

FARM SOURCE PASTURE OPTIONS GUIDE

2024





Great New Zealand Dairy starts with the right inputs, and that's where your local Farm Source team comes in.

Your Farm Source TSR is available to work with you on your feed planning, whether it's paddock selection, seed variant, drilling methods, fertilizer use or ag-chem requirements.

Our TSR's are on-farm year round building their knowledge, working with farmers like yourself, learning from our trusted industry partners, and training on the latest research and scientific findings. As part of our Co-operative, they can also use your Farm Insights Report and Fonterra best-practice information to guide profitable and sustainable outcomes for your farming business.

CALL YOUR LOCAL TSR TODAY

- Certified Pasture Seed
- Dairy Focused Feed Planning
- Local Area Knowledge

No TSR? call 0800 731 266 and we can help with that.

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IDENTIFYING PASTURE FOR RENEWAL

The best paddock(s) to renew are the poorest producers as these have the potential for greatest improvement. Highest producing paddocks on a farm indicate the property's overall potential.

For example, where the yield can be increased by 2t DM/ha the return is around 130kg MS/ha. The return will be greater if the extra growth occurs at a time of the season when animal demand exceeds pasture growth.

Use grazing and yield records to identify your best and worst paddocks. The more measures and assessments you have to compare the better (and easier) the decision will be.

If records are unavailable use the Pasture Condition Score Tool on the next page.

Once you have scored your paddocks and know which need re-grassing, your TSR can help you to work out why these paddocks are struggling. Introducing new plants will not increase production if you do not resolve the underlying causes of low pasture production – treat the cause and not the symptom.



EXAMPLE OF RECORDING GRAZINGS

Paddock	Grazing Days in each Paddock	Plus equivalent days of silage made	Total grazing days per paddock*
A	11	2	13.0
B	8	2	10.0
C	7	0	7.0

*providing paddocks are of similar size and managed similarly.



Any weeds in your pasture are stealing fertility, moisture and valuable space that should be growing quality pasture. Your local TSR can help make plans to avoid getting to this point or fix any issues which may exist.

PASTURE CONDITION SCORING TOOL

The Pasture Condition Score Tool helps determine what action to take to improve your pasture depending on its condition.

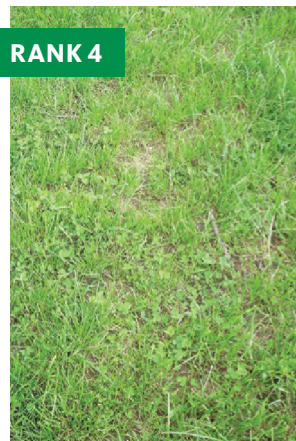
Assess each paddock on the farm and give a score from 1 to 5 using the photos and descriptions below. Consider the suggested actions to develop an action plan for each paddock.



RANK 5

Description: Whole paddock has dense sward of desired grasses and clovers.

Suggested Actions: No action required, would be happy if the whole farm was in this state.



RANK 4

Description: Parts of the paddock shows signs of low level damage, less vigorous grasses and some weeds.

Suggested Actions: Check fertility. Apply N (nitrogen) to encourage tillering. Paddock probably OK for coming season.



RANK 3

Description: Majority of paddock has low level damage, some weeds, and less vigorous grasses.

Suggested Actions: Apply N fertiliser. Undersow pasture with perennial ryegrass or longer lasting hybrid ryegrass containing appropriate endophyte to thicken the ryegrass content of the pasture, and so suppress weeds.

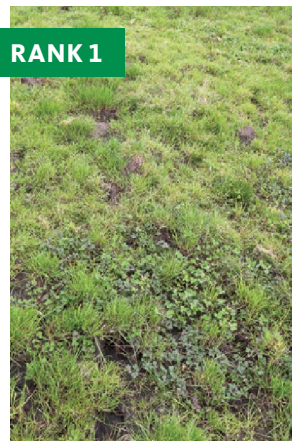


RANK 2

Description: Parts of the paddock have severe damage, a lot of weeds and bare ground.

Suggested Actions: Either;

- Sow into an annual rye grass and crop this coming spring, or;
- Undersow with Italian ryegrass in autumn, and plan to renew in following 6-12 months.



RANK 1

Description: Entire paddock severely damaged.

Suggested Actions: Sow into an annual rye grass and crop in spring.

FORAGE VALUE INDEX (FVI) OVERVIEW

DairyNZ[®]
Forage Value Index



The DairyNZ Forage Value Index (FVI) is an independent, profit-based index that compares short-term and perennial ryegrass cultivars. The tool allows farmers to make more informed, confident, and profitable decisions when choosing ryegrass cultivars for their pasture renewal programme.

The FVI values the amount and quality of the feed grown from different ryegrass cultivars in a seasonal supply dairy farm system across four different regions of New Zealand.

Three different categories are used, “Winter feed” which compares ryegrasses from autumn sowing through to spring, “12 month pasture” which looks at performance from an autumn to autumn sowing, and “Perennial ryegrass” for permanent pasture sowings.

The perennial ryegrass FVI initially used only seasonal dry matter (DM) yield from three-year National Forage Variety Trials, but these results now include seasonal metabolisable energy (ME) content and some persistence traits. Consequently, farmers can select their top perennial ryegrass cultivars based on seasonal DM, seasonal ME and persistence combined.

The overall FVI calculated for each cultivar is converted into a star rating to represent its rank in the FVI. Results are presented using a 1-to-5 star rating in the Cultivar Selector Tool. Top cultivars receive 5 stars and the bottom cultivars receive 1 star.

The FVI will steadily strengthen over time as more research is carried out to ensure more trait and cultivar-specific data are included.

FIND OUT MORE

For more information on the FVI and Cultivar Selector Tool visit: dairynz.co.nz/about-fvi/

CERTIFIED SEED

BARENBRUG TO CONFIRM COPY



PASTURE & CLOVER SEED QUICK REFERENCE

ANNUALS | 6-9 Months

Annuals are a winter active 6-8 month option. They are highly valued for their winter and early spring production. Often planted prior to cropping or between crops. They typically establish very quickly so can be ready for their 1st grazing at 6 weeks. Be aware of nitrate poisoning.

NAME	RYEGRASS TYPE	VENDOR	HEADING DATE
Hogan	Tetraploid	Barenbrug	+16
Winter Star II	Tetraploid	PGG Wrightson	+9
Tama	Tetraploid	Common	+14

ITALIAN | 12 Months Plus

Italians are similar in establishment and winter growth as an annual but will last from 18 months or longer with good conditions. Excellent to use for undersowing or if you're undecided on cropping.

NAME	RYEGRASS TYPE	VENDOR	HEADING DATE
Tabu+	Diploid	Barenbrug	+11
Manta AR37	Diploid Italian	Agricom	+15
Lush AR37	Tetraploid	PGG Wrightson	+12

HYBRID | Long Rotation 2-5 Years

Hybrids have perennial and Italian parentage and typically last 3 years, longer in good conditions. Ideal for undersowing or a “crop” of grass. Better winter growth and faster establishment than perennials but more persistent than an Italian. Advantage of endophyte too!

NAME	RYEGRASS TYPE	VENDOR	HEADING DATE	PERSISTENCE
Forge NEA	Tetraploid	Barenbrug	+11	3-5 years
Shogun NEA12	Tetraploid	Barenbrug	+13	2-3 years
Mohaka AR37	Tetraploid	Agricom	+20	2-4 years

PERENNIALS

Pasture packs come with mixture of grass seed and clover. Most pasture packs are Diploid ryegrass so typically planted at a 25kg bag per ha. Pasture packs with Tetraploid ryegrass are sown at a higher rate. For undersowing Diploid ryegrass sow at 10-15kg/ha, Tetraploids at 18-25kg/ha.

NAME	RYEGRASS TYPE	VENDOR	HEADING DATE	PASTURE PACK
Array NEA2	Diploid	Barenbrug	+23	
Maxsyn NEA4	Diploid	Barenbrug	+8	Purple, Orange
Governor AR37 or AR1	Diploid	Barenbrug	+8	Gold II
4front NEA2	Tetraploid	Barenbrug	+15	Yellow, Orange
Legion AR1 & AR37	Diploid	Agricom	+12-14	Teal
One50 AR37, AR1 & LE	Diploid	Agricom	+20	Burgundy
Reason AR37	Diploid	Agricom	+3	
Three ⁶⁰ AR37	Diploid	Agricom	+20	
Base AR37 & AR1	Tetraploid	PGG Wrightson	+22	
Platform AR37& AR1	Diploid	PGG Wrightson	+12	Blue

CLOVERS

White clovers are typically sown at around 4kg/ha in a pasture mix. Usually with a 2kg:2kg mix of large and medium leaved clovers.

Red clovers are typically sown at 4-6kg/ha.

NAME	VENDOR	NAME	VENDOR
Kotuku (Large Leaf Type)	Barenbrug	Mainstay	Agricom
Ruru (Medium Leaf Type)	Barenbrug	Tribute	Agricom
Legacy (Large Leaf Type)	PGG Wrightsons	Relish Red Clover	Agricom
Quartz (Medium Leaf Type)	PGG Wrightsons	Morrow Red Clover	Barenbrug
Brace (Large Leaf Type)	Agricom		



PASTURE GLOSSARY

RYEGRASS VARIETIES

- **Annual Ryegrass**
Similar to an Italian ryegrass with fast establishment, good winter feed growth and value which generally persists for 6-9 months.
- **Italian Ryegrass**
Italian ryegrasses are natural bi-annuals, they are characterised by a strong establishment and last 12-18 months or longer depending on conditions. Generally more persistent than annual ryegrass.
- **Hybrid Ryegrass**
Generally derived from crossing perennial ryegrass and Italian ryegrass. Good feed quality and winter growth. Typically persist from 2-5 years, depending on conditions, grass genetics and endophyte.
- **Perennial Ryegrass**
Excellent base for permanent pasture mix, with good stock palatability and establishes well. The most commonly used permanent pasture grass in New Zealand.

DIPLOID VS. TETRAPLOID

The main difference between diploid and tetraploid ryegrass is their palatability and feed value (ME), with tetraploids easier to graze with a higher pasture quality than a similarly managed diploid ryegrass.

Tetraploid ryegrasses are naturally higher in sugars which makes them more palatable to livestock and improves intake and production.

Tetraploids have four sets of chromosomes per cell, with diploid ryegrasses having only two sets of chromosomes per cell.

Diploids combine yield and robustness. They have more tillers per plant and due to the lower water content per cell have a higher dry matter per kg of feed. Most ryegrass and red clovers cultivars are diploid.

ENDOPHYTE TYPES

An endophyte is a fungus found in many grass species including ryegrass. It provides the plant with protection from insects. There are several types of endophytes available, understanding which is more suitable for your farm system will help you to maximise productivity.

SEED TREATMENT

Seed treatment is the process of coating individual seeds with a mix of chemicals to protect and help ensure good establishment. The coatings contain insecticide and fungicide to help protect young plants from insect attack and disease and will last approximately six weeks post-sowing. Seed treatment gives good control of low to moderate insect pressure.

Treated seed may not be suitable in all situations or a wider control programme may be required. For more information contact your local Farm Source TSR.

CUSTOM MIXING

Growing the right pasture, at the right time, in the quantities you need is all part of the equation.

We know it takes a great deal of hard work and planning – from your renewal programme and choice of seed, to dealing with a variety of weed types – and we're here to help.

Farm Source can custom mix seed for you using our access to all the seed varieties and expertise from leading seed production companies including Barenbrug, Agricom, PGG Wrightson Seeds and RAGT.

We'll work to ensure you get the pasture that meets your requirements. Your local TSR can visit to make a recommendation about your pasture options, taking into account the individual factors and environmental situation affecting your farm.

PASTURE PACKS

Alternatively, we've a range of ready made pasture packs available.

Each of our Farm Source Pasture Packs contain a specialised mix of seed to meet the variations in insect control, climate, soil type, paddock use and farm facilities to deliver the best possible results.

All seed in our Pasture Packs have been cool stored in facilities that exceed industry standards and have been tested to ensure high levels of active endophyte.

Read more on the following pages or contact your local TSR for more information and availability.

ECOTAIN® ENVIRONMENTAL PLANTAIN

Ecotain® environmental plantain significantly reduces nitrogen leaching without compromising production.

THE SCIENCE

Research has demonstrated that not all plantains (current cultivars or breeding lines) are capable of reducing nitrate leaching from the urine patch through the four aspects Ecotain can – dilute, reduce, delay and restrict. Work by Massey and Lincoln universities, along with Plant and Food Research and Agricom have shown that Ecotain increases the volume of cows' urine which dilutes the concentration of nitrogen, it reduces the total amount of nitrogen in animals' urine, it delays the process of turning ammonium into nitrate in the urine patch, and it restricts the accumulation of nitrate in Ecotain-growing soil. With the potential to reduce nitrogen leaching by up to 89% from the urine patch, Ecotain is an excellent mitigation tool.



Winter dormant plantain (left) with Ecotain® environmental plantain (right). Photo taken 28 June 2018.



Ecotain® environmental plantain.

AGRONOMICS

In addition to being a highly effective nitrogen leaching mitigation technology; Ecotain is an excellent forage, providing winter activity and drought tolerance, along with animal health performance benefits across virtually all high performing, pastoral based farm systems.

IMPLEMENTATION

The easiest way to get Ecotain on farm is to sow it with new perennial pastures. Pasture mixes that include Ecotain can be established the same way as ryegrass/white clover pastures, and the environmental effectiveness of new pastures is very high.

Undersowing via direct drilling or broadcasting into damaged and open pastures works well to extend the life of pastures as well as providing environmental benefits, and broadcasting Ecotain is a useful addition when applying fertiliser. When utilising this technique, it is important to remember that the success of broadcasting will be based on the openness of pasture.

Ecotain dominant stands, or Ecotain stands with clover are also effective implementation strategies. An Ecotain dominant stand provides high and consistent levels of Ecotain content and fits very well as a short rotation pasture or as a break crop in a pasture renovation programme (similar in use to Italian or hybrid pastures). Including clover is ideal for 2-3 year lactation feeding or an inter-crop restorative phase.

HYBRID RYEGRASS

Hybrid ryegrasses are bred from perennial ryegrass and Italian ryegrass to combine the best features of both parent species.

They range from types that resemble Italian ryegrass more (traditionally known as short-rotation ryegrasses), with high yields of larger-leaved forage, persisting from 2-4 years, to types almost as persistent as perennial ryegrass (traditionally called long-rotation ryegrass). Some cultivars may contain the same endophyte as described for perennial ryegrass.

Hybrid ryegrasses are frequently added to perennial pasture seed mixtures to provide increased winter production during the first few years and to boost animal performance in cooler regions. They are commonly sown in late summer/autumn to provide increased winter/early spring production.

SUGGESTED SOWING RATES:

Hybrid ryegrass are usually Tetraploids, with large seeds. Therefore a full sward would be planted at 30-35kg/ha. A Diploid would be planted at 20-30kg/ha. Hybrids are a great option to be undersown into perennial pastures at 13-18kg/ha for Tetraploids or 10-15kg/ha for Diploids.



ARRAY NEA2 NEW PERENNIAL RYEGRASS

Array NEA2 is the new superstar, bred for the good of both animals, and the environment.

Easy to eat

Array is the diploid perennial ryegrass hard-working cows have been hoping for. Upright, leafy and densely tillered, it's customised for easy eating and high intake. Animals will naturally eat more as a result, and have more time to relax, ruminate and produce meat or milk

Unbeaten yield

Nothing else yields more dry matter in the National Forage Variety Trials. And it's 5-Star in the DairyNZ Forage Value Index nationwide.

Great cool season growth

Array has the best cool season growth of any perennial ryegrass Barenbrug has bred. That helps fill the gap when feed is short and makes farms more resilient so they can adapt to shifting climatic patterns.

Very persistent

Array NEA2 has Barenbrug's highest ranking for pasture persistence. It's as good as Maxsyn NEA4.

Eats N for breakfast

In trials, Array has grown significantly more feed under low N conditions than other ryegrass cultivars.

What does this mean on a farm? First, more even pasture growth at times when soil nitrogen is deficient, something that happens on virtually every farm at some stage during the year. Second, a win for the environment, because this provides the potential to utilise nitrogen more efficiently.

 **BARENBRUG**

ARRAY PACK

CULTIVAR	TREATED/BARE
Array NEA2	TREATED
Kotuku White Clover	TREATED

DIVERSE PASTURE MIX

This mix is for farmers looking to sow a pasture with a diverse range of species, with different grasses, clovers and herbs.

BENEFITS

- It has the densely tillered and high yielding Maxsyn NEA4 perennial ryegrass along with the very persistent Rohan NEA2 spreading perennial ryegrass.
- Safin superfine cocksfoot, Bareno pasture brome and timothy provide diversity in stock diet, and good growth on the shoulders of the season.
- The top yielding Tabu+ increases DM yield through establishment and the first winter.
- The top performing white, red and annual clovers increase the feed quality, and provide extra nitrogen fixation. Annual clovers and Coolamon improve the spring clover content.
- The deep taproot of both Morrow red clover and 501 chicory increases forage production, and ME and protein in summer.
- Captain plantain supplies diet diversity for stock, and the environmental benefits of lower N footprint.

SOWING RATE

- 36kg/ha = 1.4 bags/ha.
- Available as treated or bare (untreated) seed.

MANAGEMENT TIPS

- With limited weed control options, more careful paddock choice is required to reduce the risk of perennial weeds becoming present.
- It is also important to have a well-prepared seed bed and weed control programme prior to sowing this.
- No specific differences from a standard mix, with regards to nutrient applications, however having a good base of soil nutrient status will aid with the performance of all the species.

DIVERSE PASTURE MIX

CULTIVAR	TREATED/BARE	KG/BAG
Maxsyn NEA4 Perennial Ryegrass	TREATED	5
Safin Superfine Cocksfoot	TREATED	3
Rohan NEA2 SPR Perennial Ryegrass	TREATED	2
Timothy	TREATED	1
Bareno Pasture Brome	BARE	3
Tabu + Italian Ryegrass	TREATED	2
Kotuku White Clover	TREATED	1
Ruru White Clover	TREATED	1
Morrow MS Red Clover	TREATED	3
Laser Persian Clover	TREATED	1
Coolamon Sub Clover	TREATED	1
501 Chicory	TREATED	1
Captain CSP Plantain	TREATED	1

SOWING GUIDE

SITUATION	SOWING RATE KG/HA
Drilling or broadcasting – cultivating seedbed	36kg
Direct drilling – Sprayed out pasture	36kg

CULTIVAR	KILOS PER	
	BAG	HA
Maxsyn NEA4 Perennial Ryegrass	5	6
Safin superfine cocksfoot	3	4
Rohan NEA2 SPR perennial ryegrass	2	2
Timothy pasture	1	1
Bareno pasture brome	3	4
Tabu+ Italian ryegrass	2	2
Kotuku white clover	1	1
Ruru white clover	1	1
Morrow MS red clover	3	4
Laser Persian clover	1	1
Coolamon sub clover	1	1
501 chicory	1	1
Captain CSP plantain	1	1
Total	25	36

FARM SOURCE PASTURE PACKS

Each of our Farm Source Pasture Packs contain a specialised mix of seed to meet the variations in insect control, climate, soil type, paddock use and farm facilities to deliver the best possible results.

All seed in our Pasture Packs have been cool stored in facilities that exceed industry standards and have been tested to ensure high levels of active endophyte.



YELLOW PACK

NEA2

RYEGRASS TYPE: Tetraploid Perennial

ENDOPHYTE OPTIONS: NEA2

SEED TREATMENT OPTIONS: Agricote Treated

HEADING DATE: Late +15 Days

4FRONT <small>(NEA2)</small> Perennial Ryegrass	TREATED	22kg
KOTUKU White Clover	TREATED	1kg
RURU White Clover	TREATED	2kg

SITUATION	SOWING RATE
Drilling or broadcasting — cultivating seedbed	30-35kg
Direct drilling — sprayed out pasture	30-35kg
Undersowing — into existing pasture	20-25kg

The Yellow pack suits farm systems targeting high animal performance providing high quality and high yield across all seasons.

- This pack contains the class-leading 4front, which is the unbeaten tetraploid perennial ryegrass in the Industry National Forage Variety Trials, and rated 5-stars cultivar in the DairyNZ Forage Value Index across all New Zealand regions.
- 4front has very high palatability and ME, so can increase animal intakes and performance.
- Grazed well it can improve your environmental outcomes, through reducing N leaching and GHG (greenhouse gas) production. Go to the Barenbrug New Zealand website for further information.
- It contains the NEA2 endophyte, for superior animal performance and great insect control.
- This pack contains the high performance white clover combination of Kotuku and Ruru. Kotuku is a large leaved clover with exceptional DM yield, and Ruru is a new medium leaved with excellent persistence and delivering extra summer yield and protein.

NOTE: Grass is also available as a straight line or for custom mixing if required.

ORANGE PACK

NEA4

NEA2

RYEGRASS TYPE: Tetraploid/Diploid Perennial Mix

ENDOPHYTE OPTIONS: NEA4 (Maxsyn), NEA2 (4front)

SEED TREATMENT OPTIONS: Agricote Treated

HEADING DATE: Late +15 Days (4front), +8 Days (Maxsyn)

MAXSYN <small>(NEA4)</small> Perennial Ryegrass	TREATED	9kg
4FRONT <small>(NEA2)</small> Perennial Ryegrass	TREATED	13kg
KOTUKU White Clover	TREATED	1kg
RURU White Clover	TREATED	2kg

SITUATION	SOWING RATE
Drilling or broadcasting — cultivating seedbed	29-32kg
Direct drilling — sprayed out pasture	29kg
Undersowing — into existing pasture	15-20kg

The Orange Pack is a unique combination of tetraploid and diploid perennial ryegrasses, providing a great balance of high palatability, density and persistence.

- Maxsyn and 4front have proven themselves as class leading performers for diploid and tetraploid perennial ryegrass respectively.
- 4front has very high palatability and ME so can increase animal intakes, animal performance and environmental outcomes. But straight tetraploids don't suit every farm, so we've added diploid Maxsyn to increase pasture density and robustness. For many this mix provides a near ideal balance of animal performance and long term yield.
- Maxsyn contains NEA4 endophyte, and 4front NEA2, both providing superior animal performance and good insect control.
- This pack contains the high performance white clover combination of Kotuku and Ruru. Kotuku is a large leaved clover with exceptional DM yield, and Ruru is a new medium leaved with excellent persistence and delivering extra summer yield and protein.

NOTE: Grass is also available as a straight line or for custom mixing if required.

PURPLE PACK


NEA4

RYEGRASS TYPE: Diploid Perennial

ENDOPHYTE OPTIONS: NEA4

SEED TREATMENT OPTIONS: Agricote Treated

HEADING DATE: Mid-Late +8 Days

MAXSYN  Perennial Ryegrass	TREATED	21kg
KOTUKU White Clover	TREATED	2kg
RURU White Clover	TREATED	2kg

SITUATION	SOWING RATE
Drilling or broadcasting – cultivating seedbed	25-30kg
Direct drilling – sprayed out pasture	25kg
Undersowing – into existing pasture	15-20kg

The Purple Pack is the next gen in pasture for high performance farm systems, delivering very strong persistence and superior growth, with an animal-safe endophyte.

- Maxsyn NEA4 sets a new level of DM yield, with its key strength in summer and autumn. Superior tillering through summer helps persistence, and improves autumn growth, while providing extra warm season feed when needed. Visually you can see the difference, with Maxsyn holding its green colour longer into hot summer conditions.
- Maxsyn is densely tillered and easier to graze in spring, encouraging the development of new daughter tillers for the coming season, again enhancing persistence and yield. NEA4 endophyte provides very good insect control, while being staggers-safe for dairy cows and cattle.
- The Purple Pack contains the high performance white clover combination of Kotuku and Ruru. Kotuku is a large leaved clover with exceptional DM yield, and Ruru is a new medium leaved with excellent persistence and delivering extra summer yield and protein.

BLUE PACK

AR37

RYEGRASS TYPE: Diploid Perennial

ENDOPHYTE OPTIONS: AR37

SEED TREATMENT OPTIONS: Agricote Treated

HEADING DATE: Late +12 Days

PLATFORM Perennial Ryegrass	TREATED	21kg
KOTUKU White Clover	TREATED	2kg
RURU White Clover	TREATED	2kg

SITUATION	SOWING RATE
Drilling or broadcasting – cultivating seedbed	25-30kg
Direct drilling – sprayed out pasture	25kg
Undersowing – into existing pasture	15-20kg

The Blue Pack suits farm systems desiring strong year round production with noted quality and persistence.

- Platform is a diploid perennial ryegrass, with high year round dry matter production and noted cool season activity.
- Platform's late heading date (12 days later than Nui) combined with a dense fine leaf structure and low aftermath seed head production produces quality feed to assist with the maintenance of peak milk production.
- A top performing cultivar in independent National Forage Variety Trials and DairyNZ Forage Value Index 4-Star status in the lower North Island.
- Platform contains AR37 providing protection from major pasture pest including Black Beetle, Porina, Argentine Stem Weevil larvae, Root Aphid and Pasture Mealy Bug.
- Bred from a combination of elite New Zealand genetics and North-west Spanish material that has undergone testing and selection to ensure adaptability across New Zealand.

NOTE: Grass is also available as a straight line or for custom mixing if required.

GOLD II PACK



RYEGRASS TYPE: Diploid Perennial

ENDOPHYTE OPTIONS: AR37

SEED TREATMENT OPTIONS: Agricote Treated or Bare

HEADING DATE: Late +8 Days

GOVERNOR Perennial Ryegrass	TREATED	21kg
KOTUKU White Clover	TREATED	2kg
RURU White Clover	TREATED	2kg

SITUATION	SOWING RATE
Drilling or broadcasting — cultivating seedbed	25-30kg
Direct drilling — sprayed out pasture	25kg
Undersowing — into existing pasture	15-20kg

The Gold II Pack has proven its performance across many farm systems, helping to provide year round yield and a robust, high feed value pasture.

- Includes Governor AR37 a fine leaved, dense and persistent perennial ryegrass that's proven to be a great all-round pasture, with good spring and autumn yield. It's fine dense habit can help in wet situations, giving more soil protection against treading damage.
- The Gold II pack has AR37 endophyte, so is particularly suited to areas affected by porina, although should not be considered a stand alone defence against porina.
- AR37 endophyte is not recommended for pasture grazed by deer or horses due to the risk of ryegrass staggers.
- This pack contains the high performance white clover combination of Kotuku and Ruru. Kotuku is a large leaved clover with exceptional DM yield, and Ruru is a new medium leaved with excellent persistence and delivering extra summer yield and protein.

NOTE: Grass is also available as a straight line or for custom mixing if required.

TEAL PACK



RYEGRASS TYPE: Perennial

ENDOPHYTE OPTIONS: AR37

SEED TREATMENT OPTIONS: Agricote Treated

HEADING DATE: Late +12-14 Days

LEGION Perennial Ryegrass	TREATED	21kg
KOTUKU White Clover	TREATED	2kg
RURU White Clover	TREATED	2kg

SITUATION	SOWING RATE
Drilling or broadcasting — cultivating seedbed	25-30kg
Direct drilling — sprayed out pasture	25kg
Undersowing — into existing pasture	15-20kg

The Teal Pack contains Legion AR37 which was bred solely from late heading perennial ryegrass plants that have been individually screened for persistence, rust tolerance and vigour in Canterbury, Palmerston North, Waikato and Northland.

- Legion has been in 6 completed National Forage Variety Trials and is in 9 on going yield trials. Legion is a very high performing perennial ryegrass that is well suited to dairy pastures and runoffs. It is highly palatable, particularly in mid-summer when other ryegrass varieties may begin to clump due to residual seedhead development.
- Legion is a highly vegetative variety, with a thick growth density while also being fast to establish making it well suited to undersowing programmes.
- Legion has consistently been one of the top yield performers all year round, no matter the region, taking out the top spot for Autumn yields in the National Forage Variety Trails.
- Legion has extremely low aftermath heading for a perennial ryegrass and very high crown rust tolerance.
- AR37 endophyte offers long-term, natural protection to porina and rootaphid. It also provides very good control of Argentine stem weevil larvae while not compromising milk production.

BURGUNDY PACK



RYEGRASS TYPE: Diploid Perennial

ENDOPHYTE OPTIONS: AR37

SEED TREATMENT OPTIONS: Treated

HEADING DATE: Late +20 Days

ONE50 Perennial Ryegrass	TREATED	21kg
KOTUKU White Clover	TREATED	2kg
RURU White Clover	TREATED	2kg

SITUATION	SOWING RATE
Drilling or broadcasting — cultivating seedbed	25-30kg
Direct drilling — sprayed out pasture	25kg
Undersowing — into existing pasture	15-20kg

The Burgundy Pack is suited to dairy farms, where yield advantages can be realised. One50 diploid perennial ryegrass provides excellent summer, autumn and winter production with year round quality and palatability.

- Due to its proven performance, ONE50 has been the most preferred perennial ryegrass by New Zealand farmers for the last six years.
- Highly productive perennial ryegrass with the ability to stay green under summer stress, as well as exhibiting high rust tolerance.
- AR37 endophyte offers the best long-term natural protection to porina and root aphid. It also provides very good control of Argentine stem weevil larvae while not compromising milk production.

NOTE: Grass is also available as a straight line or for custom mixing if required.



OTHER OPTIONS

COCKSFOOT

Cocksfoot (*Dactylis glomerata*) is most persistent perennial grass that tolerates summer dry conditions, moderate soil fertility and insect attack. It is used to enhance the resilience of permanent pastures in hot, dry areas. It also adds variety to the stock diet.

Cocksfoot is slow to establish compared to ryegrass, so is often sown as part of a ryegrass pasture mix at 3-6 kg/ha. It has lower digestibility than ryegrass, with limited winter growth but good summer growth.

NEW REDEFINE COCKSFOOT

We are pleased to offer this new cocksfoot, which is the ultimate mixer, making friends wherever it goes! It is significantly finer than any other cocksfoot, more compatible with other species in a pasture.



Old cocksfoot (top) can become low in crude protein and unpalatable. Redefine (below) is makes friends with legumes, so it's nicer to eat.



TALL FESCUE

Tall Fescue (*Festuca arundinacea*) suits some situations but not others. It is a perennial grass more tolerant of hot summers and poorly drained soils. It is sensitive to soil temperature so must be sown when soil temperatures are above 12°C. It is slower to establish than ryegrass, so it is very important to have a good weed free seedbed.

In NZ Tall Fescue is mainly sown in dry areas for its summer growth and good clover content, performing best on clay soils, where its deeper rooting ability can utilise more soil moisture than ryegrass. It cannot be sown with ryegrass, as the ryegrass is much faster to establish and will dominate the pasture.

Tall fescue needs to be grazed at the correct time in spring, more frequently than ryegrass, to prevent a loss of feed quality.

Best sown at 20-25kg/ha with suitable white clovers.

HOGAN

Hogan is the top performing annual in the industry NFVT trials and has fast establishment and regrowth from grazing making it an ideal 6-9 month option.

Hogan produces high DM yield and outyields 30+ year old Tama by over 1.2t DM/ha. The value of this extra cool season feed is \$480/ha*, for an extra seed cost of \$35-45/ha to sow Hogan.

A key part in breeding Hogan was rapid establishment to provide 'fast feed' in autumn, critical to dairy systems.

TABU+

Tabu+ is a 12-18 month pasture option and is rated as 5-star ryegrass sitting in the 'winter feed' category of the DairyNZ FVI nationwide.

It was bred to supersede the best selling Tabu, with significantly higher DM yield. It is nutritious, with explosive establishment speed and superior cool season growth.

*\$480/ha or 40c/kgDM value for establishment autumn-spring pasture in the DairyNZ FVI.

BEST PRACTICE PASTURE NUTRITION

NEW PASTURE

A healthy, high-producing pasture is an extremely valuable asset on both dairy and dry stock farms. Renewing old, run-out pastures (as outlined on page 5 – Pasture Condition Score) can deliver a significant economic benefit for farmers, provided that it is done carefully, so that the new pasture establishes well and goes on to deliver the anticipated production gains.

Ideally, the renewal programme will include an annual, winter active ryegrass followed by a summer crop, before the new permanent pasture is sown. This will help to control or eradicate pasture pests and weeds, creating a more favourable environment for the new pasture species. Sowing new pasture also provides an opportunity to select new cultivars of ryegrass and clover; contact your local Farm Source TSR for independent advice on the best cultivars for your farm.



BEFORE SOWING

If new pasture is to establish and persist, then any problems need to be addressed before sowing. Potential issues include compaction, poor soil condition, low soil fertility, pasture pests and weeds. Physical conditions such as poor drainage also need attention, otherwise they will continue to cause problems in the future. Soil fertility deficits also need to be corrected, so that the new pasture species will establish and thrive. Failure to address soil fertility will increase the likelihood of low-fertility pasture species dominating the paddock.

When to do a soil test: At least 6 months before sowing; if possible, 12 months before sowing.

Why: Pasture prefers a pH between 5.8 and 6.0. If soil pH needs adjusting, lime needs to be applied – it will take at least 6 months to have an effect on soil pH. Soil testing early also allows sufficient time to correct the nutrient levels with a suitable base fertiliser.

How: Sample using a 75mm soil probe. Soil test a transect (line) across the paddock. Avoid areas that are not typical of the paddock, e.g. fence lines, stock camps and urine patches. Samples can be collected in either autumn or spring. Do not sample within 3 months of applying fertiliser or lime, or when soil is saturated.

PRODUCTS

Lime: Choose a good quality ag-lime. As a rule of thumb it takes about 1 tonne of lime to raise the soil by +0.1pH.

Base fertiliser: The actual product needed and the rate to be applied will depend on soil test results. However, products in the Ballance SuperPlus range are generally suitable, as they supply most of the nutrients needed to support pasture growth. Alternatively, products in the Ballance PasturemagPlus range could be considered.

AT SOWING

Use a starter fertiliser at, or immediately prior, to sowing

Why: Like all crops, grasses and clovers need an adequate supply of nutrients in order to grow well.

If these nutrients, particularly P and N, are placed close to the seed, then seedlings will establish strongly and rapidly. Good growth during the early part of the pasture's lifecycle plays a significant role in ensuring that it meets its potential. If the renewal programme has included a summer crop, then this will have removed nutrients from the soil, so including a starter fertiliser is even more important.

How: Drill with the seed (in a separate box). Make sure there is no direct contact with the seed.

Alternatively, broadcast fertiliser then incorporate into the soil just before sowing. If broadcasting, a higher application rate will be required.

PRODUCTS

Ballance DAP: Often used as a starter fertiliser, as it supplies both N and P, two nutrients most critical to early plant growth. If P and N are the only nutrients required then DAP could be used at rates of around 150kg/ha.

Ballance Cropzeal 16N: If a broad spectrum of nutrients is required, consider Cropzeal 16N. This will supply K and S, along with P and N. It is a good option if soil Olsen P is above 15. Typical application rates for Cropzeal 16N are between 250-350kg/ha.

POST EMERGENCE

When to apply post-emergence Nitrogen: The first application of nitrogen should go on following the first grazing, which is typically when the pasture is 5-6 weeks old. Subsequent applications of nitrogen should be made after each grazing.

Why: Light applications of nitrogen will help ryegrass produce more tillers, which helps with persistence. Nitrogen also helps to speed up leaf expansion, allowing plants to compete with weeds. New pasture particularly benefits from nitrogen applications during the first 18 months, as it takes this long for clover to become sufficiently established to fix appreciable amounts of atmospheric nitrogen.

How: Nitrogen applications need to be made on a regular basis for the first 12-18 months of the new pasture's life. They should be complemented by good grazing practices, to ensure the development and persistence of a strong sward. Nitrogen should be applied when plants are actively growing; applications should not be made if conditions are too cold or wet to support pasture growth. Rates of nitrogen used should be relatively light – in the order of 25-30kg N/ha.

PRODUCTS

Ballance SustaiN: SustaiN is always recommended, unless you are expecting 10mm of rain within 8 hours of application. SustaiN is uniquely formulated to reduce the amount of N lost by volatilisation by 50%, which occurs without sufficient rainfall. This means that more N is retained in the soil, where it can be used by pasture. Apply this product to new pasture at a rate of 55-65kg/ha.

Ballance Nrich Urea: If 5-10 mm of rain is sure to fall within 8 hours of application, then Nrich Urea may be used. The rainfall is required to wash the urea into the soil, where it is less susceptible to the effects of volatilisation. Nrich Urea should be applied to new pasture at a rate of 55-65kg/ha.

MAXIMISING NEW PASTURES FOR PERFORMANCE & PRODUCTION

There are many ways to set up a new pasture, ranging from a planned, detailed Programmed Approach™, to an autumn 'Grass to Grass' scenario. Whichever your preferred method, too often a crucial last hurdle in the pasture renewal process is missed, that being a post emergence spray to control weeds.

High weed populations can severely limit new pasture performance and its persistence. Some weeds can aggressively compete for space, nutrients and moisture and can hamper your end goal of a productive, persistent pasture to feed stock well.

New pasture herbicides programmes don't need to be overly complicated. They generally fit into one of three scenarios;



1

PRE-SOW SPRAY OUT

Start strong with a clean seed bed. Remove all potential competition for your new pasture varieties.

2

PRE-GRAZE SPRAY

First chance to remove weeds while they are small seedlings with a clover safe option.

3

POST-GRAZE SPRAY

Last chance to remove weeds while they are small with a clover safe option.

PRE-SOW SPRAY OUT

In a spray-outs situation, it's important to make sure what you're spraying has enough leaf to achieve a strong kill.

CRUCIAL® and Pulse® Penetrant form the foundation of most spray outs. In some situations a companion herbicide such as Nail® 600EC can improve the control of hard to kill broadleaf weeds. Where drift is of primary concern Amigo® can be used in place of Pulse to minimize off target drift.



CRUCIAL

Product Type: Advanced Technology Herbicide
Active Ingredient: 600g/L Glyphosate
Formulation: Soluble Concentrate

- Excellent Efficacy – execute with precision, even under challenging conditions.
- Outstanding Compatibility – tried and tested with the widest range of tank mix partners.
- Fast Knockdown, Quick Turnaround: 1 day for annual and 3 days for perennial weeds.
- Rainfast in 15 minutes with Pulse Penetrant.
- Exceptional Viscosity – fast pouring in all climatic conditions.
- Anti-foam Technology.



NAIL 600EC

Product Type: Herbicide
Active Ingredient: 600g/L Carfentrazone-Ethyl
Formulation: Emulsifiable Concentrate

- Zero grazing withholding period.
- No plant back restrictions.
- Rapid absorption and fast brownout.
- Compatible with CRUCIAL and other knockdown herbicides.
- Rainfast in 1 hour.



PULSE PENETRANT

Product Type: Adjuvant
Active Ingredient: Organo-Silicone Penetrant
Formulation: Liquid

- Improves the adhesion, wetting and penetration of herbicides.
- Provides a 15 minute rainfast guarantee when used with CRUCIAL.
- Increases the amount of herbicide entering the plant.



AMIGO

Product Type: Adjuvant
Active Ingredient: Phosphatidylcholine, methyl esters of fatty acids and alcohol ethoxylate

- Reduces driftable fines.
- Provides more uniform droplet size.
- Increases droplet retention.
- Excellent anti-foam system.

PRE-GRAZE SPRAY

In a pre-graze spray situation, it's important that weeds are addressed early, while they are **SMALL** seedlings with a product(s) that is safe over small establishing clovers.

This is often with products such as **Tribal® Gold**, **Thistrol® Plus** and/or **Valdo® 800WG**, with **Bonza Gold®** oil once clover seedlings have at least two 'true' (trifoliate) leaves and pastures have at least 70% ground cover.



TRIBAL GOLD

Product Type: Herbicide
Active Ingredient: 300g/L MCPB, 20g/L MCPA and 10g/L Flumetsulam
Formulation: Soluble Concentrate

- Controls of a wide spectrum of broadleaf weeds.
- Clover and grass friendly – allows early weed control.
- Convenient all in one pre-mix, liquid formulation that is easy to measure and use.
- 2 hour rainfast period.
- Always add **Bonza Gold**.



VALDO 800WG

Product Type: Herbicide
Active Ingredient: 800g/kg Flumetsulam
Formulation: Water Dispersible Granule

- Increases weed spectrum – certain weeds which are poorly controlled by phenoxy herbicides.
- Suitable for use with **Thistrol Plus** or **Baton 800WSG**.
- Highly cost-effective weed control.
- Always add **Bonza Gold**.
- Many tank-mixing options for optimal weed control.



THISTROL PLUS

Product Type: Herbicide
Active Ingredient: 375g/L MCPB and 25g/L MCPA
Formulation: Soluble Concentrate

- Combines MCPA and MCPB giving flexibility to use over a wide range of situations.
- Controls seedling broadleaf weeds in young and established pasture.
- Suitable to use prior to your first graze in new pasture.
- Excellent clover safety.



BONZA GOLD

Product Type: Adjuvant
Active Ingredient: 450g/L Canola oil
Formulation: Plant Based Oil

- Improves deposition, wetting, spreading and plant uptake.
- Aids in the management of spray droplet quality and survival.
- Potential to increase droplet VMD and reduce fine droplets.
- Tried, Tested, Proven in a range of NZ conditions.

POST-GRAZE SPRAY

In a post-graze situation, where weeds have germinated later and are generally larger.

A combination of **Baton® 800WSG**, **Valdo® 800WG** and **Bonza Gold®** oil provides good results. In these post grazed situations numerous regional trials in New Zealand have demonstrated the clover safety of **Baton® 800WSG** and the resultant increase in pasture and clover yields.



BATON 800WSG

Product Type: Herbicide

Active Ingredient: 800g/kg 2,4-D

Formulation: Water Soluble Granule

- Non-volatile and low odour 2,4-D amine.
- Controls broadleaf weeds in new pasture.
- Improved clover safety.
- Ideal for boom and aerial spraying.
- 6 hour rainfast period.



VALDO 800WG

Product Type: Herbicide

Active Ingredient: 800g/kg Flumetsulam

Formulation: Water Dispersible Granule

- Increases weed spectrum – certain weeds which are poorly controlled by phenoxy herbicides.
- Suitable for use with **Thistrol Plus** or **Baton 800WSG**.
- Highly cost-effective weed control.
- Always add **Bonza Gold**.
- Many tank-mixing options for optimal weed control.



BONZA GOLD

Product Type: Adjuvant

Active Ingredient: 450g/L Canola oil

Formulation: Plant Based Oil

- Improves deposition, wetting, spreading and plant uptake.
- Aids in the management of spray droplet quality and survival.
- Potential to increase droplet VMD and reduce fine droplets.
- Tried, Tested, Proven in a range of NZ conditions.

UNDERSOWN PASTURES EXISTING PASTURES

If you have open pastures and you're investing in under-sowing and new ryegrass seed, you'll want to give these areas every chance to establish and produce to their full potential.

After periods of pasture stress, such as wet winters – with pasture pugging, or droughts - with periodic overgrazing, pastures can open up and require some undersowing to perform at their best.

When investing in this process, it can be important to control weeds during establishment to:

- Maximize ryegrass populations
- Reduce weed burden in open pastures
- Maximize pasture production and utilization

Whether your preferred programme includes Italians for winter/spring production, or hybrid/perennial ryegrasses with endophyte for longer term persistence, a pre-graze spray, four to six weeks after drilling, or a post graze spray, 7–10 days after grazing can make all the difference.

With the timing of autumn drilling varying across the country, the best timing for these applications can be during April or May but needs to be prior to soil temperatures dropping below 10°C for some herbicides.

Herbicide options depend on your situation, but include well-known brands such as **Baton® 800WSG**, **Sprinter® 700DS**, **Valdo® 800WSG** and **Bonza Gold®**. As these undersown situations do not generally include new clovers, these products offer the best for both timing and weed control.

KEY PRODUCT USE RATE

NEW PASTURE | SPRAY OUT

PRODUCT	TYPICAL USE RATES
CRUCIAL	2.4-5.4L/ha
Nail 600EC	20-40ml/ha
Pulse Penetrant	100ml/100L water
Amigo	125-200ml/100L water

NEW PASTURE | PRE-GRAZE

PRODUCT	TYPICAL USE RATES
Tribal Gold	4-5L/ha
Thistol Plus	3-4L/ha
Valdo 800WG	65g/ha
Dictate	3L/ha
Bonza Gold	500ml/100L water

NEW PASTURE | POST-GRAZE

PRODUCT	TYPICAL USE RATES
Baton 800WSG	1-1.5/ha
Valdo 800WG	65g/ha
Bonza Gold	500ml/100L water

UNDERSOWN PASTURE | POST-SOWING

PRODUCT	TYPICAL USE RATES
Baton 800WSG	2-2.5kg/ha
Valdo 800WG	65g/ha
Bonza Gold	500ml/100L water

Talk to your local TSR or AgChem Representative for the spray mix that is right for you, your weed mix and timing.

WE KNOW WHAT IT TAKES

