE SA, Tasmania, and Southern WA

FEATURES

Excellent early vigour with excellent crop competition

Suited to early planting - late spring to early autumn

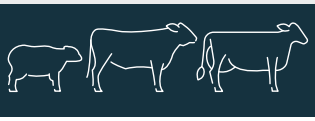
BENEFITS

- 2 to 3 days earlier to flower than Hyola 970CL
- High oil content

SOWING RATES

Grain Only	2.5–3.5kg/ha
Grazing and Grain	3.5–4.0kg/ha

Suited to Sheep and Beef



Early Winter Maturity

Australian Release >2022

CROP TRIAL DATA*

VARIETY	LAKE BOLAC (VIC) 2020		
	YIELD T/HA	OIL %	DAYS TO FLOWER
RGT Clavier CL	4.8	45	161
RGT Nizza CL	4.7	46.75	155
Hyola 970CL	4.6	46.5	164
Phoenix CL	4.4	46.4	158
Edimax CL	4.1	46.4	158

*Source: SFS trial Lake Bolac 2020. ^Planted 9 April 2020.


BARLEY

RGT Planet

RGT PLANET
a new world

RGT Planet is a high yielding spring barley with a strong agronomic package and x-ceptional yield potential.

A GOOD ECONOMIC OPTION

RGT Planet has a strong agronomic package that, combined with its yield potential, will make it an economic option for Australian barley growers.

RGT Planet received full malt accreditation in Australia in March 2019. It already has malt status in many European countries and strong demand from European and Asian brewers.

RGT Planet has good disease resistance to mildew, rhincosporum, net blotch and brown rust. It also has good straw strength and reduced risk of lodging.

PBR

End Point Royalty
>$4.40/tonne (excl. gst)

FEATURES

- High yielding variety
- Low protein, high hot water extract
- Malt accredited in Australia and Europe
- Strong interest from Asian brewers

BENEFITS

- Earlier planting opportunity
- Suited to malting
- Heineken green light
- Carlsberg approved
- Adaptable to early or late season finishes

SOWING RATES

50-80kg/ha

Mid Flowering

Australian Release >2017

CROP TRIAL DATA*

For information on performance of RGT Planet in trials, please visit: nvtonline.com.au

WHEAT

MID WINTER WHEAT

RGT Cesario

RGT Cesario is an awnless, multi-purpose mid-winter wheat, suited to grazing, silage or grain production in the medium to high rainfall zone.

A GOOD ECONOMIC OPTION

RGT Cesario is an awnless, mid-winter wheat. It has a potential for high yields in the medium and high rainfall zone. It has a maturity similar to RGT Accroc with a solid disease package to back it up.

The high yield and grain quality of RGT Cesario will bring benefits to the Australian grower.

Type	Winter red wheat
Disease Resistance	Visit nvtonline.co.au
Seedling Vigour	Excellent
Grazing Potential	Very good autumn and winter
Sowing Zones	NW & SW slopes, S Tablelands NSW, N Victoria (irrigation), S Victoria, SE SA, Tasmania

PBR

End Point Royalty >$4.00/tonne (excl. gst) on grain & hay/silage

FEATURES

Full season growing potential	Multi purpose
Increased resistance to sprouting	Very high yield potential

Can be sown in HRZ from late summer until early winter

Increased income potential for autumn/winter grazing when sown early.

SOWING RATES

80–120kg/ha

Mid–Late Maturity

Australian Release >2020

CROP TRIAL DATA*

For information on performance of RGT Cesario in long season wheat trials, please visit: nvtonline.com.au

*For Disease Resistance, visit: nvtonline.com.au

RGT Accroc

RGT Accroc is a bearded, medium-long growing season winter wheat with potential for high yields in the medium and high rainfall zone.

FULL SEASON GROWING POTENTIAL

RGT Accroc is a bearded, medium-long growing season winter wheat with potential for high yields in the medium and high rainfall zone. It is a variety that has taken a high market share in France where its combination of earlier maturity, high yields and good grain quality has made it desirable for growers and end-users alike.

The variety has a good disease resistance profile with very good resistance to stripe rust. With short stiff straw, harvest quality is good producing large bold grain with a high thousand grain weight.

Type	Winter red wheat
Disease Resistance	Visit nvtonlin.com.au
Seedling Vigour	Excellent
Grazing Potential	Very good autumn and winter
Sowing Zones	NW & SW slopes , S Tablelands NSW, N Victoria (irrigation), S Victoria, South-east SA, Tasmania

PBR

End Point Royalty
>$4.00/tonne (excl. gst)

FEATURES

- Full season growing potential
- High yield potential
- Early heading and maturing
- Short stiff straw
- Increased income potential for autumn/winter grazing when sown early

SOWING RATES

80–120kg/ha

Mid–Late Maturity

Australian Release >2017

CROP TRIAL DATA*

For information on performance of RGT Accroc in long season wheat trials, please visit: nvtonline.com.au

*For Disease Resistance, visit: nvtonline.com.au

RGT Waugh

Announcing the arrival of **RGT Waugh** for season 2023. If you're in the medium to high rainfall zone and looking to maximise yield, look at the scoreboard and make sure RGT Waugh is in your line up.

FULL SEASON GROWING POTENTIAL

RGT Waugh is a bearded, medium-long growing season winter wheat with class leading yields in the medium and high rainfall zone. RGT Waugh is the new benchmark for yield in white winter wheats.

The variety has a good disease resistance profile with very good resistance to stripe rust. With short stiff straw, harvest quality is good producing large bold grain with a high thousand grain weight.

Type	Winter white wheat
Disease Resistance	Visit nvtonlin.com.au
Seedling Vigour	Excellent
Grazing Potential	Very good autumn and winter
Sowing Zones	NW & SW slopes , S Tablelands NSW, N Victoria (irrigation), S Victoria, South-east SA, Tasmania

PBR

End Point Royalty
>$4.00/tonne (excl. gst)

FEATURES

- Full season growing potential
- Class leading yields
- Early heading and maturing
- Short stiff straw
- SFR86-085
- Increased income potential for autumn/winter grazing when sown early

SOWING RATES

80–120kg/ha

Mid–Late Maturity

Australian Release >2023

CROP TRIAL DATA*

For information on performance of RGT Waugh in long season wheat trials, please visit: nvtonline.com.au

RGT Zanzibar

RGT Zanzibar is a bearded main season red wheat with very high yield potential and is well adapted to all environments across Eastern Australia.

FULL SEASON GROWING POTENTIAL

RGT Zanzibar is a bearded main season red wheat with very high yield potential and is very well adapted to all environments across QLD, NSW, VIC, SA and Tasmania. For growers looking for yield who have a reliable feed market this variety is hard to go past. RGT Zanzibar has superior grain yield over key competitors Suntop, EGA Gregory and Spitfire.

The variety has a good disease resistance profile with very good resistance to stripe rust. With excellent straw strength harvest quality is good producing large bold grain with a high thousand grain weight.

Type	Main season red wheat
Disease Resistance	Visit nvtonlin.com.au
Seedling Vigour	Excellent
Grazing Potential	Very good autumn and winter
Sowing Zones	Suited to the main season sowing area of eastern Australia

End Point Royalty
>$4.00/tonne (excl. gst)

FEATURES

- R86-055
- Main season spring wheat
- Suited to Late-April to Mid-May
- Being tested for grazing tolerance
- High yield potential
- Excellent stripe rust resistance
- Excellent straw strength and standability

SOWING RATES

80–120kg/ha

Mid Maturity

Australian Release >2017

CROP TRIAL DATA*

For information on performance of RGT Zanzibar in long season wheat trials, please visit: nvtonline.com.au

*For Disease Resistance, visit: nvtonline.com.au

WINTER RED WHEAT

RGT Calabro

AVAILABLE THROUGH MIDLAND SEEDS, RICHMOND TASMANIA

RGT Calabro is a bearded, medium-long growing season winter wheat with potential for high yields in the medium and high rainfall zone.

FULL SEASON GROWING POTENTIAL

RGT Calabro is a bearded, medium-long growing season winter wheat with potential for high yields in the medium and high rainfall zone.
It is a variety that has taken a high market share in France where its maturity, high yields and good grain quality has made it desirable for growers and end-users alike.

The variety has a good disease resistance profile with very good resistance to stripe rust. With short stiff straw, harvest quality is good producing large bold grain with a high thousand grain weight.

Type	Winter red wheat
Disease Resistance	Visit nvtonlin.com.au
Seedling Vigour	Excellent
Grazing Potential	Very good autumn and winter
Sowing Zones	Tasmania , S Tablelands NSW, N Victoria (irrigation),S Victoria, South-east SA

End Point Royalty >$4.00/tonne (excl. gst)

FEATURES

R86-036	Can be sown in HRZ from late summer until early winter
Early heading and maturing	Full season growing potential
High yield potential	Excellent stripe rust resistance
Short stiff straw with excellent standability	Increased potential for autumn/ winter grazing when sown early

SOWING RATES

80–120kg/ha

Mid–Late Maturity

Australian Release >2017

CROP TRIAL DATA*

For information on performance of RGT Calabro in long season wheat trials, please visit: nvtonline.com.au

*For Disease Resistance, visit: nvtonline.com.au

RGT Ivory

AVAILABLE THROUGH MIDLAND SEEDS, RICHMOND TASMANIA

RGT Ivory is a bearded, very long growing season winter wheat with potential for high yields in the long season high rainfall zone.

FULL SEASON GROWING POTENTIAL

RGT Ivory has been tested in NVT in Tasmania however suits early planting to allow full development and to maximise yield potential. Currently in NVT and Hyperyielding cereal trials .

The variety has a good disease resistance profile with very good resistance to stripe rust. With short stiff straw, harvest quality is good producing large bold grain with a high thousand grain weight

Type	Winter white wheat
Disease Resistance	Visit nvtonlin.com.au
Seedling Vigour	Excellent
Grazing Potential	Very good autumn and winter
Sowing Zones	Tasmania

FEATURES

R86-044	Awned White Wheat
Full season growing potential	Very Long maturity
Can be sown in HRZ from late summer until early winter	High yield potential
Short stiff straw with excellent standability	Increased potential for autumn/ winter grazing when sown early

SOWING RATES

80–120kg/ha

End Point Royalty >$4.00/tonne (excl. gst)

Mid–Late Maturity

Australian Release >2019

CROP TRIAL DATA*

For information on performance of RGT Ivory in long season wheat trials, please visit: nvtonline.com.au

WINTER RED WHEAT

RGT Relay

AVAILABLE THROUGH MIDLAND SEEDS, RICHMOND TASMANIA

RGT Relay is an awnless, long growing season winter red wheat with potential for high yields in the high rainfall zone.

FULL SEASON GROWING POTENTIAL

RGT Relay has high yields and good grain quality. It has been tested in Tasmania however suits early planting to allow full development and to maximise yield potential. Highest yielding in FAR Hyperyielding cereal trials TOS 1 2016 .

The variety has a good disease resistance profile with very good resistance to stripe rust and good resistance to Septoria. With short stiff straw, harvest quality is good producing large bold grain with a high thousand grain weight.

Type	Winter red wheat
Disease Resistance	Visit nvtonlin.com.au
Seedling Vigour	Excellent
Grazing Potential	Very good autumn and winter
Sowing Zones	Tasmania

FEATURES

R86-036	Can be sown in HRZ from late summer until early winter
Early heading and maturing	Full season growing potential
High yield potential	Excellent stripe rust resistance
Short stiff straw with excellent standability	Increased potential for autumn/ winter grazing when sown early

SOWING RATES

80–120kg/ha

End Point Royalty >$4.00/tonne (excl. gst)

Mid–Late Maturity

Australian Release >2019

CROP TRIAL DATA*

Not tested in NVT as its maturity is outside of testing window.

*For Disease Resistance, visit: nvtonline.com.au

RAGT Cereal Commercial Partners and Variety EPRs

RAGT proprietary cereals are available from the Commercial Partners below with the End Point Royalties as detailed.

COMMERCIAL PARTNER	TOWN/STATE	PHONE	RGT CESARIO WHEAT	RGT WAUGH WHEAT	RGT CALABRO WHEAT	RGT ACCROC WHEAT	RGT ZANZIBAR WHEAT	RGT PLANET BARLEY	RGT RELAY WHEAT	RGT IVORY WHEAT
Australian Seed & Grain	Moora, WA	08 9651 1069						$4.40		
EDSCO	Kellerberrin, WA	08 9045 4036						$4.40		
Melchiorre Seeds	Naroogin, WA	08 9881 1155						$4.40		
MultiSEED	Esperance, WA	08 9071 1053						$4.40		
Modra Seeds	Ungarra, SA	08 8688 8094						$4.40		
RH Verner	Mallala, SA	08 8520 2182						$4.40		
Naracoorte Seeds	Naracoorte, SA	08 8762 1944				$4.40		$4.40		
AGF Seeds	Smeaton, VIC	03 5345 6262	$4.40			$4.40		$4.40		
Baker Seeds	Rutherglen, VIC	02 6032 9484	$4.40	$4.40		$4.40	$4.40	$4.40		
Nutrien Longford	Longford, TAS	03 6343 1666	$4.40	$4.40		$4.40		$4.40		
Midland Seeds	Richmond, TAS	03 6260 4000			$4.40		$4.40		$4.40	$4.40
Hart Bros	Junee, NSW	02 6924 7206	$4.40	$4.40		$4.40	$4.40	$4.40		
Agrigrain	Narromine, NSW	02 6889 2200						$4.40		
Shepherd Grain	Moree, NSW	02 6751 1209						$4.40		
Woods Seed	Goondiwindi, QLD	07 4670 0400						$4.40		
Associated Grain	Dalby, QLD	07 4669 9500						$4.40		

END POINT ROYALTY (EPR)

Each time that a grower purchases seed for sowing of RAGT varieties noted as having EPR payable, they agree to comply with the Variety Licence Agreement including the payment on any applicable EPR.

This EPR is payable on all grain produced except seed retained by the grower for replanting by the grower. All grain produced must be properly declared on the Harvest Declaration form. Full details of RAGT's Variety Licence Agreements are available at www.varietycentral.com. This EPR is the mechanism by which RAGT in Australia and France can continue to breed and screen varieties that can provide improved returns for Australian grain and mixed farmers.

* All EPRs are inclusive of GST

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