

FARMER'S PASTURE GUIDE.

AGRICOM.CO.NZ

AGRICOM 
Pastures for Profit®



INTRODUCTION TO AGRICOM

AgriCom markets a wide range of proprietary pasture and forage crop seeds to the agricultural industry. Our core business is investing in the research and development of forage options, and in the advancement of endophyte technology to deliver products that support farm sustainability and profitability. We have partnerships in place with Grasslands Innovation, a joint venture which includes Grasslanz Technology, a subsidiary of AgResearch. Forage crops are also sourced from external relationships via Plant & Food Research (NZ) within the Forage Innovations joint venture programme.

We understand that there are many cultivar options currently available. We were the first to initiate grazing system trials to identify the critical link between using a product and using the right management to achieve the greatest sustainability while maintaining return per hectare.

We also invest in an on-farm trial system to compare the different forage cultivars under a wide range of environments around New Zealand. This trialling system gives us confidence in recommending the correct cultivar for each situation. We are also active participants in the independent National Forage Variety Trials (NFVT) system co-ordinated by the NZ Plant Breeding and Research Association Inc.

**AGRONOMIC
LEADERSHIP
FROM OUR R&D
TO YOUR FARM.**

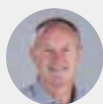
FOREWORD

Welcome to Agricom's Farmer's Pasture Guide, our dedicated resource to assist farmers in making informed decisions around forages, their respective fit and likely on-farm performance. Much progress has been made in the world of forage breeding during the last few decades, and this guide is an attempt to consolidate much of this information, along with trial and demonstration outcomes across the 50+ sites Agricom operates at any one time across New Zealand.

During the last 3-5 years we have observed and been involved in many conversations around farm grown feed and the cost effectiveness of these forages when grown and harvested efficiently. Much of this interest has stemmed from the rising costs of imported feed options, with the lessons learned and forage systems executed during this time putting many farmers in a much stronger and more profitable position. Having high-quality, cost-effective farm grown feed available year-round is now a common theme for many leading farmers.

The last couple of years have been an exciting time for the Agricom business as we've gone about replacing some of our longer term flagship varieties. **Three⁶⁰** perennial ryegrass will now replace the iconic variety **ONE⁶⁰**, such a dominant and important ryegrass, not only for us but for so many New Zealand farmers over the last fifteen years. **Legion** has successfully replaced **Prospect** and has become a hugely versatile and a popular variety, while **Reason** has established itself as a market leading perennial option. We also look forward to having commercial volumes in 2025 of our new, high performing tetraploid perennial ryegrass named **Align**. All these varieties are available with the market leading novel endophyte **AR37**.

Our focus and effort over several decades of New Zealand-led research and development has resulted in some great forage innovation, diversity and agronomic performance, delivering benefit to farmers right around the country. We look forward to bringing more products, systems and agronomy leadership in the years ahead.



Mark Brown

Australasian Brand Manager



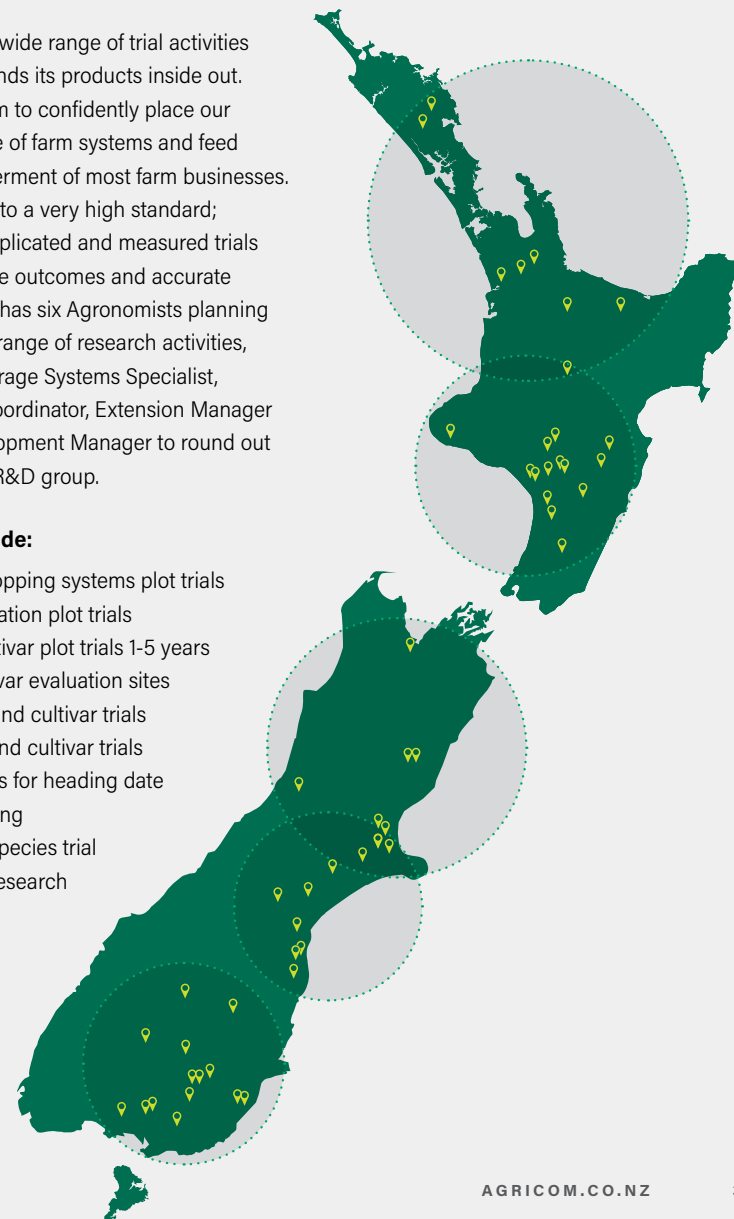
For more discussion and agronomy insights, follow us on Facebook **@AgricomNZ** and Instagram **@agricomnz** or visit **gofarmgrown.co.nz**

Agricom trial sites

Agricom invests in a wide range of trial activities to ensure it understands its products inside out. This enables our team to confidently place our products into a range of farm systems and feed rotations for the betterment of most farm businesses. Trial systems are run to a very high standard; they are often fully replicated and measured trials which provide reliable outcomes and accurate messaging. Agricom has six Agronomists planning and implementing a range of research activities, supported by one Forage Systems Specialist, Agronomy Project Coordinator, Extension Manager and a Product Development Manager to round out Agricom's technical R&D group.

Types of trials include:

- Annual forage cropping systems plot trials
- Grazed demonstration plot trials
- Yielded grass cultivar plot trials 1-5 years
- Fodder beet cultivar evaluation sites
- Plantain system and cultivar trials
- Chicory system and cultivar trials
- Heading row plots for heading date and disease scoring
- Diverse pasture species trial
- Beef and sheep research



TUNE IN FROM YOUR TRACTOR, UTE, OR COUCH TODAY.



Allister Moorhead

Product Development Manager

Glenn Judson

Animal Nutritionist

AL & JUDDY FROM

The
Al & Juddy
Show
PODCAST

Have you ever spent long nights awake thinking about the role of the different types of ryegrasses? Or perhaps you pass your time on the tractor considering Ecotain® environmental plantain's ability to reduce nitrate leaching?

Al and Juddy are here to help explain the technical, practical, and sometimes humorous implications of forages and animal systems that keep New Zealand farmers leading the world.

ALLISTER MOORHEAD (AL)

Al is Agricom's Product Development Manager and with experience as a senior agronomist with almost 30 years in the industry, has a wealth of practical knowledge and experience in all things agronomy. Having provided agronomic support throughout New Zealand, Australia and South America, Al has first-hand knowledge of most forage plants in most environments and situations. For a practical, down-to-earth view on a range of relevant topics, Al's worth a listen.

DR GLENN JUDSON (JUDDY)

With 20 years of industry experience, Juddy is Agricom's Animal Nutritionist and with experience as a farm systems specialist he leads an extensive research programme aimed at developing plant-based solutions for a range of industry challenges. Glenn has travelled extensively through New Zealand, Australia, and Europe providing technical support on matters of forage nutrition and grazing management. For an animal-specific view on forages and grazing systems tune in to Juddy's unique perspective.



SEED DATING - NEW SEGMENT!

This isn't your typical speed dating event but a unique podcast where you get to meet one of Agricom's forage products. Discover its attributes, understand its benefits, and see how it fits into your farm system. Keep an eye out through the document on easily digestible product-specific podcasts.



PODCASTS AVAILABLE NOW!



More episodes of the Al & Juddy podcast will be released monthly and are available on the **Agricom website, YouTube, Spotify, Apple Podcasts, Google Podcasts, Amazon Music, pod.co, Deezer** or whichever app you choose to listen to podcasts.

This is just a small selection from our podcast library, which is being added to regularly. Scan the QR code alongside to find additional podcasts not listed here.

THE RANGE INCLUDES:

Technical:

- Ep. 1 What on earth are endophytes?
- Ep. 13 Factors affecting intake
- Ep. 31 Trials and tribulations of picking a favourite

Systems:

- Ep. 16 Ewes should be into this
- Ep. 17 Wintering systems

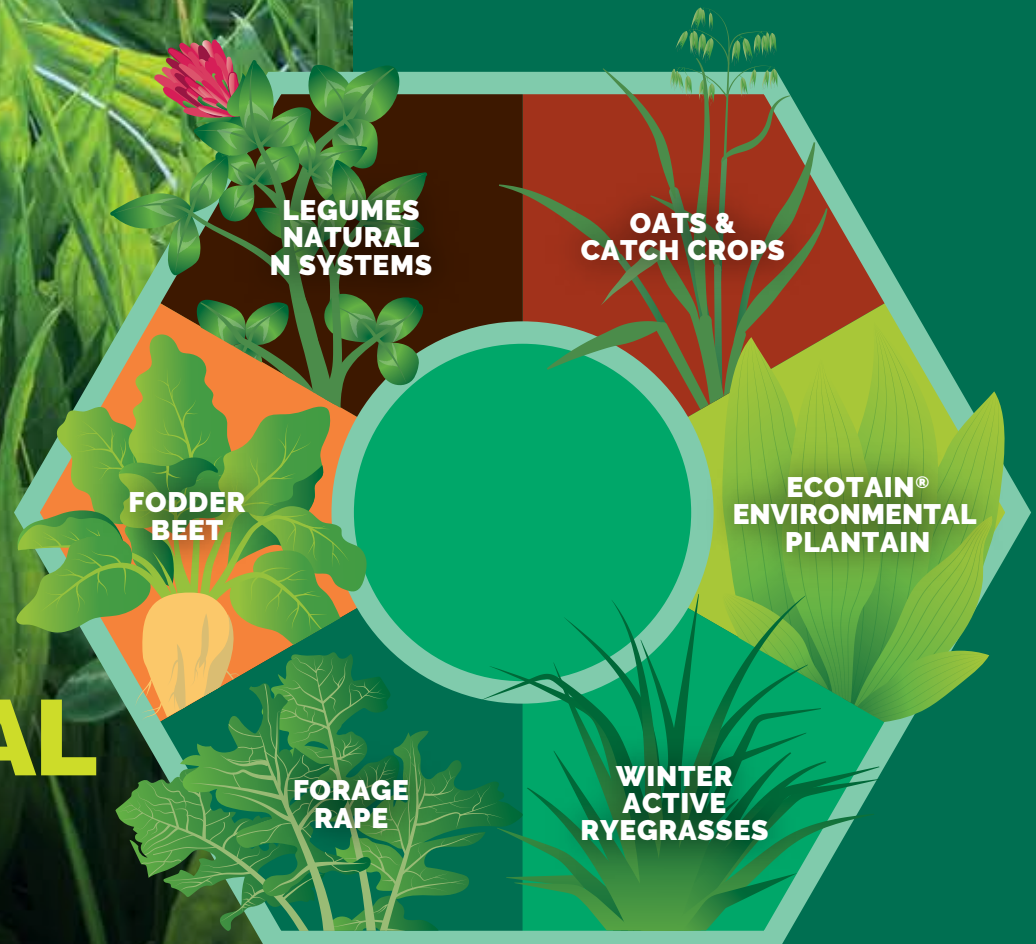
Forages:

- Ep. 2 Ryegrass types explained
- Ep. 3 What's not to like about white clover?
- Ep. 18 Chicory dickory crop

Interviews:

- Ep. 15 Brainstorming lease block
- Ep. 20 A career in agriculture - meet PGW Seeds CEO John McKenzie

FORAGE OPTIONS TO REDUCE ENVIRONMENTAL IMPACT.

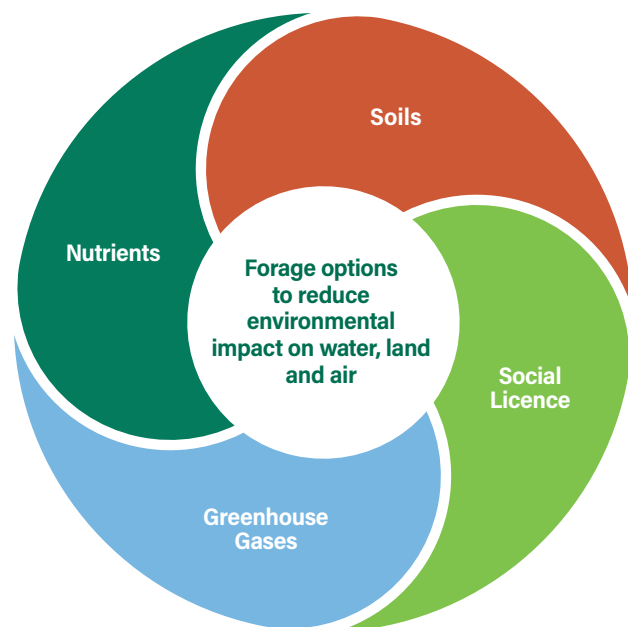


The Agricom Environmental Lens Framework

Efficient and sustainable pastoral agriculture remains the cornerstone of New Zealand's agricultural industry. However, there is increasing demand from customers to produce food in a sustainable way and where animal welfare implications are considered. Meeting the expectations of consumers in these aspects is becoming increasingly important.

Nitrate leaching limits, sediment control, welfare of animals during the winter, carbon sequestration and greenhouse gas mitigation are now all aspects of producing food, running in parallel with production and profitability.

Agricom provides a full portfolio of products, information and systems fit for a broad range of New Zealand's farming requirements. These products and forage systems have been designed to achieve high levels of production across a range of environments. The Agricom Environmental Lens Framework provides real tools, products and systems to help reduce the impact of nutrients, soils and greenhouse gases on water, land and air. 'Functional Forages' is an important part of the Agricom Environmental Lens as it represents Agricom's suite of products and systems, which can be considered as contributing tools from an environmentally sustainable view.



WHAT CAN BE DONE TO REDUCE MY IMPACT ON THE ENVIRONMENT THROUGH NUTRIENT LOSSES OR SURPLUSES?

Farm management factors such as pasture type, imported feed use and nitrogen fertiliser can help to reduce nitrogen (N) and phosphate (P) leaching. **Ecotain**® environmental plantain, catch crops like **Milton**, **Coronet** and **Crowa** oats, low N crops like **Jamon** and **Brunium** fodder beet and **Relish** red clover natural N systems are all options which may reduce the impact of nutrient losses and surpluses.

WHAT CAN BE DONE TO REDUCE MY IMPACT ON THE ENVIRONMENT THROUGH SOIL MANAGEMENT?

Soils are an incredibly important part of farming. To farm sustainably into the future, we need to manage and maintain soil health to prevent soil related issues such as erosion, excess nutrients, contamination and loss of carbon. Examples of forages to assist in slope strategies or heavily pugged areas are dense winter active grasses like **Reason** perennial ryegrass, or **Manta** Italian ryegrass, winter grazing management and riparian species such as **Savvy** cocksfoot and **Haven** tall fescue can also positively influence soil health to reduce the impact on land and water.

WHAT CAN BE DONE TO REDUCE MY IMPACT ON THE ENVIRONMENT THROUGH GREENHOUSE GASES?

The two main greenhouse gases emitted by New Zealand pastoral systems are methane and nitrous oxide. The amount of methane produced is typically related to the amount of drymatter consumed. Therefore, using high quality feeds will reduce the volume of emissions per unit or product as animals need to eat less to achieve the same performance. However, there are some forages which result in less methane per kg DM eaten such as forage rape.

In terms of nitrous oxide, reducing the amount of protein in the feed like fodder beet is likely to reduce nitrous oxide. However, **Ecotain** has reduced both nitrogen excretion and emissions in some studies.

For more details on how different forages and different forage systems may assist in achieving both your productivity goals but also the growing expectation of consumers, talk to your local Agricom representative about Agricom's Environmental Lens.



RYEGRASS TYPES EXPLAINED PODCAST



Pasture Options

RYEGRASS

Understanding the differences in these categories will help you determine which ryegrass best suits your farming systems. Ryegrasses can be categorised by their:

1. Species (annual, Italian, hybrid or perennial)
2. Ploidy
3. Heading Dates
4. Endophyte

Ryegrass varieties can be categorised by how long they live and their growth characteristics. These can be classified as:

- Annual – less than one year
- Italian – 1-2 years
- Hybrid – 2-5 years
- Perennial – 5 or more years

ANNUAL AND ITALIAN RYEGRASS

These two ryegrass species are described together because they are used in similar situations, for their fast establishment and high winter - early spring drymatter yield. Annual and Italian ryegrasses both establish very quickly and in good conditions are typically ready for a first light grazing 4-6 weeks after sowing, up to 2 weeks sooner than a perennial ryegrass.

When sown in March as a winter crop, annual and Italian ryegrasses produce a similar amount, normally 7-8 t DM/ha over 6-8 months. Annual ryegrass is less persistent and

is most commonly autumn sown as a 6-8 month winter/spring crop. Italian ryegrasses typically last 12-18 months in drier areas and 2 or more years under mild summer conditions. Some Italian ryegrasses such as **Manta AR37** have endophyte so may persist a year longer than those without, depending upon the pests present.

Italian ryegrasses keep growing into summer and over a 12 month period typically produce 15 t DM/ha. However, this figure varies widely with yields of 20 t DM/ha measured in summer wet or irrigated conditions, whereas in very dry summer conditions yields have been as low as 10 t DM/ha.

HYBRID (SHORT ROTATION) RYEGRASS

Short rotation or hybrid ryegrasses are generally derived from crossing perennial ryegrass and Italian ryegrass. Cultivars vary, but typically persist from 2-4 years, depending on conditions.

Their feed quality and winter growth are very good, generally a little higher than perennial ryegrass in similar circumstances. Many cultivars contain endophyte, which improves their persistence. The total drymatter yield of short rotation ryegrasses is similar, or higher, than perennial ryegrass over a 12 month period. The major difference however is the cool season production, which is typically higher. Summer feed quality is influenced by aftermath heading (or seeding) and potential summer growth varies between cultivars.

Short rotation ryegrasses are used in several ways including:

- As a short term pasture, where a paddock is destined to go into crop in 2-4 years
- For undersowing into thin runout pasture to improve its growth for 2-3 years
- Added to perennial pasture seed mixtures to provide increased winter production during the first few years and to boost animal performance in cooler regions

HYBRID (LONG ROTATION) RYEGRASS

Long rotation ryegrasses are crosses between perennial ryegrasses and existing hybrid ryegrasses or Italian ryegrasses. These grasses are defined by being heavily selected back toward their perennial heritage. Due to being more perennial-like they often sit between 3-5 years in a rotation.

PERENNIAL RYEGRASS

Perennial ryegrass is the most widely sown grass in New Zealand as it grows well in a wide range of conditions, is easy to establish and manage, provides high animal performance, generally has good persistence and forms a compatible mix with white clover.

Production of perennial ryegrass-based pastures on dairy farms average 14 t DM/ha/year in New Zealand, with yields over 20 t DM/ha/year achieved under irrigation.

In summer moist environments with good management and low pest pressure perennial ryegrass pastures can last indefinitely.

Where summer dry conditions and significant pest pressure prevail, a more realistic expectation of persistence may be less than 10 years. Pasture management is a key determining factor, so persistence varies widely in these situations.

RYEGRASS PLOIDY

Ploidy refers to the number of chromosomes per cell in a plant, a diploid ryegrass has two sets of chromosomes while a tetraploid ryegrass has four sets. These differences create differing plant characteristics with associated advantages and disadvantages for each type.

Diploids

Diploid plants have more tillers per plant and due to lower water content per cell, have a higher drymatter percentage per kilogram of fresh weight. Diploids have a slightly lower metabolisable energy level (around 0.1-0.3 ME lower depending on heading date). Both diploids and tetraploids have similar protein levels even though diploids are regularly lighter in colour. Diploids are recommended for high stocking rates and where overgrazing and pugging may occur.

Advantages	Disadvantages
Robust – less likely to be overgrazed	Less palatable
Less preferred by Argentine stem weevil	Less clover friendly - lower, denser growth habit can shade clover
More tolerant to pugging	

Tetraploids

Across literature tetraploids have shown about a 3% increase in intake across multiple stock types.

Tetraploids are more palatable, are preferred by grazing animals and have been shown to improve milksolids production by up to 7%. However, tetraploid ryegrasses are less robust and require more careful management under stressful conditions.

Because of the extra chromosomes, tetraploids have a bigger cell size and they have higher water content which means they have a lower drymatter percentage per kilogram of fresh weight. Tetraploids are regularly darker in colour than diploids but have no differences in crude protein. They are recommended in systems capable of excellent pasture management, particularly when looking to increase animal performance per head.

Advantages	Disadvantages
Higher metabolisable energy, more palatable to stock, easier to digest	More prone to overgrazing
Better utilisation (easier to graze to good residuals)	Require careful management in wet and drought conditions
Clover friendly - open, erect growth habit promotes more clover	Can be more preferred by Argentine stem weevil
Less facial eczema spores (as better grazed)	

AR1

AR37

Ryegrass with **AR37** endophyte (right) demonstrates persistency advantages over **AR1** endophyte (left) in the same cultivar, in the presence of black beetle adult, Ohaupo, Waikato.

UNBEATEN PEST PROTECTION FROM A RYEGRASS ENDOPHYTE

AR37 endophyte has proven resistance to more pasture insects than any other ryegrass endophyte commercially available. Endophyte is the first choice to be made when deciding on perennial ryegrass options, as endophyte has a major effect on the persistence and production of ryegrass in high insect pressure environments.

Insects controlled by **AR37** endophyte include; black beetle adult, Argentine stem weevil larvae, root aphid, pasture mealy bug and porina.

Both on and off-farm trials have proven the ability of ryegrass with **AR37** endophyte to persist when under attack from these insects.

AR37 offers protection against the insect pests photographed below:



BLACK BEETLE ADULT



PASTURE MEALY BUG



PORINA



ARGENTINE STEM WEEVIL LARVAE



ROOT APHID



WHAT ON EARTH ARE ENDOPHYTES? PODCAST



PRODUCTION

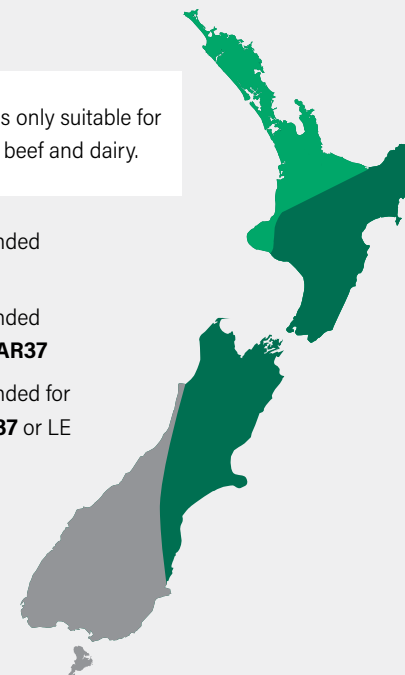
In regions with high insect pressure **AR37** increases the annual production of ryegrasses when compared to the same cultivar with different endophytes (SE, **AR1** and LE). Trials run from Northland to Southland have shown the persistence and production benefits of the **AR37** endophyte. Animal trials using the same perennial ryegrass cultivar with **AR37**, **AR1** and LE endophytes have shown that the growth of sheep and milk production in dairy cows on **AR37** is the same as on **AR1** or LE.

i **AR37** is only suitable for sheep, beef and dairy.

Recommended for AR37

Recommended for AR1 or AR37

Recommended for AR1 or AR37 or LE



i Visit ar37endophyte.com for important animal health information and more info on endophyte type and protection against insect pests.

WE'VE GOT YOU COVERED THIS SEASON.

For more forage options and technical advice see below.

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*Legion has been bred, selected and successfully tested as a perennial and will function as a perennial ryegrass.
Due to a small number of tip awns Legion is certified as *Lolium Boucheanum*.



ONE SMART GRASS.

- High annual yields
- Very strong summer and autumn growth
- Excellent crown rust tolerance
- Ideal for dairy pastures, and sheep and beef finishing

Align is a high performance tetraploid perennial ryegrass that is productive throughout the year providing resilient, quality drymatter for modern production systems. **Align** is characterised by a dense and productive growth habit throughout August and September, providing improved grazing tolerance at this time.

Ploidy	Tetraploid
Suggested Sowing Rate (kg/ha)	22-25
Heading Date	Very late (+35)
Endophyte	AR37
Rust Tolerance	Excellent

OUTSTANDING SUMMER AND AUTUMN PERFORMANCE WITH LATE SPRING QUALITY.

- Very high annual drymatter production
- Excellent spring quality and summer leafiness
- Outstanding use of summer irrigation or natural rainfall
- Excellent crown rust tolerance

Three⁶⁰, like **ONE⁵⁰** before it, has demonstrated a staygreen habit through dry summer conditions. This is particularly noticeable in the hot northern areas of New Zealand where **Three⁶⁰** has been very visual in its tolerance to hot and dry summer conditions.

Ploidy	Diploid
Suggested Sowing Rate (kg/ha)	18-20
Heading Date	Late (+20)
Endophyte	AR37 & AR1
Rust Tolerance	Excellent

EARLY SEASON BOOST, ALL SEASON PERFORMANCE.

- Well balanced seasonal growth with excellent early spring growth
- Very good tiller density
- Extremely low aftermath heading in summer
- Excellent tolerance to a wide range of environments

Reason AR37 is a high performance, resilient diploid perennial that has low aftermath heading in summer and maintains summer and autumn productivity similar to existing late heading dairy options. **Reason** is ideal for early spring set stocking, with its summer quality making it well suited for a range of stock classes.

Ploidy	Diploid
Suggested Sowing Rate (kg/ha)	18-20
Heading Date	Mid (+3)
Endophyte	AR37 & AR1
Rust Tolerance	Very high

AR37 is only suitable for sheep, beef and dairy.

Grasslands®

Legion

Perennial Ryegrass*

ALL REGIONS, ALL SEASONS, COMPLETE ALL ROUNDER.

- Very high summer, autumn and winter growth
- Excellent density for periods of set stocking and winter grazing
- Very low aftermath seeding and excellent summer leafiness
- Very good tiller size and leaf length

Legion AR37 can be used in general sheep and beef pastures having excellent density for periods of set stocking and winter grazing. It is also a high-performance grass that is highly suited to dairy pastures and runoffs.

Legion is one of the recent generation of particularly strong perennial ryegrasses for autumn production.

Ploidy	Diploid
Suggested Sowing Rate (kg/ha)	18-20
Heading Date	Late (+13)
Endophyte	AR37, AR1 & LE
Rust Tolerance	Very high

Ceres

ONE⁵⁰

Perennial Ryegrass

NEW ZEALAND'S ICONIC PERENNIAL RYEGRASS.

- Strong summer, autumn and winter growth particularly with **AR37**
- Excellent spring quality and summer leafiness
- Very good use of summer irrigation or natural rainfall
- One of the most commercially sown varieties in New Zealand

ONE⁵⁰ is a high performing variety with particularly strong growth from summer through to winter. **ONE⁵⁰** is one of the most trialled and widely sown cultivars in New Zealand in both **ONE⁵⁰ AR37** and **ARI**. This level of trialling creates confidence that performance will be consistent wherever **ONE⁵⁰** is used.

Ploidy	Diploid
Suggested Sowing Rate (kg/ha)	18-20
Heading Date	Late (+20)
Endophyte	AR37, ARI & LE
Rust Tolerance	Very high

Grasslands®

Samson

Perennial Ryegrass

PROVEN AND TRUSTED TO DELIVER SPRING LAMBING FEED.

- **Samson** has been used extensively in developing **ARI** and **AR37** novel endophytes
- Proven persistence in a wide range of New Zealand environments
- Productive under sheep and beef management
- Bred for improved rust tolerance

Samson is a general purpose perennial ryegrass that excels under sheep and beef grazing. **Samson** was bred from a wide range of genetics from around New Zealand making it an excellent long term pasture choice countrywide. **Samson AR37** possesses a typically early spring production.

Ploidy	Diploid
Suggested Sowing Rate (kg/ha)	18-20
Heading Date	Mid (+3)
Endophyte	AR37, ARI & LE
Rust Tolerance	Very high

***Legion** has been bred, selected and successfully tested as a perennial and will function as a perennial ryegrass. Due to a small number of tip awns **Legion** is certified as *Lolium Boucheanum*.



PRODUCTIVE, PALATABLE, HEALTHY HAVEN.

- Soft leaves for an early heading tall fescue
- High total production with improved autumn and winter growth
- High crown rust tolerance
- Tolerant to a range of insects and supplied with **MaxP**** endophyte

Haven is one of the highest-producing tall fescues Agricom has tested. While maintaining its high early spring growth similar to the previous generation material, **Haven** has captured more summer, autumn, and winter growth leading to an impressive annual yield potential for a **Haven** pasture.

Ploidy	Hexaploid
Suggested Sowing Rate (kg/ha)	20-25
Heading Date	-18 relative to Nui [#]
Endophyte	MaxP [®]
Rust Tolerance	—



NEW ZEALAND'S FIRST COMMERCIAL PROPRIETARY MEADOW FESCUE.

- Highly palatable species
- Strong mid spring to late summer growth
- Ideally suited to high fertility soils
- Good fit for legume finishing pastures and in mixes with tall fescue to improve palatability and management

Oakdon is a New Zealand bred meadow fescue which contains the loline-producing endophyte **MaxR****. **Oakdon** in a 50:50 pasture mix with **Hummer** or **Haven** is the ideal option for people using fescue for the first time who are concerned about potential pasture management issues.

Ploidy	Diploid
Suggested Sowing Rate (kg/ha)	20-24
Heading Date	+11 relative to Nui [#]
Endophyte	MaxR [®]
Rust Tolerance	High



FESCUE MIX, BEST OF BOTH WORLDS.

- Improved palatability and pasture utilisation over traditional tall fescue pastures
- Extended spring growth from late August to late November
- Ideally suited to high-fertility soils
- Extended endophyte protection for a fescue pasture

Haven in a 50:50 pasture mix with **Oakdon** is the ideal option for people using fescue for the first time who are concerned about potential pasture management issues. This mix has consistently shown elevated palatability and utilisation over a range of other tall fescue types, and represents an ideal first step into tall fescue usage.

Ploidy	TF Hexaploid, MF Diploid
Suggested Sowing Rate (kg/ha)	24 (50% TF: 50% MF)
Heading Date	Haven -18*, Oakdon +11*
Endophyte	Haven MaxP [®] , Oakdon MaxR [®]
Rust Tolerance	—



Grasslands®
Savvy
Cocksfoot

LIFTING DRYLAND PRODUCTION.

- Rapid establishment for a cocksfoot
- High autumn and winter production
- High quality and leafy in summer
- Excellent disease tolerance

Cocksfoot is well known for its drought tolerance and its ability to tolerate lower soil fertility and many insect pests, including grass grub. **Savvy** retains all these features while adding animal acceptability that most cocksfoot varieties lack. **Savvy** is ideal for cattle of all ages while also being very tolerant of intense sheep grazing and was bred to have a softer leaf and increased palatability.

Perenniality	Perennial
Suggested Sowing Rate (kg/ha)	3 mixed sward 6-8 pure sward (with dryland clovers)
Heading Date	Mid
Leaf Size	Fine
Growth Habit	Erect
Winter Activity	High (for cocksfoot)

*1-10 winter active dormancy scale, with 10 being the most winter active.

Ceres
Atom
Prairie Grass

EXCELLENT DURABILITY AND PALATABILITY.

- Long seasonal spread of growth
- Excellent winter growth and summer heat tolerance
- Highly palatable
- Potential for high legume and herb content

Atom has no endophyte, a palatable seedhead, potentially high legume and herb content and summer heat tolerance, which makes it a perfect fit for late spring, summer and autumn finishing of young stock.

Atom prairie grass also has good winter production, similar to short rotation ryegrasses, making it a useful pasture tool at this time of year. Lax rotational grazing is recommended for **Atom** making it ideal for sowing into run-out lucerne stands.

Perenniality	Medium to long term
Suggested Sowing Rate (kg/ha)	25-30
Heading Date	Early
Winter Activity	Very high

Titan 5
Lucerne

PRODUCTIVE AND DISTINCTIVE LUCERNE.

- Highly productive dormancy 5 lucerne with strong early spring growth
- Fine stemmed leafy lucerne
- Good grazing tolerance
- Excellent disease tolerance

Titan 5 is a dual purpose lucerne ideal for both high quality supplementary feed and direct grazing. **Titan 5's** fine stems help maintain quality for silage and hay production and supports good utilisation when fed out to all stock classes, including horses. **Titan 5** is highly tolerant of grazing, making it a great option.

Perenniality	Perennial
Suggested Sowing Rate (kg/ha)	10-15 pure stand
Winter Dormancy Index	5*
Flowering Date	Medium
1000 Seed Weight (grams)	2.0



ALL-ROUND SUPERSTAR.

- Very high yielding hybrid ryegrass
- Powerful all season forage boost
- Extremely leafy spring and summer habit
- Ideal for 2-4-year pasture rotations

Anvil is a unique tetraploid hybrid ryegrass that blends winter and summer production traits in one genetic profile. Its very late heading genetics maintains pasture quality for silage production, finishing pastures and milk production through spring and early summer.

Anvil also excels in summer and autumn growth and has exceptional disease tolerance. **Anvil AR37** will be available in limited quantities in 2025.

Ploidy	Tetraploid
Suggested Sowing Rate (kg/ha)	Undersowing 15 Pasture mix 22-25
Heading Date	Very late (+27)
Endophyte	AR37
Rust Tolerance	Excellent

DENSE, HIGH QUALITY HYBRID RYEGRASS.

- **Mohaka** is a broader leaved, well tillered hybrid suited to 2-4 year pastures
- Ideal for undersowing programmes
- Perfect for short term finishing pastures, run-off pastures, supplementary systems

Mohaka is a broader leaved, well tillered hybrid suited to 2-4 year pastures. **Mohaka** is ideal for undersowing into run-out pastures, with **AR37** endophyte offering increased protection against insect attack and providing improved persistence compared to Italian ryegrass options.

Ploidy	Tetraploid
Suggested Sowing Rate (kg/ha)	Undersowing 15 Pasture mix 22-25
Heading Date	Late (+20)
Endophyte	AR37 & AR1
Rust Tolerance	Very high

BIG, PROTECTED, AND HIGHLY PRODUCTIVE.

- Very strong winter growth
- High total yield
- Broad visual plant type in all farm systems
- Ideal for short-term pasture rotations

Manta is a new Italian ryegrass, and with **AR37** endophyte is a fast establishing highly productive variety which is a recent addition to the **AR37** endophyte line up. **Manta AR37** stands out as an excellent choice for undersowing into damaged pastures, leveraging its quick establishment and robust growth offering a dependable solution for such scenarios. It should be noted that **Manta AR37** may cause ryegrass staggers. **Manta AR37** is only recommended for beef and dairy.

Ploidy	Diploid
Suggested Sowing Rate (kg/ha)	20-25 Undersowing 12-15
Heading Date	Late (+15)
Endophyte	AR37
Rust Tolerance	Very high



RESILIENT ITALIAN RYEGRASS.

- Excellent second year production potential
- Low aftermath seedhead for a true Italian
- Dense cultivar suited to winter grazing
- Ideal for silage production

Asset was the first Italian ryegrass available with **AR37** endophyte. This improves the persistency of **Asset** by providing improved insect protection. It should be noted that **Asset AR37** may cause ryegrass staggers.

Asset without endophyte, is an ideal long-lived Italian for autumn and winter lamb production, or any short term pasture on sheep, beef, deer and dairy farms.

Ploidy	Diploid
Suggested Sowing Rate (kg/ha)	20-25 Undersowing 12-15
Heading Date	Late (+14)
Endophyte	AR37 & LE
Rust Tolerance	Very high

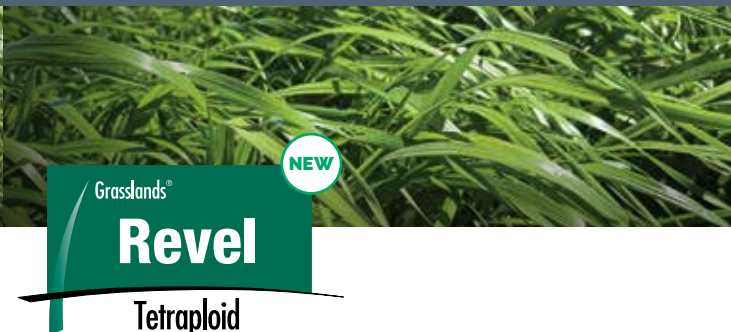


BIG, BOLD, AND HIGHLY PRODUCTIVE.

- Very strong winter growth
- High total yield
- Broad visual plant type in all farm systems
- Short-term pasture rotations

Manta is a new Italian ryegrass with **Manta** LE standing out as a late heading diploid Italian ryegrass that combines the traits of its size, productivity and persistence. **Manta** LE is fast to establish, has robust winter production, and an extended period of productivity. In the northern regions in New Zealand, **Manta** LE is anticipated to endure through a second winter, while in milder climates, it demonstrates significant persistence for an Italian ryegrass. **Manta** LE is suitable for grazing with all stock types.

Ploidy	Diploid
Suggested Sowing Rate (kg/ha)	20-25 Undersowing 12-15
Heading Date	Late (+15)
Endophyte	LE
Rust Tolerance	Very high



WINTER FEED WITH AN EARLY SPRING PUNCH.

- Strong establishment from autumn sowing
- Consistent performance through winter and spring
- Good tiller density for a traditional annual
- Outstanding regrowth potential

Revel is a New Zealand-bred, late heading and high performance tetraploid annual ryegrass. It is a fast establishing annual suited to winter and spring production systems. While being recognisable as a broad annual ryegrass, **Revel** has good tiller density for its style, this contributes to the consistency of performance from grazing to early silage cuts.

Ploidy	Tetraploid
Suggested Sowing Rate (kg/ha)	20-30
Heading Date	Late (+12)
Endophyte	—
Rust Tolerance	Very high



Grasslands®
Brace
White Clover

**ALL SEASON
PRODUCTION.**

- New generation of genetics for large-leaved white clover
- Very high spring and summer production
- Improved autumn and winter activity
- Ideal for dairy, beef and lamb finishing and silage pastures

Brace was finally selected after extensive dairy evaluation in the Waikato with proven persistence, high yield and adaptability to current environmental conditions in the presence of pests and current fertiliser practices. **Brace** has more consistently large leaves, making it a very visual white clover. It has production improvements in all seasons particularly noticeable in autumn and winter.

Perenniality	Perennial
Stolon Density	High
Leaf Size	Large
1000 Seed Weight (grams)	0.7
Suggested Sowing Rate (kg/ha)	3-5



Grasslands®
Attribute
White Clover

**NEW ZEALAND'S NEW
GENERATION OF CLOVER.**

- Very high total productivity
- Maintains high productivity under a wide range of grazing managements
- Ideal for sheep and beef pastures, finishing pastures, dairy and dairy support pastures
- Bred in New Zealand by world leaders in white clover breeding

Attribute has shown a high level of performance in dryland sheep pastures under both set stocking and rotational grazing in Canterbury while being just as successful in the intensive grass growing areas of the rotationally grazed cattle pastures in the upper North Island. **Attribute** is the perfect white clover base for a clover mix.

Perenniality	Perennial
Stolon Density	High
Leaf Size	Medium-large
1000 Seed Weight (grams)	0.7
Suggested Sowing Rate (kg/ha)	3-5



Grasslands®
Emblem
White Clover

**RESILIENT
WHITE CLOVER.**

- Medium to small-leaved white clover
- High production under periods of set stocking
- Selected for performance over time
- Recommended for sheep and beef pastures both dryland and higher rainfall

Emblem is a medium to small-leaved white clover that is a third generation of this style. It has been bred and selected from a programme focused on broadly adaptive genotypes successful in variable environmental conditions and grazing managements.

Emblem has especially been successful in low input and set stock conditions predominantly found in sheep and beef farming systems.

Perenniality	Perennial
Stolon Density	High
Leaf Size	Medium-small
1000 Seed Weight (grams)	0.7
Suggested Sowing Rate (kg/ha)	3-5



OUTSTANDING PROVEN PERSISTENCE.

- A major improvement in red clover persistence within grazing systems
- High yield potential over time
- Semi-prostrate growth habit
- Low levels of formononetin (oestrogen)

Relish red clover is a major advancement in red clover breeding. It has shown outstanding persistence in ryegrass pasture under rotational grazing compared to current alternative varieties. It must be remembered that sowing rate often has the biggest impact on red clover persistence as it is a much larger seed than white clover. Low sowing rates will lead to low plant populations from the very start of the pasture.

Perenniality	Perennial
Oestrogen	Low
Leaf Size	Medium
1000 Seed Weight (grams)	2.5
Ploidy	Diploid
Suggested Sowing Rate (kg/ha)	4-6 grass or brassica mix 12 pure stand

THE ONLY PROVEN ENVIRONMENTAL PLANTAIN.

ECOTAIN® ENVIRONMENTAL PLANTAIN REDUCES LEACHING IN FOUR WAYS:

1. Dilute	Ecotain® environmental plantain increases the volume of urine animals produce, which means the N being excreted is in a more dilute form, resulting in a reduced N load in the urine patch.
2. Reduce	Ecotain reduces the amount of dietary N which is excreted in urine, compared with ryegrass. This reduces the amount of N released into the soil via the urine patch.
3. Delay	In urine patches from animals grazing Ecotain , the conversion from ammonium to nitrate is delayed. Slower conversion allows plants a greater opportunity to uptake N, significantly reducing the potential for leaching.
4. Restrict	The presence of Ecotain plants in the soil reduces nitrification, likely through the effect of a biological nitrification inhibitor.

Perenniality	Perennial
Cool Season Growth	Very high, similar to perennial ryegrass
Pure Sward	10-12 kg/ha
Ecotain Dominant Clover Mix	12 kg Ecotain 4 kg clover
Diverse Pasture Mix	1-3 kg/ha

NEW ZEALAND BRED, CERTIFIED CHICORY.

- A long-lived chicory with strong persistence
- Superior disease tolerance
- Improved drymatter production
- Ideal for short term 'finishing' or dairy pastures

Choice was bred in New Zealand by AgResearch Grasslands, the breeders of the original forage chicory, Puna. It has improved disease tolerance and very good early season growth. **Choice** also provides increased levels of required trace elements compared to ryegrass and gives high volumes of good quality summer feed for increased animal production.

Perenniality	Perennial
Cool Season Growth	High (for chicory)
Growth Habit	Erect
1000 Seed Weight (grams)	1.2
Suggested Sowing Rate (kg/ha)	1-3 mixed stand 8-10 pure stand

DAIRY PASTURE EXAMPLE MIXES

REASON	+3 DAYS	RATE (KG/HA)
Reason is ideal for modern dairy pastures requiring September and October growth while maintaining summer quality and autumn pasture covers.	Reason AR37 or AR1 perennial ryegrass*	20
	Brace white clover	3
	Attribute white clover	2
	TOTAL	25

LEGION	+13 DAYS	RATE (KG/HA)
Legion's strong autumn and winter activity helps with all grass wintering systems, while summer leafiness is a benefit to dairy pastures.	Legion^ AR37, AR1 or LE perennial ryegrass*	20
	Brace white clover	3
	Attribute white clover	2
	TOTAL	25

THREE ⁶⁰	+20 DAYS	RATE (KG/HA)
Three⁶⁰ is perfect for dairy production due to its outstanding summer, autumn and winter growth, quality and persistence.	Three⁶⁰ AR37 or AR1 perennial ryegrass*	20
	Brace white clover	3
	Attribute white clover	2
	TOTAL	25

TETRAPLOID DIPLOID MIXED PASTURE		RATE (KG/HA)
The ultimate summer pasture combo for improved resilience and performance.	Align AR37 or AR1 tetraploid perennial ryegrass*	12
	Three⁶⁰ AR37 or AR1 diploid perennial ryegrass*	10
	Brace white clover	3
	Attribute white clover	2
	TOTAL	27

DRYLAND DAIRY		RATE (KG/HA)
Legion and Savvy are ideal for dryland dairy production especially where persistence is desired. Savvy and Choice provide extra summer and autumn feed in dryland conditions.	Legion^ AR37 perennial ryegrass*	18
	Savvy cocksfoot	3
	Brace white clover	2
	Attribute white clover	3
	Choice chicory	2
	TOTAL	28

SHEEP AND BEEF PASTURE EXAMPLE MIXES

LEGION	+13 DAYS	RATE (KG/HA)
Legion is ideal for sheep and beef farms due to its increased summer, autumn and winter growth, quality and persistence.	Legion^ AR37, AR1 or LE perennial ryegrass*	18
	Attribute white clover	3
	Relish red clover	4
	Ecotain[®] environmental plantain or AgriTonic plantain	1
	Choice chicory	2
	TOTAL	28

REASON	+3 DAYS	RATE (KG/HA)
Reason has excellent density for periods of set stocking and winter grazing. It also has good pasture quality through summer into autumn for mating.	Reason AR37 or AR1 perennial ryegrass*	18
	Attribute white clover	3
	Nomad white clover	2
	Relish red clover	4
	Ecotain environmental plantain or AgriTonic plantain	1
	Choice chicory	2
	TOTAL	30

SAMSON	+3 DAYS	RATE (KG/HA)
Samson has excellent spring growth and persistency under set stocking and hard winter grazing. If hard dryland, drop Samson to 12 kg/ha, lift Savvy to 4 kg/ha and add 6 kg/ha of Coolamon .	Samson AR37, AR1 or LE perennial ryegrass*	18
	Savvy cocksfoot	2
	Attribute white clover	2
	Nomad white clover	3
	Choice chicory	2
	Ecotain environmental plantain or AgriTonic plantain	1
	TOTAL	28

TALL FESCUE MIX

HAVEN		RATE (KG/HA)
Haven has a very high spring and summer growth and with MaxP ® is tolerant to many insects. The high water use efficiency makes Haven pastures ideal for regions that irrigate.	Haven MaxP ® tall fescue	25
	Brace white clover	3
	Attribute white clover	2
	TOTAL	30

FESCUE MIX

HAVEN		RATE (KG/HA)
Haven has a very high spring and summer growth and with MaxP ® is tolerant to many insects. The high water use efficiency makes Haven pastures ideal for regions that irrigate. Oakdon meadow fescue with MaxR ® endophyte is often mixed 50:50 with Haven tall fescue to maintain all the advantages of a tall fescue pasture but to greatly improve grazing management.	Haven MaxP ® tall fescue	12
	Oakdon MaxR ® meadow fescue	12
	Attribute white clover	5
	Relish red clover	4
	TOTAL	33

DRYLAND SHORT TO MEDIUM TERM PASTURES

ATOM		RATE (KG/HA)
Atom based pasture is a good option for short to medium-term pasture, particularly on light, free draining soils which are predominantly rotationally grazed.	Atom prairie grass	20
	Titan 5 lucerne	4
	Relish red clover	4
	Attribute white clover	3
	Choice chicory	1
	TOTAL	32

RUNOUT LUCERNE UNDERSOWING MIX

ATOM		RATE (KG/HA)
Atom prairie grass is a perfect grass to be undersown into a running out lucerne stand to extend the life by 2-3 years.	Atom prairie grass	16-20
	Ecotain ® environmental plantain	2
	TOTAL	18-22

SHORT TERM PASTURES

MOHAKA	+20 DAYS	RATE (KG/HA)
Mohaka has very strong spring production which makes it ideal for early spring pastures or part of a 3-4 year rotation in a run-off situation where silage production is a high priority.	Mohaka AR37 or AR1 tetraploid hybrid ryegrass*	22-25
	Brace white clover	3
	Attribute white clover	2
	TOTAL	27-30

MANTA	+15 DAYS	RATE (KG/HA)
Manta low endophyte is an ideal option for a short term pasture for all stock classes.	Manta LE Italian ryegrass	20-25
	Attribute white clover	3
	Relish red clover	4
	TOTAL	27-32

UNDERSOWING OPTIONS

MANTA AR37	+15 DAYS	RATE (KG/HA)
Manta AR37 ® is ideal for undersowing into thinning or run-out pastures. It has improved insect protection leading to increased second year persistence.	Manta AR37 Italian ryegrass	18
	Ecotain ® environmental plantain	7
	TOTAL	25

MOHAKA	+20 DAYS	RATE (KG/HA)
Mohaka is ideal for extending the life of a damaged or degraded pasture with a quality tetraploid hybrid ryegrass with AR37 .	Mohaka AR37 or AR1 tetraploid hybrid ryegrass*	18
	Ecotain ® environmental plantain	7
	TOTAL	25

***Legion** has been bred, selected and successfully tested as a perennial and will function as a perennial ryegrass. Due to a small number of tip awns **Legion** is certified as *Lolium Boucheanum*. ***Manta AR37** is only recommended for beef and dairy.



Spitfire

Forage Rape

MULTI-PURPOSE FORAGE RAPE.

- Potential 6-9 t DM/ha (sowing date dependent)
- 13 weeks to first grazing
- Suited to lambs, sheep or cattle
- Sow 3-4 kg/ha straight or 2 kg/ha with short term ryegrass

Spitfire is a multi-purpose forage rape with a characteristic soft stem, excellent regrowth potential and aphid tolerance, delivering both forage quality and yield, allowing very good livestock performance.

Suggested Sowing Time	Late January to early March
Suggested Sowing Rate (kg/ha)	3-4 alone, 2 with short term ryegrass
Time to First Grazing	13 weeks
Number of Potential Grazings	1 Mixes extend number of grazings
Potential Yield (t DM/ha)	6-9 depending on sowing date



Mainstar

Forage Rape

EXCELLENT REGROWTH POTENTIAL.

- Early-maturing, 10-12 weeks
- Regrowth potential for 3 grazings, particularly in mixes
- Fast recovery from grazing with excellent subsequent yields
- Ideal for mixing with herbs and clover

Mainstar is a modern early maturity forage rape. Traditionally rape has been used as a summer lamb finishing crop and ewe flushing feed. **Mainstar** has extremely good aphid tolerance. **Mainstar** is a very versatile brassica, being suitable for a wide range of soil fertility and environmental conditions, stock classes and sowing times.

	February to March
	3-4 alone, 1-2 with short term ryegrass
	10-12 weeks
	1-2 Mixes may extend number of grazings
	5-8 depending on sowing date



Ceres

Hunter

Forage Brassica

FAST AUTUMN FEED FROM A BRASSICA.

- Early-maturing from spring sowing, 8-10 weeks with minimal ripening requirement
- Excellent quality forage for finishing animals through the summer months
- Fast recovery from grazing with excellent subsequent yields
- Strong plant survival from multiple grazings

Hunter is a quick growing, leafy turnip, with minimal bulb development and is best suited to multiple grazings. **Hunter** was selected for vigorous regrowth, resulting in a variety with fast recovery from grazing and excellent ability to yield in the second, third and sometimes fourth regrowth cycles.

	February to March
	4
	8-10 weeks
	2-3
	10*

*Depending on number of grazings.

Plant and Food

Milton

Forage Oats

VERY HIGH YIELDING OAT.

- Early maturing
- Quick feed early-mid winter
- Quicker to mature than **Coronet**
- Green chop cereal silage

Milton is a very high-yielding oat with improved disease resistance and has the ability to hold quality until grazing/cutting. It is ideally suited for planting in autumn to provide a single grazing in winter.

Suggested Sowing Time

Mid-March to May

Intended Use

Single winter grazing, green chop cereal silage and catch crop

Resistance to rust

Very good

Planting Time

Autumn or early spring

Sowing Rate (kg/ha)

100-120

Plant and Food

Coronet

Forage Oats

HIGH YIELDING FORAGE CEREAL.

- Later maturity
- High quality feed later in the season
- High leaf-to-stem ratio
- The earlier sown in autumn, the larger the yield

Coronet is a high yielding forage cereal that has a fine stem and high leaf content, combined with excellent disease and cold/frost tolerance, making it the preferred crop where very high quality feed is wanted.

Mid-March to May

Single winter grazing, green chop cereal silage and catch crop

Very good

Early autumn or late winter to early spring (for silage)

100-120

NEW

Plant and Food

Crowa

Forage Oats

IMPROVED DISEASE RESISTANCE.

- Fast establishing
- Improved rust tolerance
- High yield potential across multiple sowing windows
- Proven performer in winter sown 'catch crop' trials under difficult conditions

Agricom's latest release oat has been selected as a fast starting, high yielding early to medium maturity type. Agricom has been evaluating **Crowa** for over three years across a wide range of climatic zones and farm systems to ensure it has the versatility and flexibility to perform to meet growers expectations.

Mid-March to May

Single winter grazing, green chop cereal silage and catch crop

Very good

Autumn, winter, spring

120 (can use 80/ha if in a mix eg. with Italian ryegrass)



Seed Treatment

Superstrike® grass seed treatment provides seedlings with a high level of early plant protection, delivering both insecticide and fungicide protection during pasture establishment.

The **Superstrike** treatment includes important micronutrients; zinc, manganese and molybdenum - applied evenly around the seed to support early plant development. The combination of chemical additives and micronutrients in the seed treatment means seedlings are in a better position to withstand environmental stresses. With a positive effect from the treatment on seedling vigour and early plant growth, this may result in the first grazing occurring earlier. **Superstrike** is recommended for all grasses including ryegrass, cocksfoot and fescue where Argentine stem weevil, black beetle or grass grub are likely to have a detrimental effect on plant establishment.

Visit seedtreatment.co.nz for more information.

TABLE 1. SUPERSTRIKE GRASS PRODUCT PROFILE

	Pest Protection	Disease Protection	Micronutrients	Sowing Rate Compared to Untreated	Withholding Period
Superstrike Grass	Argentine stem weevil (ASW)	<i>Pythium</i> and <i>Fusarium</i>	Zinc	Same*	6 weeks (full renovation)
	Grass grub		Manganese		3 weeks (undersowing)
	Black beetle		Molybdenum		

*For grass grub protection a minimum sowing rate of 15 kg/ha is required.



Best Practice Pasture Establishment

Successful pasture establishment starts with planning. A rushed decision can result in late planting, weed invasion, low feed production in the first winter and spring, and poor persistence. Use the Best Practice Pasture Establishment checklist below to help ensure that your pasture renewal programme is successful.

1. Paddock Selection

- Begin with the paddock with the greatest difference between current and potential performance, as the return on investment will be higher
- Select paddocks early; six months is required to properly prepare for new pastures

2. Paddock Preparation

- Control weeds and weed-seed production in the spring and summer prior to sowing a new pasture. Techniques available include grazing, mowing, silage and fodder crops

3. SOWING

- Assess what insects are present, or likely to be, and decide on the best seed treatment or spraying options. Common problem insects are Argentine stem weevil, black beetle, grass grub, porina, and slugs (direct-drilling)
- Order seed several weeks before planting from your retailer, with instructions on the seed treatment you require so it will be available when you are ready to sow
- Wait until pastures are actively growing in early autumn and then use a knockdown spray in order to control germinating weeds. Sowing can commence 3-5 days later
- Ensure that cultivated paddocks are even, and have a fine and firm seedbed
- Sow seed at 10 mm depth. Deep sowing is the most common cause of poor clover establishment
- Press-wheels or a roller are often needed for seed-soil contact and to get the pasture up quickly and evenly
- Paddocks that are being direct-drilled should also be level and clear of excessive trash
- Use fertiliser at sowing. Ready access to nitrogen (N) and phosphorous (P) will ensure rapid and vigorous early growth

4. MONITORING THE Paddock AFTER SOWING

- Frequently monitor newly sown pastures for weed and insect pests. Controlling weeds early requires less chemical, is more effective and often has less impact on the sown pasture. Insect pests can decimate an emerging pasture; prompt action prevents significant plant losses and loss of production

5. FIRST GRAZING

- First grazing should only occur once the plant has begun to tiller out and is at least 10 cm high. Ensure plants are firmly anchored in the ground before grazing and avoid over-grazing or pugging damage
- Calves or heifers are best, and avoid grazing when the soil is wet
- Consider an application of N-based fertiliser after the first grazing to promote quick recovery and to encourage further tillering of the plants

What is Undersowing?

The practice of undersowing, where seed is drilled into old or failing pastures (without sprayout), is a common practice on many farms.

Pastures with low numbers of ryegrass plants will produce little feed over the all-important winter period. Drilling with the right seed to boost sward density can be a cost-effective way of maintaining pasture production over these periods while also improving pasture quality.

In past years, undersowing has been a simple management tool used with great success. After recent seasonal extremes (too wet or too dry), farms have much larger proportions of poor performing pastures and farmers can't afford to wait for 10 plus years to get them back up to the required performance.

In an undersowing situation shorter term products such as annuals, Italians and hybrids have more of a fit than perennials as they are quicker to establish and more winter/spring active, making them more competitive for establishment in existing pasture growth rates.



Undersown with **Manta** Italian ryegrass (left) and not undersown (right)

UNDERSOWING CULTIVAR SELECTOR

Pasture Condition Score	Level of Pasture Degradation	Ryegrass Type
	Pasture planned to be renovated in 8 months	Revel Tetraploid Annual Ryegrass NEW
	Pasture planned to be renovated in 12-18 months	Manta Italian Ryegrass LE
	Pasture planned to be renovated in 18 months	Manta Italian Ryegrass# NEW AR37
	Pasture planned to be renovated in 2-3 years	Mohaka Tetraploid Hybrid Ryegrass AR37
	Pasture OK but open	Legion Perennial Ryegrass* AR37

When weeds are controlled, include **Ecotain®** environmental plantain with these undersowing options

#**Manta AR37** is only recommended for beef and dairy.
 ***Legion** has been bred, selected and successfully tested as a perennial and will function as a perennial ryegrass.
 Due to a small number of tip awns **Legion** is certified as *Lolium boucheanum*.

Some of the key considerations when undersowing are as follows

CONDITION SCORE PASTURES

Assess which species will be the best fit for the situation (refer to page 25 'undersowing cultivar selector' for guidance). Having a large area in short term products such as annuals can cost more in the future if feed needs to be imported over the summer when annuals may run out. As annuals have no endophyte they can be a significant host for insect pests, this is an important factor to take into consideration when planning for future pasture rotations.

TIMING IS CRUCIAL

- The longer drilling is delayed, the slower the species will be to establish and therefore reduce winter yield
- Also, the later you start, the more opportunity there is for weeds to fill in the open space, which will limit the result of undersowing

WEEDS

- Check the presence of broadleaf weeds and weed grasses.

SLUG BAIT AND CRICKET BAIT

- If direct drilling or undersowing, slug bait and/or cricket bait are key insurance policies. If you're unsure as to whether these are a concern, put a damp sack out overnight and check under the sack in the morning to detect slugs

FERTILISER

- Sow with start up fertiliser
- Products such as DAP (Di-Ammonium-Phosphate) will give establishing ryegrass plants a great kickstart, as the phosphate is great for root development and the extra nitrogen will help speed up establishment

USE TREATED SEED

- Seed treatments such as Superstrike® will protect new seedlings from pressure for the first six weeks from insects such as Argentine stem weevil and black beetle adults. This is important as grasses with endophyte takes about six weeks for the endophyte to start functioning
- Superstrike® contains a fungicide to protect the seedling from 'damping off' diseases, as well as micronutrients to aid with establishment
- Withholding period for new pasture is six weeks; for undersowing it is three weeks

CULTIVAR OPTIONS

- **Manta AR37[#]** diploid Italian ryegrass: Robust, high yielding diploid Italian. Great for ease of management over the winter, particularly in wetter areas
 - Undersowing rate: 12-15 kg/ha
- **Mohaka AR37** tetraploid hybrid ryegrass: Dense, high quality hybrid with excellent winter production. Increased persistency over an Italian ryegrass
 - Undersowing rate: 18-20 kg/ha
- **Legion AR37** diploid perennial ryegrass*. Dense high-quality perennial with excellent summer and autumn recovery ideal for boosting future summer recovery of an existing perennial pasture
 - Undersowing rate: 12-15 kg/ha

[#]Manta AR37 is only recommended for beef and dairy.

*Legion has been bred, selected and successfully tested as a perennial and will function as a perennial ryegrass. Due to a small number of tip awns Legion is certified as *Lolium boucheanum*.



MAKE YOUR OWN MIX.

MIX/Paddock NAME:

CULTIVAR	RATE (KG/HA)

TOTAL

MIX/Paddock NAME:

CULTIVAR	RATE (KG/HA)

TOTAL

MIX/Paddock NAME:



CULTIVAR	RATE (KG/HA)

TOTAL

MIX/Paddock NAME:

CULTIVAR	RATE (KG/HA)

TOTAL

AR1, AR37, MaxP and MaxR endophytes are used under license from Grasslanz Technology Ltd. AR37, AR542, AR584 and AR1017 endophytes are protected under the New Zealand Plant Variety Rights Act 1987. The  and  logos and MaxR, are registered trademarks of and are used under license from Grasslanz Technology Limited. Ecotain® environmental plantain is a registered trademark in New Zealand. Superstrike® is a registered trademark in New Zealand.

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