

TALL FESCUE MANAGEMENT GUIDE



Introduction

Tall fescue is an exciting grass species that has proven itself to be an answer to pasture persistence and performance in hot summer environments or on some difficult soils. Like all species some small changes need to be made to establishment and management practices to get the best out of it.

This guide summarises the main management requirements that are specific to tall fescue.



Why Tall Fescue?

Tall fescue is considered an alternative perennial grass to ryegrass. It will grow in most environments ryegrass grows, but has better tolerance of dry soils, hot temperatures, and insects. As a result, it is often more productive and persistent than ryegrass. Trials have shown it to typically grow 30% more than ryegrass in summer and autumn and 20% annually once fully established.

The feed quality of Advance (the predecessor to **Hummer**) tall fescue is the same as perennial ryegrass, and often better in late-summer and autumn. Research on milk production on Advance in dairy cows reinforces feed tests, with equivalent milk production in spring, but up to 34% more in summer and autumn when allocated the same

amount of feed (Table 1). The performance of lambs on tall fescue is similar to high quality ryegrasses with AR1/AR37/nil endophyte.

Winter growth of tall fescue is similar to most traditional ryegrass cultivars. In cold winter climates, it often begins early-spring growth sooner and more strongly than ryegrass. It is ideal for carrying autumn-grown feed into winter, so stock carrying capacity in winter and early-spring is similar to ryegrass.

The combination of better seasonal pasture growth and the same, or better, stock performance is the reason many farmers produce more animal product per hectare than from perennial ryegrass.

Table 1: Milk Production From Two Grass Species Allocated at the Same Rate. Mean of Summer and Autumn (Melbourne University, 2003)

	Perennial Ryegrass	Advance Tall Fescue	Difference
Milk Production (litres/cow/day)	9.8	13.1	+34%

Where is Tall Fescue Suited?

Tall fescue grows well throughout Australia, but advantages over ryegrass are greatest in environments with hot summers, soils that often dry out, and where insects are common.

The optimum temperature for growth in perennial ryegrass is 20°C, with production declining above 24°C. The optimum for tall fescue is 26°C, with active growth continuing into the mid 30°C range. This explains the large and consistent advantage to summer active tall fescue over our Australian summers. Even when irrigated, making it a more water-efficient grass than ryegrass in regions with warm-hot summers.

In dryland conditions, tall fescue will grow more feed and recover better from droughts due to its deeper root system, and has the ability to restrict moisture loss when stressed.

MaxP® is a novel endophyte selected by AgResearch for tall fescue. It provides the plant resistance to black beetle, root aphid, pasture mealy bug and Argentine stem weevil. This results in large improvements to persistence and drymatter production, with no known negative effects on animal health or production in continental types like **Hummer**. It is therefore recommended for most regions.

Tall fescue as a species has greater tolerance to grass grub than perennial ryegrass due to the larger root system and plant growth habit.

Most soil types are suitable for tall fescue, but soil fertility (especially Nitrogen) needs to be good for reliable production and persistence.

As tall fescue is a poor competitor with weeds when establishing, and sensitive to seeding depth, it is not recommended where paddock preparation is poor. Unless farmers are very experienced with tall fescue, it should only be planted on country that can be mown with a tractor. Management of tall fescue will also be



difficult on farms with a low stocking rate (especially in spring), or poor sub-division.

Tall fescue is recommended for most stock types. Dairy farmers use it because it has been shown to increase milk production and pasture persistence compared with perennial ryegrass. Sheep and beef farmers use it for most stock classes, but it is often used for stock with the highest need for liveweight gain due to the higher clover content in tall fescue pastures leading to improved animal performance in summer.

Tall fescue is suitable for silage and hay production, but this is not recommended in the first spring.



Root aphid



Fescue seedling roots

Establishment

Tall fescue is slower to establish than ryegrass (especially in cold soils), and is therefore prone to competition from weeds. Controlling weeds, and time of planting, are therefore the crucial aspects of establishing tall fescue. Preparation for establishment needs to be thorough and may take more than one year.

The key is to minimise the re-establishment of weeds and unwanted grasses in the young fescue pasture (Table 2). Prevent the seeding of these weeds for 1-3 years before planting tall fescue. Ensure all weeds are effectively killed before sowing. If you have a clean seedbed, the success of establishment is greatly improved because even if germination and development of the fescue is slower than expected, it will still get through to the first growing spring and then develop quickly.



Autumn	<i>Poa annua</i> , brome grasses, barley grass	Prevent seeding for 1-3 years before planting. Plant early. Consider planting in spring.
	Ryegrass	Prevent seeding for 1-3 years before planting.
	Chickweed, thistles	Post-emergence herbicides.
	Fathen, nightshade, wireweed, thistles.	Post-emergence herbicides.

Some herbicides can be used to control *Poa annua* and ryegrass after sowing, but they damage clover and are not registered for use on tall fescue. When using post-emergence herbicides it is essential to apply them early to ensure an effective kill and to prevent smothering of small tall fescue seedlings.

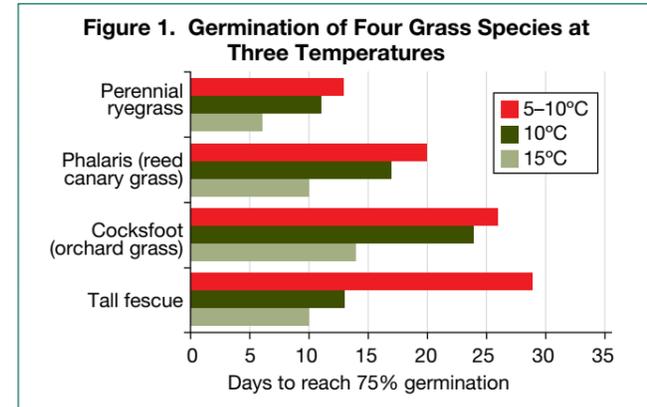
In the preparation phase, it is common for farmers to grow forage or grain crops and utilise available herbicide options for

these crops to control weeds and prevent weeds from reseeding prior to the establishment of tall fescue. If crops are not needed, a fallow period will often be required to go from old pasture to tall fescue. An example of this is direct-drilling on a sheep/beef farm, where the old pasture is sprayed out in October before pasture reseeds, fallowed over summer and sprayed again in February before drilling. Full cultivation is a widely used option, however, it is important to spray existing pasture before cultivation starts.



Establishment

Timing of planting is also crucial. Tall fescue establishes quickly in warm soils, but not in cold soils (Figure 1). Planting in autumn when soils are cool (5 to 10°C) will result in slow germination (28 days) and then slow growth in winter, which allows weeds (e.g. chickweed) and other grasses (e.g. *Poa annua*, ryegrass) an opportunity to smother tall fescue over winter. When planted in autumn in 12-15°C temperatures, tall fescue is competitive with most weeds. Some weeds germinate in late-autumn (e.g. *Poa annua*), so planting fescue early gives those seedlings



a head start. A common mistake is sowing tall fescue seed too deeply, with the ideal depth being 10 mm. Planting after cultivation requires the seedbed to be firm, fine and level. Seed is best sown with a roller-drill when cultivating.

Direct-drilling is a suitable method for establishing tall fescue. The same principles of preparation apply, with weeds prevented from seeding for 1-3 years, through a series of crops or fallows. Slugs need to be monitored and controlled well. A nitrogen-based fertiliser (e.g. DAP) should be drilled with the seed.

Tall fescue seed is larger than ryegrass seed, and tiller development is slower in the first year, consequently sowing rates need to be higher. Tall fescue seed should be sown at 20-25 kg/ha (Table 3). Ryegrass should never be mixed with tall fescue due to competition during establishment. Tall fescue is highly compatible with white and red clover, chicory, plantain and lucerne due to slower establishment than ryegrass.

Tall fescue seed is often treated before planting. While tall fescue with **MaxP** novel endophyte is tolerant of, or resistant to most insects once established, it is susceptible as a seedling to Argentine stem weevil (ASW), black beetle and grass grub. KickStart™ will provide protection from ASW, black beetle and grass grub. Once tall fescue is established it will tolerate grass grub due to its large, deep and thick roots. Where soils are infested with grass grub at establishment, a long-term insecticide may be required to get a full establishment of tall fescue. Bare seed can be used where these insects are not present or likely.

Careful grazing of pastures during establishment is important. First grazing should be delayed until fescue plants have reached 15-20 cm in height. Plants must first be checked to ensure they will not pull out when grazed. Graze to no less than 7 cm in height over a brief period (1-2 days) with light stock (e.g. sheep or calves). This should be repeated for the next 1-3 grazings.

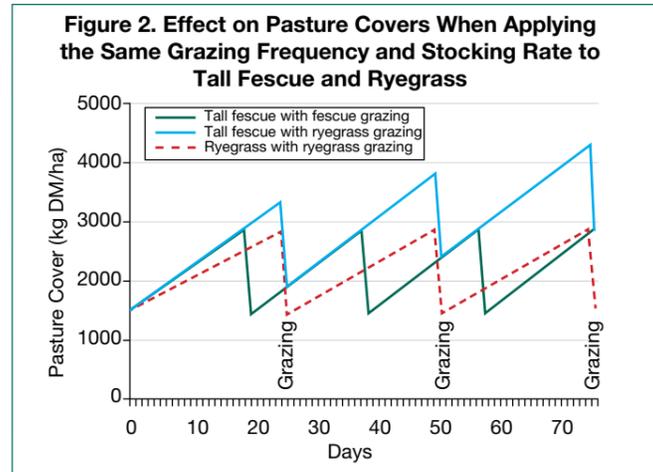
	Dairy pasture (kg/ha)	Sheep and beef pasture (kg/ha)
Hummer MaxP tall fescue	25	25
Tribute white clover	2*	3*
Mainstay white clover	3*	-
Relish red clover	optional (4)	4
Choice chicory	optional (1)	optional (1)
Tonic plantain	optional (2)	optional (0.5)
Total	30	32

* Clover rates are for bare seed, increase if using KickStart™ treated seed.

Management

The most important aspect of grazing management for tall fescue in Australia is utilising the pasture growth effectively and maintaining pasture quality.

The most common mistake made when managing tall fescue is to use the same stocking rate and grazing frequencies as ryegrass. When this occurs, pasture cover is too high for animals to eat all of the pasture, leaving a high residual, which then compounds to an even higher cover at the next grazing and more left behind by the stock. This is often confused as tall fescue being less palatable, but it is just a function of too few animals and not grazing often enough (Figure 2).



Tall fescue often grows faster than ryegrass in early spring, so pastures need to be grazed more often (Table 4), and higher stocking rates are required. If you think of tall fescue as a ryegrass that can grow 30-50% faster than a normal ryegrass in certain seasons, then you will have a better understanding of the management required.

It is critical to graze tall fescue before it exceeds 3000 kg DM/ha (about 18 cm) during the growing season, with a post-grazing yield of 1500 kg DM/ha (about 3 - 5 cm) (see Table 4). This will require tall fescue paddocks to be grazed when they are ready, not as part of a fixed rotation.

The most critical period to ensure the stocking rate and grazing frequency is correct is October-November, when the growth of



tall fescue can increase quickly, and if poorly utilised, will develop stem in the pasture.

On dairy farms, blocks of several adjacent paddocks of tall fescue should be planted to reduce the amount of changes cows make between ryegrass and tall fescue. It is not recommended to only graze tall fescue at night due to naturally lower utilisation rates by cows.

Stocking Rates

On dairy farms, for every hectare of tall fescue established, an extra 0.7 cows should be carried to utilise pasture at the same rate (using a base stocking rate of 3 cows/ha).



Season	Grazing Frequency (days)	Pre-mass Grazing (kgDM/ha)
Winter	30-50	2500 - 3500
August - 15th September	25	< 2800
15th September - December	7-12	2500 - 2700
December - April	14-20	< 2800

Management

Spring Management

On sheep farms, it is ideal to rotationally graze tall fescue in spring with weaners or cattle, if there are sufficient numbers. If there are not enough dry stock available, established tall fescue paddocks should be stocked with 20-30% more ewes at lambing, using mainly multiple-bearing ewes. Tall fescue is tolerant of set-stocking once established, provided that covers are not kept low during drought periods. Adding ewes and lambs from neighbouring paddocks may also be needed at tailing/docking to maintain pasture below 7-10 cm. Where it is not possible to match pasture growth in October/November with stock numbers, silage, hay, or topping, may be needed to maintain quality for weaning.

Summer Management

Tall fescue should be grazed when it has recovered to the pre-grazing masses listed in Table 4. During droughts, there is a temptation to over-graze fescue pastures because they are often the only green paddocks on the farm. This can lead to thinning of the grass plants, poor recovery after drought, and reduced persistence.

Autumn Management

Tall fescue is an ideal grass to spell in autumn and carry feed into winter, and is commonly practiced in North America ("stockpiling"). The reason for this is that it has very good frost tolerance and the herbage maintains quality better than other species. This is not recommended on soils that are prone to pugging.

This practice is also good management for the plant because spelling in autumn is recommended for assisting tiller and rhizome development. Autumn nitrogen also assists rhizome and tiller development, which impacts on future production and persistence. Tall fescue also appears to be very responsive to



plant growth regulators, and this may be a management tool to use to increase winter growth.

It is not wise to carry autumn-grown tall fescue through to spring. Dairy farmers have found this to be low in palatability, and this is a function of the age of the leaves. It is better to graze pastures by early-winter and rely on fresh growth in early-spring.

Fertiliser

Tall fescue has similar soil fertility and fertiliser requirements to ryegrass. It is more responsive to autumn-applied N fertiliser than ryegrass, with responses of 12 to 25 kg DM/kg N being recorded. It also responds better to nitrogen in summer.

Nitrogen availability is an issue on dryland tall fescue. While the grass is very persistent, white clover often disappears after 2-3 years, and then very little N is fixed and made available for the grass. As a result, tall fescue in dryland pastures over three years of age is often N-deficient, and this results in slow grass growth, long periods between grazing, and grass which is lower in palatability. Nitrogen fertiliser can remedy this, but with increasing prices, introducing legumes by oversowing with white and subterranean clover is more sustainable. When planting tall fescue in these environments, consider using more drought tolerant legumes, such as sub clover or lucerne in the mix.



Longer grazing rotations and Nitrogen is recommended in the autumn

To find out more about tall fescue options for greater performance on your farm talk to your local distributor:

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NSW, QLD

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Stephen Pasture Seeds

VIC, SA, TAS

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