PGG Wrightson Seeds

Grass | Annual Grass

Ascend

tetraploid annual ryegrass

performance bred®

Ultrastrike® film coat seed recommended

USES: BEEF DAIRY SHEEP HAY SILAGE

SOWING RATE 15-50kg/ha

RAINFALL / IRRIGATION 500mm pa

Introducing the Winter Star® II replacement

- Exceptional seedling vigour
- Improved early winter production
- High rust tolerance
- Excellent total dry matter production
- Maintains quality late into the season
- Offers real flexibility
- Will grow in a wide range of environments
- Densely tillered and fine leaved compared to Winter Star II

Description

Ascend is a new generation tetraploid annual ryegrass replacing current market leader – Winter Star II. It is an exciting addition to the Australian pasture market, offering improvements to key annual ryegrass features, while maintaining important traits that made Winter Star II the bench mark in annual ryegrass.

The key breeding objective when developing Ascend was to improve seedling vigour and winter production while maintaining the superior late spring/early summer growth of Winter Star II. Most farm systems have a pasture deficit during autumn-winter and rely on supplementary feed to top up the ration. Extra pasture growth during this period reduces the need for expensive feed supplements and frees up labour for more rewarding tasks. The high quality late season feed that set Winter Star II apart from so many other annual ryegrasses has been maintained, capitalising on any late spring rain and extending the growing season compared to traditional annual ryegrasses.

During the breeding process rust tolerance has been continually enhanced, improving quality and animal acceptance when rust pressure is high during warm and humid conditions. By advancing these key traits, the breeding team have created a well-rounded and robust product for the Australian farmer.

Ascend has been trialled extensively for 5 years across many regions of Australia and New Zealand. During that time it has performed consistently and repeatedly showcased the traits it was selected for. For the past 2 years, PGG Wrightson Seeds has committed Ascend to the ultimate test: Australian farmers and their animals sowing it on leading farms across Australia. Farmers were asked to monitor these paddocks and objectively assess how they observed Ascend's performance against other varieties, in particular Winter Star II. The results and feedback from farmers has been extremely positive indicating an exciting future for Ascend.

| Image 1

The photo above is of a paired paddock comparing Ascend and Winter Star II near Taralga, Southern NSW in 2017. Ascend is on the left and Winter Star II is on the right. The paddock was sown on the 20th of April, 2017 and the photo was taken on the 11th of May, 2017. The demo clearly showed the increased seedling vigour of Ascend.

Grazing Management

The increase in seedling vigour may shorten the time to first grazing, however it is important to closely monitor plants and prioritise strong establishment. Always monitor the growth stage of any establishing pasture plants and perform pull tests to ensure sound root development. A well anchored root system allows the young plants to tolerate grazing pressure. The importance of the first grazing for early plant and root development should not be underestimated. Tiller development and secondary root development are closely linked to the first grazing and these traits drive overall yield, grazing tolerance and late season longevity. Another important factor to consider when first grazing a new pasture is the stock class and time spent grazing. Choose a lightweight stock class and keep the first grazing as brief as possible to reduce hoof and pugging damage. Take extra care when soil is saturated as pugging is more likely.

During the breeding process, lines were subjected to grazing by sheep in order to select potential lines that performed better under intensive grazing. This is new in the selection of annual ryegrasses and offers robustness, genuine flexibility and overall confidence that Ascend has been thoroughly tested. Ascend expresses dense tillering and finer leaves when compared to Winter Star II. While dense tillering is not a common trait in annual tetraploids, it is a widely recognised benefit aiding temperate grasses to tolerate hard grazing, as demonstrated throughout the selection process of Ascend.

At each grazing throughout the year, leaving some residual leaf is critical to the subsequent pasture growth rates. If no leaf area remains after grazing, the rate of recovery will be much slower and overall yield will be compromised. Rotational grazing is recommended wherever possible leaving 5-8cm un-grazed residual. This will maximise yield potential by allowing Ascend to recover quickly and ensuring the next grazing can occur as soon as possible.

Ascend is an ideal option for fodder conservation such as hay or silage due to its late maturity. As a tetraploid, the quality will be exceptional, and including legumes in the mix will increase the quality even further. Time of cutting is a compromise between quality and quantity. However, utilising a late maturing variety such as Ascend offers key features when producing hay and silage such as:

- Higher Metabolisable Energy (ME)
- Higher Crude Protein (CP)
- Higher yields over the growing season
- Flexibility for time of cutting

While Ascend will have higher late season quality than an early maturing Tetila type annual ryegrass, grazing any annual ryegrass late in the season can be challenging as quality declines quicker than Italian or perennial ryegrasses. It is therefore important to prioritise the grazing and harvesting of annual ryegrass before later maturing species, this maximises the utilisation of the high quality vegetative growth prior to the plant going reproductive.

| Image 2

The above photo taken on the 1st of June, 2017 is of a demo site of Ascend and Winter Star II near Tarago, Southern NSW. It was sown on the 30th of March, 2017 and it was grazed from the 1st of June, 2017. The photo shows no visual difference between the two varieties at the first grazing, but unreplicated dry matter yields conducted highlighted a yield advantage in favour of Ascend.

Breeding

Ascend was bred by Michael Norriss, Programme Leader for Grasses at PGG Wrightson Seeds in New Zealand. Michael has had a close connection with the Australian market over many years and has been responsible for breeding high performing varieties such as Feast II, Lush AR37, Reward Endo5, Maverick GII, Quantum II MaxP and Winter Star II.

The breeding of Ascend started with elite plants selected from Winter Star II and crossed with another elite variety. From this breeding pool lines were subjected to extensive row and plot testing, from which Ascend was selected. Hard sheep grazing was included during early selection to ensure the end product was robust. This resulted in a plant that has a stronger tillering capability and more prostrate growth habit compared to traditional "westerwold" type annual ryegrasses. Most traditional tetraploid annual ryegrasses have more erect tillering and broader leaves which is often mistakenly associated to higher yield. Measurements show that dense tillers and finer leaf types can yield as much as the broader leaved traditional tetraploids and perform well under intense grazing. The key traits of interest throughout the trialling process included:

- Early growth
- Late quality
- Rust tolerance
- Total yield
- Dense tillering

Pest and disease tolerance

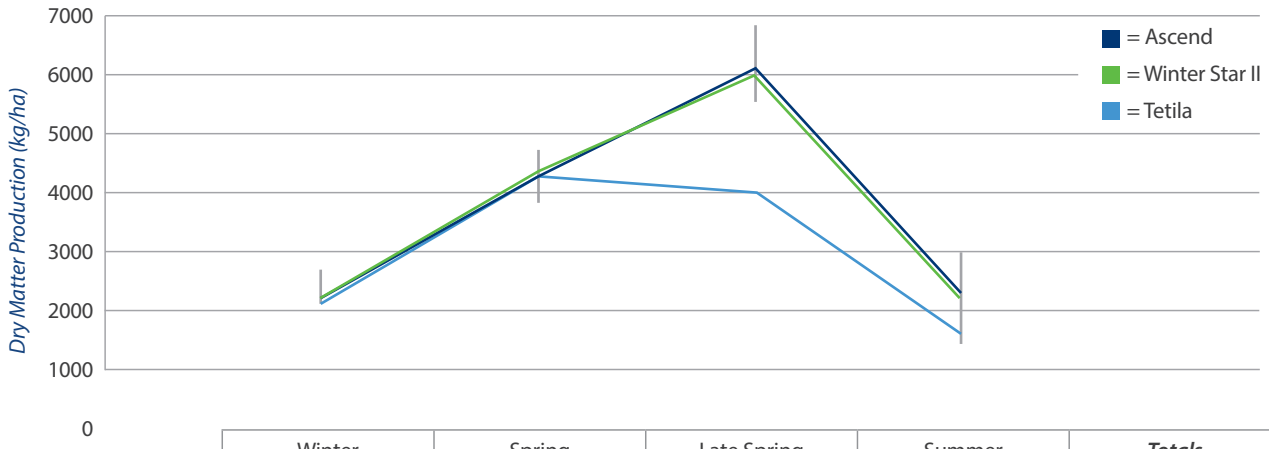
Ascend, like all annual ryegrasses is susceptible to many of the common pasture pests that can affect pasture establishment soon after sowing. In order to get a consistent establishment, treat Ascend with Ultrastrike seed treatment. Ultrastrike includes an insecticide applied to the seed so each seed is protected from the time of sowing through the first 6 weeks of germination and establishment. Ultrastrike will help protect against insects including Red Legged Earth Mite, Cutworm, African Black Beetle and offers suppression on Lucerne Flea.

Whether the seed is protected with Ultrastrike or is sown bare, close monitoring is required to ensure that changes in insect pressure are identified and can be promptly addressed. This will require a weekly paddock walk for the first 6 to 8 weeks to confirm that the newly sown pasture is establishing correctly. If damage is evident in establishing plants be sure to seek identification and remedy from the local rural retailer or your local PGG Wrightson Seeds sales agronomist.

Ascend was selected for increased tolerance to stem rust. Stem rust causes a decrease in yield, pasture quality and animal acceptance. Rust occurs where air temperature is above 25 degrees and moisture at ground level is high. This creates a humid environment around the plant and ideal conditions for rust strains to be expressed. Rust can be controlled using foliar fungicides, but seek the advice of your local rural retailer for correct identification of the type of rust, the registration of chemicals and whether it is financially viable to use a fungicide.

Trial Data

Annual Ryegrass Trials at Leigh Creek, Ballarat, VIC. 2012, 2013 and 2015 | Figure 1



	Winter	Spring	Late Spring	Summer	***Totals***
Ascend	2368	4286	6042	2193	15,447
Winter Star II	2286	4383	5897	2025	15,239
Tetila	2116	4303	3950	1593	12,677

Figure 1: Combined seasonal yield analysis of annual ryegrass plot trials at Ballarat, Victoria from 2012, 2013 and 2014. The graph shows the early vigour of Ascend is equal or greater than the early annual Tetila, while still maintaining strong late season production similar to Winter Star II.

Rust scores from 2013 row trial at Gatton, Queensland | Figure 2

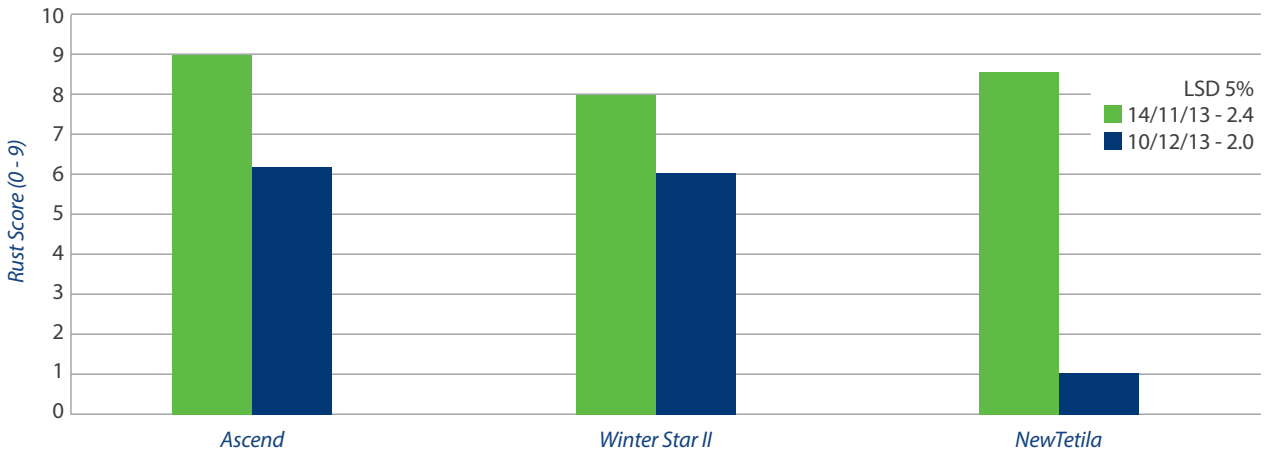


Figure 2 shows the improved rust tolerance of Ascend in rust screening trials conducted at Gatton in Queensland. This also shows the significant gains in rust tolerance that well-bred varieties have over common types.

The data shows that there was minimal rust present at the first assessment conducted on the 14th of November. By the time the second assessment was conducted on the 10th of December the rust was fully expressing itself. This is evident in the low score of 1 for Tetila, indicating that there was very little green plant material visible.

Rust score is a visual assessment with a score of 9 being no rust and a score of 0 being completely covered in rust.

Sowing and Establishment

Ascend tetraploid annual ryegrass can be utilised in many different situations and environments. Therefore, Ascend's sowing rate should be circumstance specific. As a guide only to the sowing rates of Ascend:

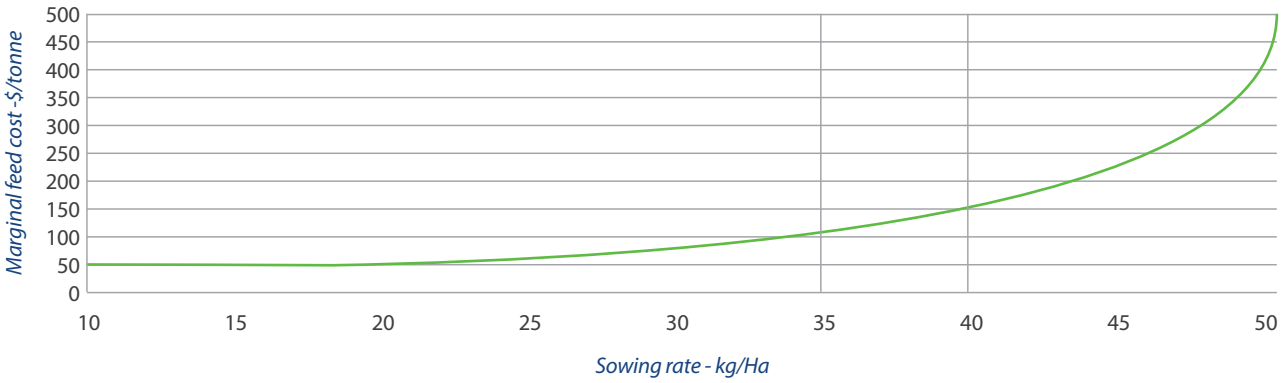
Environment	*Ascend only (35kg optimum)*	*Ascend in a mix*
Low to medium rainfall	15 – 35kg	15 – 20kg
Medium to high rainfall	25 – 45kg	15 – 30kg
High rainfall	30 – 45kg	20 – 30kg
Irrigation	25 – 45kg	15 – 30kg

When oversowing into a kikuyu based pasture, increase the sowing rate to 50kg/ha to better compete with the highly competitive kikuyu. Research by DEPI (Project 3030, 2011) and PGG Wrightson Seeds (2003-2015) demonstrates the profit maximising sowing rate of annual ryegrass in drilled monocultures (without clover) is 35-40 kg/ha. The research was conducted in a range of environments including high and low rainfall regions across south eastern Australia (winter dominant rainfall). Winter yield increased in each region regardless of total annual rainfall. This is because during winter in south eastern Australia, growth of emerging pasture is less limited by nutrient and water availability (often available in excess), and more limited by access to sun light and low soil temperature. Increased sowing rates in annual and Italian ryegrass increases light interception in winter, improving winter pasture growth rates. Once plants are fully tillered in spring the benefit declines.

Figure 3 below shows the relationship between increasing the sowing rate of annual ryegrass to grow more home grown feed and the increasing cost of that additional feed. If the cost of an alternate supplementary feed source is known, it is possible to work out the optimum sowing rate minimising the cost of the total ration. For example, the first vertical line at 35kg/ha shows that the marginal feed cost will be approximately $110 per tonne and the second vertical line at 40kg/ha shows that the marginal feed cost will be $150 per tonne. Both are likely to be lower than the cost of acquiring, transporting and feeding a supplement of similar quality. Therefore to minimise the cost of feed during winter where the cost of an equally high energy and protein supplementary feed is likely to be in excess of $200 per tonne, the sowing rate should be between 35kg/ha and 40kg/ha (if sown as a monoculture).

The benefit of increasing annual ryegrass sowing rate from traditional rates (10 to 25 kg/ha) to proven optimums (35-40kg/ha) is substantial, with reduced cost of supplementary feed ranging from approximately $80 to $180/ha/year depending on the cost of seed and supplementary feed.

Effect of sowing rate on marginal feed cost in annual ryegrass. Harmer et.al (2012) | *Figure 3*



When sowing Ascend, whether it is on its own or in a mix, sowing depth is important. The ideal depth for sowing any small seeded species is no deeper than 10mm. Deeper sown seed will delay emergence, increase the time to first grazing and reduce winter growth rates. Seed to soil contact is also important, so the use of either a roller or press wheels is recommended to achieve this.

During the establishment period, regular monitoring of the paddock is advised to monitor germinating weeds. Weeds should be controlled in all pasture situations as they compete for valuable moisture and nutrients. Seek the advice from the local rural retailer or the local PGG Wrightson Seeds sales agronomist for correct identification of weeds. They will recommend the best cause of action to manage the weeds and increase the quality of the pasture grown.

Image 3

The 2 photos above were taken of an Ascend demo near Naracoorte, South Australia on the 11th of September, 2017. It shows the dense tillering nature of Ascend on the left which is improved over leading variety Winter Star II on the right.

Learning - Ascend

For more information on Ascend Tetraploid Annual ryegrass visit the Ascend page at
pggwrightsonseeds.com.au

Ascend - Fast Facts

Class of Stock	Dairy, Beef, Sheep	***Treatment recommended***	Ultrastrike®
Sowing Rates	15-50kg/ha (35kg/ha optimum)	***Heading Time***	Late (+9 days)
When will feed be available	Autumn, winter and spring	***Ploidy***	Tetraploid
How can it be used	Grazing, Silage, Hay	***Endophyte***	Nil
Rainfall guide	Minimum 500mm rainfall per annum unless irrigated		

LET'S GROW TOGETHER

Planning your forage and seed requirements in advance can make a big difference to your productivity. For over 75 years PGG Wrightson Seeds have been working with farmers to get the balance right.
To discuss your growth plans call your Sales Agronomist now.

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