

TYSON AR1
PERENNIAL RYEGRASS



BARENBRUG
agriseeds



**Drag spring forward,
with Tyson.**

DO YOU WANT 35% MORE EARLY SPRING GROWTH?

Tyson is a leap forward in perennial ryegrass genetics.

It has been 19 years in development to give red meat farmers 35% more pasture growth in early spring, while still providing high summer - autumn yield and persistence.

This booklet explains how *Tyson* can enhance sheep breeding systems. *Tyson* will work equally well for breeding cows.

Read on to find out why we are so excited about bringing *Tyson* to the market, and more importantly, how to get the full benefit from *Tyson* in a sheep breeding operation.



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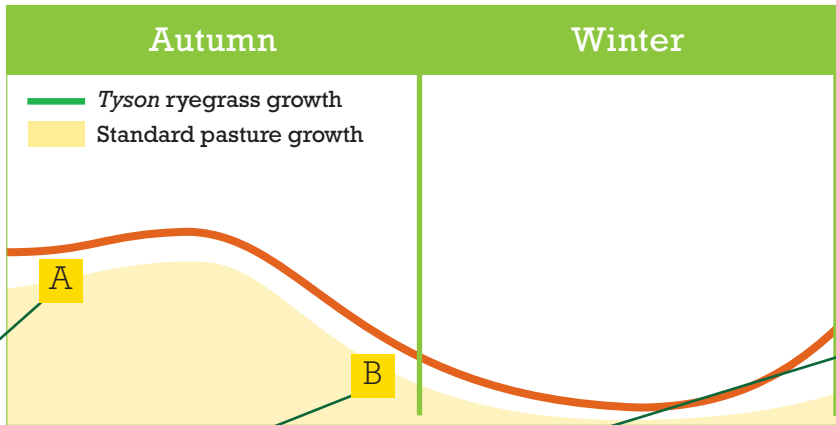


1 SUMMARY

Getting the best from Tyson

In Brief

Tyson ARI is bred for tremendous early spring growth, but needs the right farm system thinking to capture its full genetic potential. Here's what to focus on, and why.



A - Autumn decisions

Key management decisions in early autumn dictate pasture covers at the end of autumn. Examples? Strategic N fertiliser, quitting stock vs holding them too long.

[See Section 3](#)

B - End of autumn cover

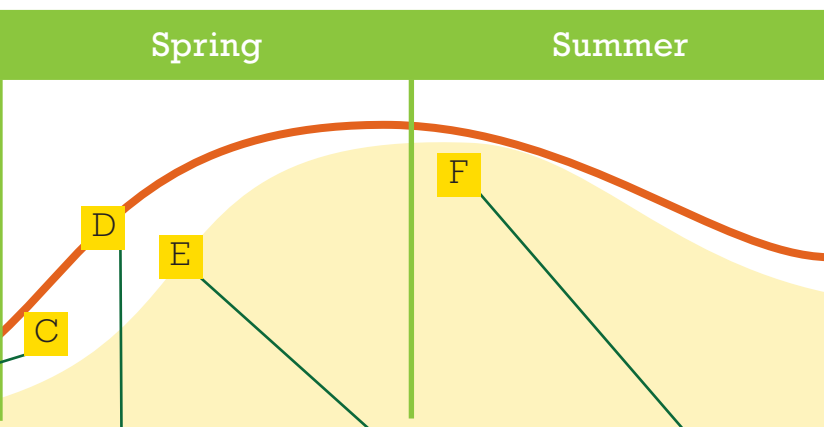
The amount of pasture you have at the end of autumn sets up spring.

[See Section 3](#)

C - Spring cover target

Correct pasture covers in spring are critical to maximise DM growth rates; 'grass grows grass' at this time of the year.

[See Section 2](#)



D - 35% more early spring yield

Tyson has outstanding daily DM growth rates in early spring.

See [Section 3](#)

E - Faster lamb growth

More pasture means ewes eat more and milk better; lambs grow faster.

See [Section 4](#)

F - More lambs finished at weaning

Lambs drafted off mum aren't checked by weaning, and meet early export schedules.

2 SPRING PASTURE COVER TARGET

In Brief

In early spring pastures have a 'sweet spot' of cover, where both animal intakes and pasture growth are high.

Tyson ARI has tremendous early spring growth; by lambing at the right covers you'll capture its full potential.

Pasture target for lambing

For near optimal pasture and lamb growth, best practice minimum pasture covers for lambing are:

- **Single lambs** 1200-1300kg DM/ha or 3-4cm pasture height
- **Twin lambs** 1500-1600kg DM/ha or 4-5cm pasture height
- **Triplets** 1700+kgDM/ha or 5-6cm pasture height

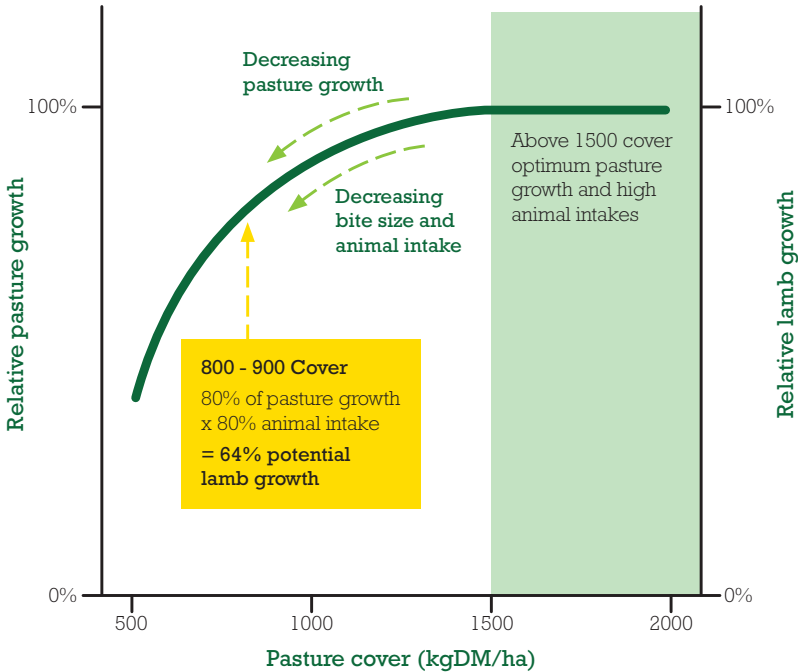
Note – these are minimums; you don't want to fall below these.

Grass grows grass

A pasture cover of 1500kg DM/ha (or 4-5cm pasture height) in early spring allows plants to grow at their maximum. That's because there's enough leaf area present to capture all available sunlight for photosynthesis. This is the science behind the old adage 'grass grows grass'.

At a cover of 1200-1300kg DM/ha (or 3-4cm height), pasture is growing close to optimum, and is suitable for ewes with single lambs.

Often covers drop to 800-900kg DM/ha (or 2cm height) 3-4 weeks into lambing. This cuts potential DM growth by 20%, so you're only growing 80% of what you could be. Worse still, animal intakes are also cut.



Pasture cover vs animal intake

There is a direct relationship between pasture allowance in early lactation and growth of suckling lambs. Having enough pasture available while ewes are milking means they can feed themselves and their lambs well.

A pasture cover of 1500kg DM/ha (or 4-5cm pasture height) or more in early spring means maximum bite size, and high animal intakes. As pasture height drops so does bite size, and although ewes take more bites (working harder), overall both their pasture intake, and lamb growth rate, drop as shown in the diagram above.

When pasture cover drops below 1200kg DM/ha (or 3cm height) animal intakes start to fall sharply.

At a cover of 800-900kg DM/ha (or 2cm height) animal intakes are only 80% of their potential. Combine this with pastures only growing at 80% of their potential (see 'grass grows grass') and your lamb production system is now running at 80% of 80%, or 64% of what it could be. This happens on many farms.

Trouble shooting

Struggle to reach target covers at lambing?

The most common reason for this lies in management decisions made in autumn. Check through the steps in Section 3.

If covers are low in winter, consider feeding crop or supplement as long as possible, and set stock for lambing as late as possible. This will maximise your pasture cover, which increases daily DM growth rates, which in turn will help grow you out of the feed deficit more quickly. Grass grows grass!

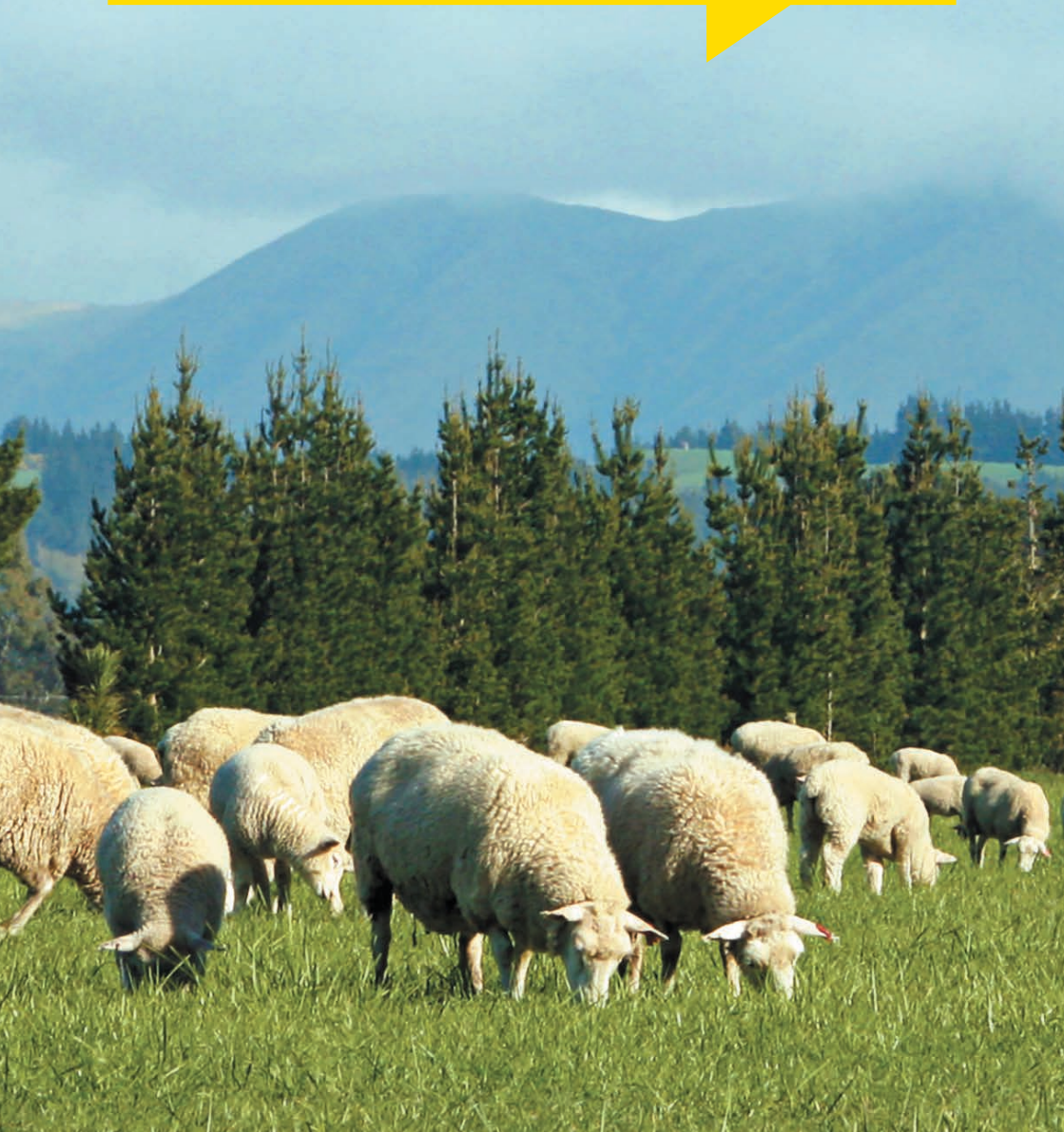
Lamb onto right cover, but run out of grass 3-4 weeks later

If this happens frequently, it is typically caused by one of two reasons. First, your lambing date may be too early, occurring before pasture growth comes away (i.e. soil temperature is still below 8°C). Lambing later, when soils are warmer, will often give a better result at weaning. *Tyson* will also help solve this with its significantly higher early spring yield.

Second, ewes could be set stocked for lambing at too high a rate. Feed demand exceeds daily pasture growth rates, and paddocks are grazed out.

Regardless of management or planning, pasture will be tight some years simply due to cold spring weather and low pasture growth rates.

“Finishing lambs straight off mum means you avoid a growth check at weaning, free up feed for other stock, and meet early export schedules.”



3 HOW TO ACHIEVE YOUR TARGET PASTURE COVER

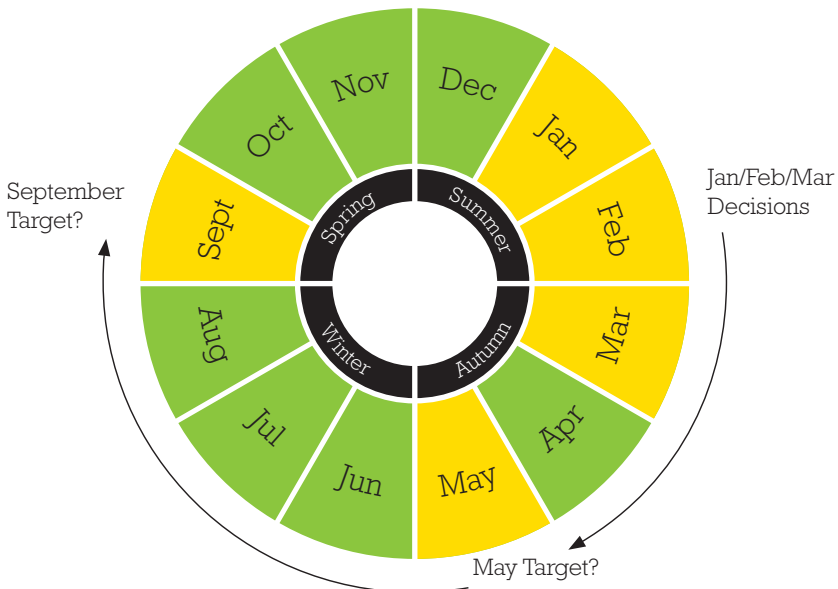
In Brief

To maximise early spring growth you need the right amount of pasture cover, to intercept light and allow ryegrass to grow to its potential. Achieving target covers at lambing starts with decisions made the previous autumn.

The wheel of fortune: 3 key feed planning decisions:

1. Set your target pasture cover for lambing.
2. Work back from your target cover at lambing, using a winter feed budget, to determine how much cover you need to have by May (end of autumn).
3. Set the right stock policies between January and March to ensure the May target is achieved.

These flow onto each other as shown below.



Trouble shooting

Pastures are overgrazed in summer/autumn

This limits your chances of achieving the May target. Avoid holding onto stock too long when this starts to jeopardise the coming spring (e.g. trying to finish those tail end lambs). A flexible stock policy will allow you to quit stock if necessary to ensure the May target can be reached.

Autumn drought halts growth

Ideally quit trading stock; hold breeding stock in a sacrifice block, and feed supplements. Continue this for 3-4 weeks after it rains, so pasture covers can build up again. Grazing new regrowth too early (i.e. the first pick or at the one leaf/tiller stage) damages pastures and greatly hinders your recovery.

Autumn growth rates fail to meet the May target

Use N strategically in autumn across much of the farm at 25-30kg N/ha as a 'circuit breaker', to boost pasture growth and cover. Soils must be moist and warming up, i.e. above 8°C (preferably above 10°C). Using autumn N to reach target covers has proved highly cost effective, especially with high fecundity ewes.



4 TECHNICAL INFORMATION

In Brief

Tyson AR1 is a fine leaved, densely tillered diploid perennial ryegrass, with the earliest heading date available. *Tyson* has tremendous early spring growth, to feed stock better through the critical period of early lactation.

Dry matter yield

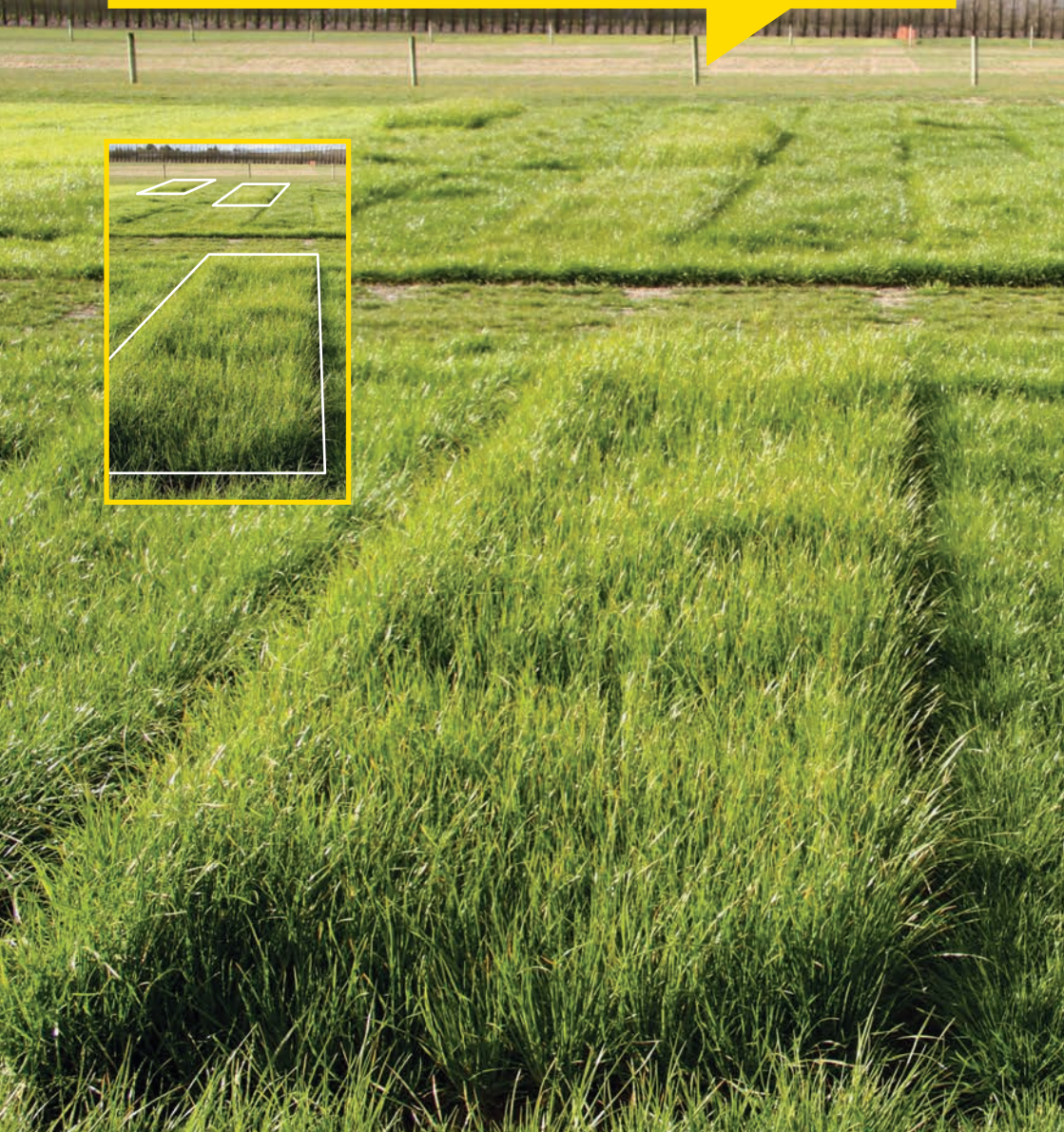
Tyson has tremendous early spring growth, in August and September, growing 35% more than the trial mean yield as shown in the data below from inland Canterbury (altitude 190m ASL). Total yield of *Tyson* over the whole year is excellent, with strong seasonal yield in summer and autumn.

Seasonal dry matter yield of perennial ryegrasses 2014-17 (relative to trial mean = 100%)

Cultivar	Autumn	Winter	Early Spring	Late Spring	Summer	Total
<i>Tyson AR1</i>	112 a	111 ab	135 a	101 bc	106 ac	109 a
<i>Excess AR37</i>	107 ab	104 ab	93 cd	99 bd	105 ad	104 ab
<i>Trojan NEA2</i>	105 ab	101 b	102 bc	103 ac	109 a	102 ab
<i>Rely AR37</i>	101 ab	95 bc	109 b	97 ce	90 d	100 ab
<i>One50 AR37</i>	102 ab	121 a	91 cd	104 ab	107 ab	100 ab
<i>Abermagic WE</i>	102 ab	67 d	85 d	109 a	89 d	98 b
<i>Request AR37</i>	96 bc	106 ab	107 b	90 f	90 cd	96 bc
<i>Rohan NEA2</i>	87 c	82 cd	84 d	92 df	89 d	87 cd
<i>Barrier Combo U2</i>	70 d	68 d	85 d	91 ef	91 bd	84 d
Trial mean (kgDM/ha)	2253	671	1315	3386	3432	11109

Data from Courtenay, Canterbury, 2014 – 2017. Statistical significance lettering to the right of each yield figure, yields with the same letter are not significantly different at the 5% LSD level.

Tyson plots (marked in white) showing extra early spring yield in mid-September against a range of other cultivars at Courtenay, Canterbury (altitude 190m ASL).



Genetics

Tyson was created from elite plants selected from a cross of two Agriseeds perennial ryegrass cultivars, *Meridian* and *Arrow*.

Meridian was released in 1998 with exceptional early spring yield, but poorer summer and autumn yield. In the past 19 years *Meridian* has been used as a parent plant, crossed with other genetic material, with the goal of retaining its exceptional early spring advantage, but increasing its total DM yield. The result is *Tyson*.

Heading date

Tyson AR1 is the earliest heading of any perennial ryegrass on the market, with a -7 day heading date. For improved feed quality through the remainder of the season, *Tyson* was carefully selected for low aftermath heading (the second seed-set over late spring-summer).

Fine leaved

Tyson AR1 is a fine leaved, densely tillered diploid perennial ryegrass suitable for both set stocking and rotational grazing.

Endophyte

Tyson is available with AR1 endophyte, which provides very good control of Argentine stem weevil and pasture mealy bug, with no negative impacts on animal health.

Suggested seed mix

The following is a base seed mix for *Tyson* with two high performance smaller and medium leaved white clovers.

For extra early spring feed	kg/ha
<i>Tyson</i> perennial ryegrass	16-20
<i>Apex</i> white clover	2
<i>Weka</i> white clover	2
Total	20-24

Possible additions to this base seed mix are:

- *Captain* plantain at 2kg/ha – will provide extra feed value, lasts 2-3 years.
- *Tuscan* red clover at 5kg/ha – highest stock performance in summer, lasts 2-3 years.
- Timothy at 1kg/ha – a high digestibility grass that suits summer moist areas.





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