

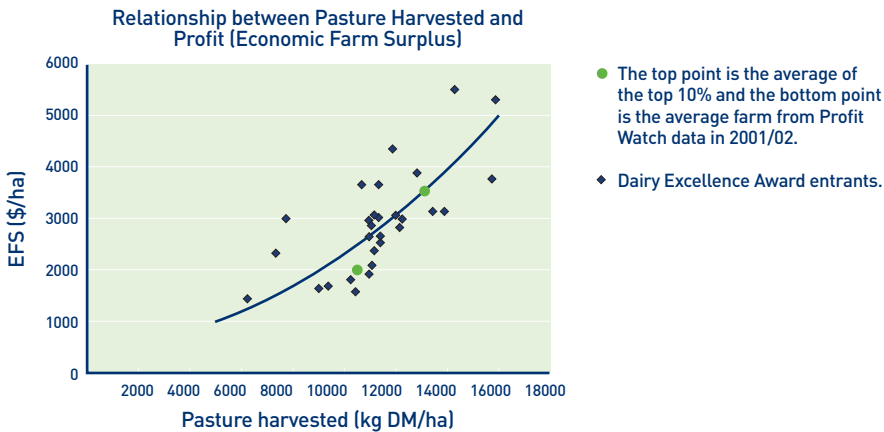


DAIRY PASTURE GUIDE 2009

Meeting the pasture needs of
New Zealand's dairy farmers.

MEETING DAIRY FARMERS' PASTURE NEEDS

New Zealand dairy farmers strive to improve the total milksolids produced on their farms. New Zealand's competitive advantage on the world scene has been the ability of farmers to grow and harvest quality pastures, based on ryegrass and white clover, cost effectively. As shown in the graph below, there is a very strong relationship between pasture harvested and profit expressed as economic farm surplus per hectare (EFS/ha). This data is from the Dairy Excellence Awards 2002. Reference: C. Glassey in Dexcelink Autumn 2005 pp18-19.



The pasture needs for New Zealand dairy farmers is to produce, consume and convert high quality pasture into milksolids efficiently and cost effectively. PGG Wrightson Seeds have an ongoing commitment to meeting this challenge by making available to the New Zealand dairy farmer a range of pasture cultivars and technologies that incorporate the very latest scientific and research developments.

This book will illustrate the opportunities to improve your farm's pasture by identifying key products and technologies that will help provide a high return on investment by regrassing.



PGG WRIGHTSON SEEDS P³TM

PROFITABILITY = PERSISTENCE X PRODUCTION X PERFORMANCE

PGG Wrightson Seeds' plant breeders and evaluation teams have always directed their efforts towards cultivars that focus on PROFITABILITY for New Zealand farmers.

PROFITABILITY for farmers is based around PERSISTENCE in the pasture sward going the distance expected of the cultivar. PRODUCTION is the amount of dry matter produced per hectare and PERFORMANCE is the conversion of dry matter into milksolids per hectare.

We call it the PGG Wrightson Seeds P³TM test.

RENEWING PASTURES, FEED SUPPLY AND DEMAND

WHY RENEW EXISTING PASTURES?

Pastures don't last forever, eventually their productivity and quality declines with time. A number of factors either individually or in combination can contribute to this decline, the key thing for successful pastures is to identify when a pasture has run out and take action.

Reasons to renew pastures are:

- Pastures are not performing (poor yield)
- High weed population (poor quality)
- Outdated plant genetics (ability to grow more)
- Outdated endophyte technology (better options)

WHAT CAN BE ACHIEVED WITH NEW PASTURES?

New pastures provide a number of benefits including:

- Growing more feed annually (kgDM/ha)
- Improving feed quality – growing more energy per hectare (MJME/ha)
- Growing more feed in the “pinch” (feed shortage) periods
- Improving the utilisation of the pasture (better grazing management)
- Improving the conversion efficiency – milksolids produced from the feed eaten
- The ability to use new novel endophytes to:
 - Increase pasture persistence and dry matter production
 - Improve animal performance

HOW MUCH DO I NEED TO RENEW?

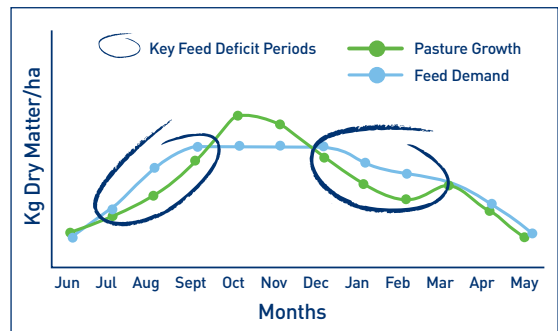
Every dairy farm in New Zealand is different, so there is no set amount of area that should be regrassed each year. Assuming your pasture lasts for 8-10 years, a renewal programme allowing at least 10% of the farm to be regrassed each year will ensure you can capture the benefits that new pasture genetics and technologies can deliver. Pastures older than ten years could be 10–30% lower in dry matter production and will not contain the latest endophytes.

A PASTURE RENEWAL PLAN – THE PROGRAMMED APPROACH™ TO PASTURE RENEWAL

PGG Wrightson Seeds has undertaken research on the best practice techniques for pasture renovation for some years. We recommend our PROGRAMMED APPROACH™ to pasture renewal. For more details on our easy to follow approach or to receive a copy of our Pasture Options book please call us on 0800 805 505 or visit our website www.pggwrightsonseeds.com.

PASTURE GROWTH AND FEED DEMAND

The graph below shows the annual pasture production and annual feed requirements of a dairy farm. The circles demonstrate when feed deficits occur on most dairy farms. These deficits are normally filled by supplements and forage crops, but new pasture cultivars can be used to fill a large amount of these feed deficit periods, leading to better performance and lower costs of production.



PASTURES THAT DELIVER

PGG Wrightson Seeds has one of the largest portfolios of pasture options available to New Zealand farmers.

The following pages identify the PGG Wrightson Seeds pasture cultivars best able to fill these key feed deficit periods.

CLOVERS AND CHICORY

WHITE CLOVERS

White clovers are an important component of dairy pastures. They provide very high quality feed and are a source of nitrogen (through nitrogen fixation) to help support a sustainable dairy pasture.



- Highest producing white clover available in the large leaved class
- High stolon density, large leaved white clover
- High feed quality – improved sugar (soluble carbohydrate) levels
- Highest tolerance to Clover Root Weevil in large leaved class



- Very high yielding medium leaved white clover
- High stolon density and excellent persistence
- Bred for improved autumn activity

CHICORY

Chicory is a high quality summer feed option to promote increased stock performance during the summer/autumn period. Chicory is a tap rooted species which enables the plant to cope with extended dry spells. Chicory pastures require medium to high fertility and are better suited to rotational grazing systems with a period of no grazing in late summer to build up root reserves.



- High dry matter production
- A true perennial with good persistence
- Fast regrowth after grazing or cutting
- Semi-erect for better utilisation
- Fine stemmed for better quality and palatability

Greg Boswell – Horsham Downs, Hamilton

Greg Boswell is into his first position as contract milker, milking 680 cows on a 225 hectare Hamilton farm that has for the last two years incorporated Puna II chicory as part of the rotational dairy grazing.

Greg says that after two years the Puna II is “still pumping” despite being grazed every 25 days. Regular sampling in the 100% Puna II paddocks has shown yields were 16,000 kg DM in the cultivar’s first season and 11-12,000 kg DM in the following drier season, out-stripping the pasture it replaced. “We’re learning more about how to graze it,” says Greg. “We break-feed it like a crop, but not as heavily – we leave a bit there – and it comes back better. We break-feed 2 hectares of the Puna II in three of four breaks and we’re hoping to increase the rotation to 15-20 days.”

The long tap root made it an ideal “nutrient puller” on the farm’s effluent blocks, says Greg, and it winters well.



Richard Henderson (left) and Greg Boswell (right)

UNDERSTANDING ENDOPHYTE

Endophyte is a fungus found in many grass species. The fungal strands grow between the plant cells, and transmit themselves to the next grass generation by growing into the developed seed head and then growing out of the seed into the subsequent grass seedling.

Endophyte enhances the yield and persistence of the grass, because the endophyte produces a number of compounds that are toxic to various insects, and other grass pests. However, endophyte can also cause stock health problems, such as ryegrass staggers.

AR37 ENDOPHYTE

AR37 is an AgResearch novel endophyte. AR37 is available to dairy farmers in the PGG Wrightson Seeds perennial ryegrass EXTREME™.

Improved persistence

A key benefit of AR37 endophyte is improved ryegrass persistence.



AR37 pasture (right) showing persistence over the same variety with Nil endophyte (left) at the DairyNZ trial in the Waikato during the drought early in 2008.

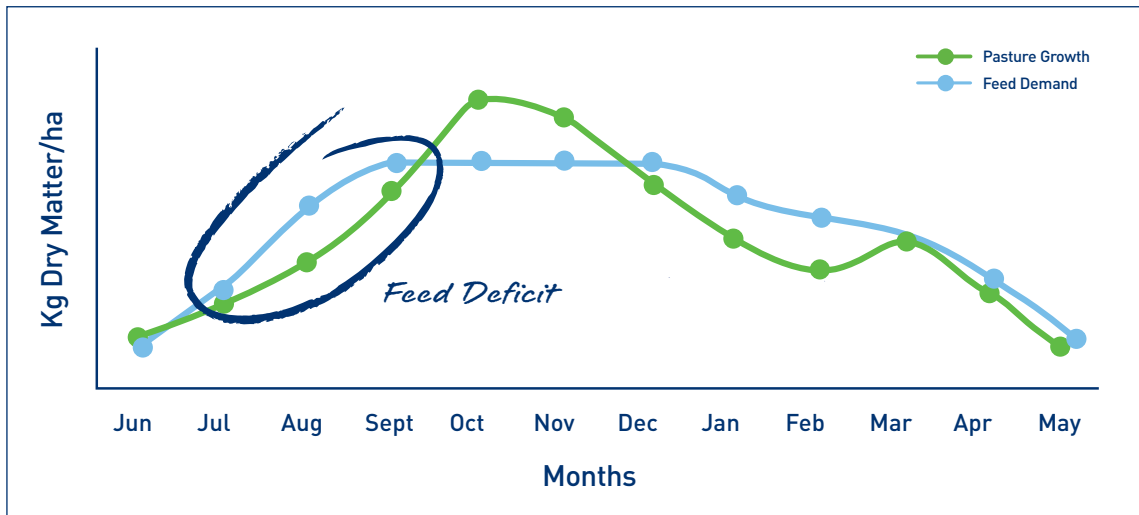
DairyNZ Trial - Overall Conclusions after 3 Years

- AR37 ryegrass was clearly more persistent than either AR1 or standard (HE) ryegrass. This supports findings from previous work.
- The greater persistency translated into a reduced need for renovation of AR37 pastures after the 2008 drought, but in the three years before that time there was no difference in total pasture yield.
- There was no sign of ryegrass staggers or any other animal health issues in cows grazing AR1 or AR37 pastures – even at times when cows grazing HE were affected by ryegrass staggers.
- There was a trend for slightly lower milksolids (MS) production over summer/autumn from cows grazing AR37 or HE compared with AR1.
- Where ryegrass persistence is the top priority then AR37 will clearly deliver benefits. Where persistence of AR1 ryegrasses is not a problem, continuing to sow AR1 is advised. DairyNZ can not envisage any situation in which farmers should sow HE ryegrass.

Source: Dairynewz Summer 2008

For more information on endophyte see page 12.

HIGH PERFORMANCE EARLY SPRING OPTIONS



To fill the gap late winter and early spring an early season pasture mix requires excellent all year round growth with good winter-early spring performance and long term persistence. EXTREME™ and Maverick GII are both diploid ryegrass cultivars selected for excellent dry matter performance throughout the lactation period, have high digestibility and enhanced summer quality. Both cultivars in conjunction with Grasslands Kopu II or Bounty white clovers will form a valuable pasture for those dairy farmers who require high quality dry matter especially leading into calving and during the first and second milking round following calving and for young stock from weaning through to first calving.



- Endophyte options: AR37, AR1, Without
- Very high dry matter production
- Improved sugar (soluble carbohydrate) levels
- Lowest aftermath heading cultivar in mid-season heading class (excellent quality)
- Heading date same as Nui (0 days)



- Endophyte option: Without
- Improved annual dry matter yields
- Improved summer quality (aftermath heading further reduced)
- Improved disease resistance and persistence
- Heading date 17 days later than Nui

HIGH PERFORMANCE SEED MIX OPTION FOR EARLY SPRING GROWTH

EXTREME™ diploid perennial ryegrass	16 kg/ha
Maverick GII diploid short rotation ryegrass	5 kg/ha
Grasslands Kopu II white clover SUPERSTRIKE®	2 kg/ha
Grasslands Bounty white clover SUPERSTRIKE®	2 kg/ha
Grasslands Puna II chicory can be added	2 kg/ha

Note: Mixes may vary depending on the region and local experience.

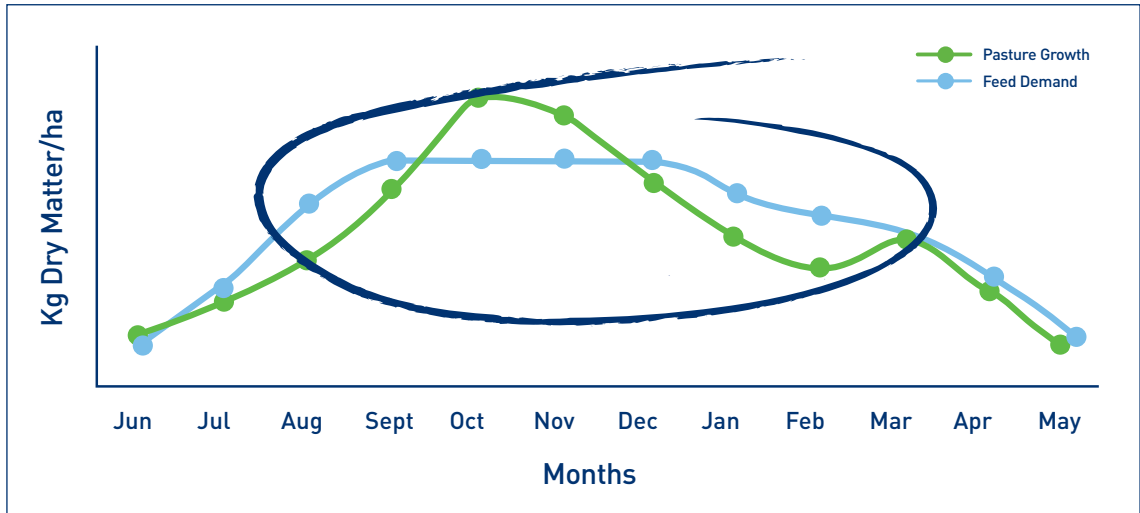
Note:

- For which endophyte option to select refer to page 12.
- For which seed treatment option to use see page 13.

- A pasture renewal programme like the Programmed Approach™ which removes existing pasture and/or weeds, and insect pests is recommended prior to sowing any new pasture.

PERMANENT PASTURE

HIGH PERFORMANCE ALL YEAR ROUND QUALITY AND YIELD OPTIONS



If the aim is to maximise pasture quality and yield through the entire lactation period, BANQUET® II and DELISH™ are excellent options. BANQUET® II is a late flowering, dense, tetraploid ryegrass with excellent yield and quality and is complemented by DELISH™ which provides cool season growth and high summer quality. In combination with Endo5 (BANQUET® II) and AR1 (DELISH™) endophytes and the addition of a high quality white clover such as Grasslands Kopu II, the following mix will be used by dairy farms throughout New Zealand that have a focus on high performance based on a persistent, high yielding and high quality pasture.

TETRAPLOID OPTIONS



- Endophyte options: Endo5, Without
- Excellent dry matter production
- Improved tiller density for even better persistence
- Bred for increased sugar and higher digestibility (ME)
- Heading date 18 days later than Nui



- Endophyte options: AR1, Without
- Excellent summer forage quality (low aftermath heading)
- High dry matter production throughout the lactation period
- Heading date 9 days later than Nui

DIPLOID OPTION



- Endophyte option: AR1
- High dry matter production, strong cool season growth
- Late flowering and low aftermath heading
- Very high tiller density
- Improved sugar (soluble carbohydrate) levels
- Heading date 21 days later than Nui

HIGH PERFORMANCE SEED MIX OPTION FOR ALL YEAR ROUND QUALITY AND YIELD

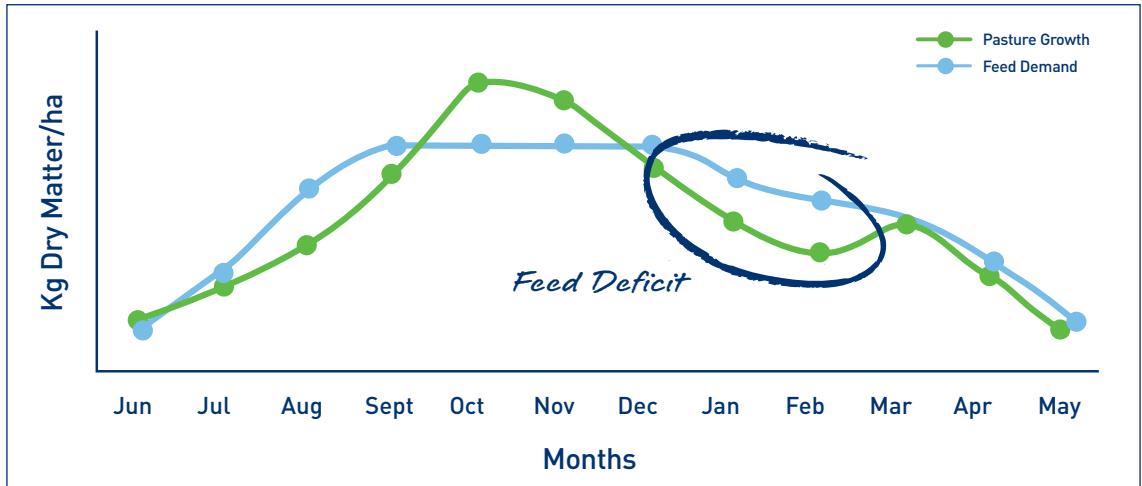
BANQUET® II tetraploid long rotation ryegrass	18 kg/ha
DELISH™ tetraploid short rotation ryegrass	7 kg/ha
Grasslands Kopu II white clover SUPERSTRIKE®	4 kg/ha
Grasslands Puna II chicory can be added	2 kg/ha

Note: Mixes may vary depending on the region and local experience.

Note:

- For which endophyte option to select refer to page 12.
- For which seed treatment option to use see page 13.
- A pasture renewal programme like the Programmed Approach™ which removes existing pasture and/or weeds, and insect pests is recommended prior to sowing any new pasture.

HIGH PERFORMANCE SUMMER/AUTUMN QUALITY OPTIONS



A late to very late flowering pasture mix will fill the late summer early autumn feed gap and maintain high feed quality. This is important to ensure milksolids production following the peak does not drop off as rapidly when compared to more traditional pasture mixes. The following mix has been developed utilising tetraploid ryegrass options that in association with novel endophytes and quality white clovers such as Grasslands Kopu II or Bounty will not only produce high quality dry matter in the key summer lactation period but also be persistent long term.



- Endophyte option: Endo5
- Exceptional tiller density for even better persistence
- Exceptional feed quality especially in summer
- Heading date 25 days later than Nui



- Endophyte options: AR1, Without
- Excellent summer forage quality (low aftermath heading)
- High dry matter production throughout the lactation period
- Heading date 9 days later than Nui

HIGH PERFORMANCE SEED MIX OPTION FOR SUMMER/AUTUMN QUALITY

Quartet II tetraploid perennial ryegrass	18 kg/ha
DELISH™ tetraploid short rotation ryegrass	7 kg/ha
Grasslands Kopu II white clover SUPERSTRIKE®	2 kg/ha
Grasslands Bounty white clover SUPERSTRIKE®	2 kg/ha
Grasslands Puna II chicory can be added	2 kg/ha

Note: Mixes may vary depending on the region and local experience.

Note:

- For which endophyte option to select refer to page 12.
- For which seed treatment option to use see page 13.

- A pasture renewal programme like the Programmed Approach™ which removes existing pasture and/or weeds, and insect pests is recommended prior to sowing any new pasture.

PGG WRIGHTSON SEEDS – INDUSTRY INVOLVEMENT

Southland Demonstration Farm – Wallacetown, Invercargill

DELISH tetraploid short rotation ryegrass is playing an important role in the re-grassing of the Southland Demonstration Farm at Wallacetown, Invercargill.

The 295 hectare farm milks 750 cows, with most cows wintered on.

A key aim on the farm is to boost milksolids by increasing the amount and quality of dry matter grown for milking cows.

Regrassing starts with direct drilling of DELISH in autumn, to provide a bulk of feed through the following season and to control broadleaf weeds.

Following a winter crop of swedes or kale, a BANQUET II (tetraploid long rotation ryegrass) / DELISH combination is sown, providing a long-term, high quality all year round pasture mix.

“Expectations are high for the demo farm but the team are confident that the pasture renewal programme can deliver significant increases in milk production per cow and per hectare. DELISH is an integral part of this,” said Wayne Nichol from PGG Wrightson Seeds.



Dairy shed at Southland Demonstration Farm



DELISH™ pasture, an integral part of the Southland Demonstration Farm.



Photo from the Southland Demonstration Farm illustrates the challenge of forcing cows to graze to low residuals on old pasture (left) compared to the well grazed DELISH™ (right).

SHORT TERM PASTURE

HIGH PERFORMANCE RENOVATING AND HIGH QUALITY SILAGE OPTIONS

On many dairy farms there is an opportunity to sow ryegrasses that can be used as a specialist short term mix either for silage, to produce a bulk of high quality feed to the milking platform or simply used to repair damaged pastures as a result of pugging, pulling, overgrazing etc. FEAST™ II, DELISH™, Maverick GII and WINTER STAR™ II are excellent ryegrass options that are ideally suited to these situations, due to their quick establishment and the ability to produce high quality feed with excellent yields. Grasslands Kopu II and Bounty white clovers have very high stolon density for their leaf size which will lift pasture quality and persistence. These clovers can be under-sown.

Maverick GII SHORT ROTATION RYEGRASS *performance bred™*

- Endophyte option: Without
- Improved annual dry matter yields
- Improved summer quality (aftermath heading further reduced)
- Improved disease resistance and persistence
- Heading date 17 days later than Nui

Delish™ TETRAPLOID SHORT ROTATION RYEGRASS *performance bred™*

- Endophyte options: AR1, Without
- Excellent summer forage quality (low aftermath heading)
- High dry matter production throughout the lactation period
- Heading date 9 days later than Nui

Feast II™ TETRAPLOID ITALIAN RYEGRASS *performance bred™*

- Endophyte option: Without
- Excellent dry matter yield and ideal for high quality silage
- Best summer quality of all high yielding italian ryegrasses
- Superior disease resistance and enhanced persistence
- Heading date 17 days later than Nui

Winter Star II™ TETRAPLOID ANNUAL RYEGRASS **NEW PRODUCT** *performance bred™*

- Endophyte option: Without
- High yielding tetraploid annual ryegrass
- Autumn sow for high yields of quality autumn, winter and spring feed
- Use for quick, early feed, suitable for silage and grazing livestock
- Fast establishment, making it ideal for short-term renovation (under-sowing) of existing pasture
- Improved late season production and quality
- Heading date 9 days later than Nui



Gordon Storer – Inangahua, West Coast



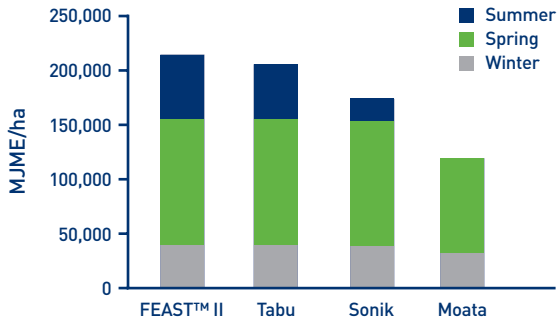
West Coast dairy farmers Gordon & Rebecca Storer run a total of 1100 cows on two blocks near Inangahua Junction. The cows are split into two herds and run on separate farms. The larger farm is still settling after extensive humping and hollowing on 100 hectares.

Gordon says that even on the newer conversion, Maverick GII's performance has been exceptional. "The growth rate is fantastic; we've found in winter it's good for a 30-day rotation, but when the temperature gets above 10 degrees Maverick GII is good for a 16 day round."

He lets the cows graze paddocks down to 1500kg and puts them back in when cover is back to 2800-3000kg. Gordon says the Maverick GII was hardy enough to establish itself quickly on recently developed paddocks: "Once it was up it was away. We were grazing calves on it after 30 days and the cows were on it after 55 days."

Pasture Quality

Annual and seasonal metabolisable energy per hectare (MJME/ha) of four italian ryegrasses



Data collected from a replicated grazing trial sown autumn 2005 at Gordonton, Waikato. Dry matter measurements were made prior to each grazing with a pasture probe. Samples for nutritive value were collected at the same time and analysed at Lincoln University by NIRS.



HIGH PERFORMANCE SEED MIX OPTIONS FOR RENOVATING AND HIGH QUALITY SILAGE

Renovating (Under-sowing) mix

FEAST™ II tetraploid italian ryegrass SUPERSTRIKE®	15-18 kg/ha
Or	
Maverick GII diploid short rotation ryegrass SUPERSTRIKE®	12-15 kg/ha

Short rotation quality silage mix

DELISH™ tetraploid short rotation ryegrass	22 kg/ha
Grasslands Kopu II white clover SUPERSTRIKE®	4 kg/ha
Or	
Maverick GII diploid short rotation ryegrass	20 kg/ha
Grasslands Kopu II white clover SUPERSTRIKE®	4 kg/ha

Note: Mixes may vary depending on the region and local experience.

Note:









- For which endophyte option to select refer to page 12.
- For which seed treatment option to use see page 13.
- A pasture renewal programme like the Programmed Approach™ which removes existing pasture and/or weeds, and insect pests is recommended prior to sowing any new pasture.



ENDOPHYTE OPTIONS

Endophytes are fungi found in many grass species. They are important as they can enhance the yield and persistence of their grass hosts. Choosing the appropriate endophyte for your farm will ensure better performance from your new pasture.

The endophyte decision is often a compromise as the safest endophytes for the animals do not offer the best insect protection (long term persistence and productivity). The table below shows the endophyte options available in cultivars in this book and what they protect against.

	Stem Weevil	Porina	Mealy Bug	Root Aphid	Adult Black Beetle	Grass Grub
						
	R	R*	R	R	R	NP
Endo5	R	NP	R	MP**	R	NP
	R	NP	R	NP	MR	NP
Without	NP	NP	NP	NP	NP	NP
R = Resistant MR = Moderate Resistance MP = Moderate Protection NP = No Protection						

*Early field trial results have confirmed laboratory evidence of resistance of ryegrass with AR37 to Porina.

NOTE: In pastures with AR37 ryegrass, Porina can be present and feed on other pasture mix components.

**Data provisional.

RECOMMENDED USE FOR VARIOUS ENDOPHYTES



AR37 provides greater insect control than any other commercially available endophyte (see table above). Although AR37 does not produce lolitrem B it can cause ryegrass staggers. Trials have shown that on average the frequency, duration and severity of ryegrass staggers is less than for standard endophyte. However on occasions, sheep (and potentially other animals) grazing AR37 ryegrass may be severely affected for short periods. To date no ryegrass staggers have been reported on dairy cows grazing AR37 ryegrass. Due to the fact that no trial work has been undertaken on deer and horses, pastures with AR37 are not currently recommended for these classes of livestock.

Endo5

Endo5 endophyte (as with AR1) contains no lolitrem B, but provides good control of Black Beetle (see table above). Endo5 pastures should persist better than AR1 pastures in areas with Black Beetle. (*Endo5 contains some ergovaline in the base of the plant for insect protection*).



AR1 provides a safer pasture with excellent animal performance while providing a moderate range of insect protection (see table above). Care is needed in areas with high Black Beetle numbers (Northern North Island) as AR1 only gives moderate resistance to this pest and no control of Root Aphid.

SE

With the introduction of novel endophytes, this standard endophyte (SE) is now rarely used. Stock grazing these pastures may suffer from ryegrass staggers and reduced production during the warm part of the year.

Without

In areas with cooler summers and good rainfall or irrigation, cultivars without endophyte, or with low levels of standard endophyte can be used (Westland, Southland, parts of Otago and some irrigated land in Canterbury). Such pastures are animal safe, and will give very good animal performance.

SEED TREATMENT OPTIONS

Seed treatment can play a key role in successful pasture establishment. Protecting emerging seedlings helps ensure plant establishment is maximised and the investment in new pasture seed is protected.

Seed treatment products can include insecticides, fungicides and biological additives in close proximity to the seed, providing cost effective and environmentally sustainable protection and enhancement for establishing plants.

With over 40 years experience in seed treatment, PGG Wrightson Seeds provide a range of leading seed treatment products for the New Zealand forage seed market.

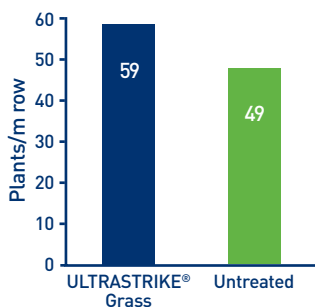
ULTRASTRIKE® Grass Seed Treatment

ULTRASTRIKE® Grass provides the most comprehensive protection in a grass seed treatment, it contains:

- Systemic Insecticide – registered for protection against three of New Zealand’s major ryegrass pests, Grass Grub, Argentine Stem Weevil, and Black Beetle during the establishment period
- Fungicide – effective against the “damping off” diseases (*Pythium and Fusarium*)
- Bird Repellent – for any situation where bird theft is a problem

Grass Grub Protection

The following trial highlights the significant increase in the number of surviving plants of ULTRASTRIKE® treated grass versus untreated grass while under Grass Grub pressure.



Trial conducted in Mid-Canterbury using a perennial ryegrass. Sown 13 May 2005 with plant numbers assessed on 19 July 2005.

ULTRASTRIKE® Grass protects grass seedlings against these pests:



Grass Grub



Argentine Stem Weevil (ASW)



Adult Black Beetle

SUPERSTRIKE® and ULTRASTRIKE® are registered trademarks of PGG Wrightson Seeds Limited.

SUPERSTRIKE® Grass Seed Treatment

SUPERSTRIKE® Grass is a multi-spectrum seed treatment, it contains:

- Systemic Insecticide – registered for protection against Argentine Stem Weevil and Black Beetle
- Fungicide – effective against the “damping off” diseases (*Pythium and Fusarium*)
- Bird Repellent – for any situation where bird theft is a problem

SUPERSTRIKE® Grass seed treatment is considered ‘best practice’ in no-tillage or under-sowing programmes where the risk from insect and disease pressure can significantly limit successful seed establishment. SUPERSTRIKE® Grass seed treatment should be used in all situations where Black Beetle is considered a risk to plant establishment.



Comparison between SUPERSTRIKE® treated grass (left) and untreated grass (right) under Argentine Stem Weevil pressure.

SUPERSTRIKE® Clover Seed Treatment

SUPERSTRIKE® Clover improves the performance of clover seedlings, it contains:

- Nematicide – to protect seedlings from soil inhabiting clover root nematodes
- Rhizobia – contains new strains of nitrogen fixing bacteria
- Molybdenum – an essential trace element for seedling establishment and root nodulation
- Lime for localised pH correction

PGG WRIGHTSON SEEDS PASTURE OPTIONS

CATEGORY	SEASONAL ACTIVITY					NUTRITIVE VALUE	ENDOPHYTE OPTIONS	HEADING DATE	LOW AFTERMATH HEADING	PAGE FOR MORE INFO
	WINTER	SPRING	SUMMER	AUTUMN						
Ryegrass Options										
Diploid Ryegrass Options										
Maverick Gill	Short Rotation	****	*****	****	****	Very Good	Without	+17	Yes	6, 10
EXTREME™	Perennial	***	*****	*****	*****	Very Good	AR37, AR1, Without	0	Yes	6
EXPO™	Perennial	***	**	****	****	Very Good	AR1	+21	Yes	7
Tetraploid Ryegrass Options										
WINTER STAR™ II	Annual	*****	***	*	***	Good	Without	+9	No	10
FEAST™ II	Italian	*****	****	***	****	Very Good	Without	+17	Yes	10
DELISH™	Short Rotation	****	*****	****	****	Excellent	AR1, Without	+9	Yes	7, 8, 10
BANQUET® II	Long Rotation	***	****	*****	****	Excellent	Endo5, Without	+18	Yes	7
Quartet II	Perennial	***	***	****	****	Excellent	Endo5	+25	Yes	8
Clover Options										
White Clover										
Grasslands Kopu II	Large Leaf	***	****	*****	****	Excellent				4
Grasslands Bounty	Medium Leaf	**	****	*****	****	Excellent				4
Chicory										
Grasslands Puna II		*	****	*****	**	Excellent				4

Note: Seasonal activity scored out of five (* = poor, ***** = very good).

• Ryegrass endophyte requirements should be discussed with a consultant or seed retailer (see page 12).

• Grasslands Puna II chicory and/or red clover can be added to mixes for dairy cows.

1 Increasing Persistence.

2 Increasing Winter Activity.

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For more information on pasture cultivars or the information contained within this brochure, contact your local seed retailer, talk to one of our representatives above or phone 0800 805 505.

www.pggwrightsonseeds.com

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NOTES:

RECOMMENDATION ORDER FORM: TO BE COMPLETED IN CONSULTATION WITH YOUR LOCAL SEED RETAILER

Paddock ID	Ha	Variety	Sowing Rate	Agronomic Recommendation prior to sowing
TOTAL				

Name: _____

Contact Phone No: _____

Address: _____

Fax No: _____

E-mail: _____



PGG Wrightson Seeds have joined Priority Partnership® as its newest member from 01 February 2009. Priority Partnership® is a rewards programme that entitles its members to a number of exclusive benefits including purchase incentives on selected PGG Wrightson Seeds products, information on new products, technology and services and special membership offers and promotions. Priority Partnership is a registered trademark of Nufarm Ltd.