

# TALL FESCUE MANAGEMENT GUIDE



# Introduction

Tall fescue offers many advantages over other grass species, but like all species some small changes need to be made to establishment and management practices to get the best out of it. The management practices farmers and advisers have learnt over many years are specific to perennial ryegrass, so new methods need to be learned and applied for tall fescue.

Several myths about tall fescue still circulate, including; poor palatability, poor stock performance, difficult establishment, difficult management, and poor winter production. While some of this may have been true many years ago with old cultivars and poor understanding, they are no longer valid. This guide summarises the main management requirements that are specific to tall fescue.



A dairy farm in Canterbury that only uses Advance tall fescue

## Why tall fescue?

Tall fescue is considered an alternative perennial grass to ryegrass. It will grow in most environments that 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 tall fescue to typically grow 30% more than ryegrass in summer and autumn, and 20% annually.

The feed quality of **Advance** tall fescue is the same as perennial ryegrass, and often better in late-summer and autumn. Research on milk production 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 ryegrass

	<b>Perennial ryegrass</b>	<b>Advance tall fescue</b>	<b>Difference</b>
Milk production (litres/cow/day)	9.8	13.1	+34%

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 on tall fescue than they do from perennial ryegrass.

## Where is tall fescue suited?

Tall fescue grows well throughout New Zealand, but advantages over ryegrass are greatest in environments with warm-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 why there is a large and consistent advantage to tall fescue in Northland, but a smaller and variable advantage in



Fescue seedling roots



Grass grub

Southland. It also explains why tall fescue grows more than ryegrass in summer in Canterbury, even when irrigated, making it a more water-efficient grass 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 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 negative effects on animal health or production. It is therefore recommended for most regions.

Tall fescue has a greater tolerance to grass grub than ryegrass, due to the larger root system and resistance to most other insects (applies to cultivars with MaxP® endophyte only).

Most soil types are suitable for tall fescue, but soil fertility (especially N) 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



MaxP tall fescue in the Mackenzie Basin

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

**Advance** tall fescue is recommended for most stock types. Dairy farmers use it because it is shown to increase milk production and pasture persistence compared with perennial ryegrass. Sheep and beef farmers can 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 and animal performance in summer. Other cultivars are not as well suited to dairying or lamb finishing because of poorer palatability and early heading.

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

## Establishment

A perception exists that tall fescue is very difficult to establish, but in reality many thousands of hectares have been planted successfully, and the success rate is similar to ryegrass when the following guidelines are followed. 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 several years.

The key is to minimise the re-establishment of weeds and unwanted grasses in the young fescue pasture (Table 2, over page). 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.



Tall fescue should be established into clean seedbeds

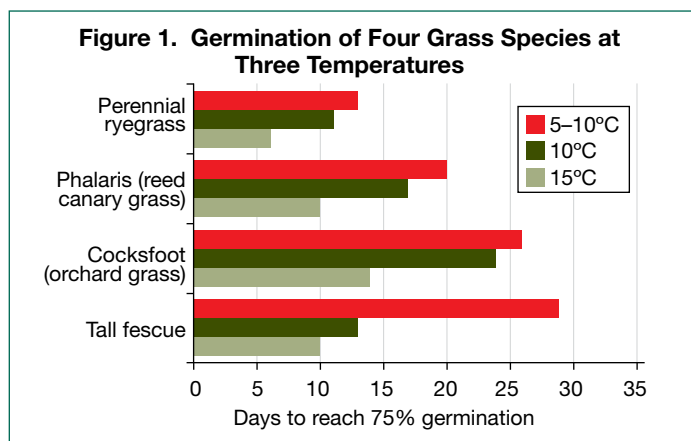
**Table 2. The Worst Weeds for Tall Fescue, and Options to Control Them**

Fescue Sowing Time	Weed (s)	Control options
Autumn	<i>Poa annua</i> , brome grass, 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
Spring	Fathen, nightshade, wireweed, thistles	Post-emergence herbicides

Some herbicides can be used to control *Poa annua* and ryegrasses 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 fescue seedlings. This is even more important for spring-plantings, due to the more rapid development of weed seedlings and their effect of drying out the soil in summer.

In the preparation phase, it is common for farmers to grow one to three forage or grain crops, as this kills weeds and prevents re-seeding (if the crop is kept clean of weeds) and also boosts grazing and production from the area. 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, fallowed over summer, sprayed again in February/March and drilled with the fescue seed (cultivation can be done as an alternative).

On irrigated dairy farms, it is suitable to spray out old pasture in October and direct-drill (or cultivate and drill) 3-5 days later. Establishment in spring avoids the re-establishment of serious grass weeds, and minimises the days out of grazing before the new pasture is ready.



Timing of planting is also crucial. Tall fescue establishes quickly in warm soils, but not in cold soils (Figure 1). Planting in late-autumn when soils are cool (5-10°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 early-autumn in

12-15°C soil temperatures, tall fescue is competitive with most weeds. Many weeds germinate in late-autumn (e.g. *Poa annua*), so planting fescue early gives the desired seedlings a head start. The best time for establishing tall fescue in the autumn is early to mid-February for inland Otago, late-February in Canterbury, early-March in most North Island regions, and mid-March in Northland.

Spring-sowing is ideal for tall fescue in regions with irrigation or reliable summer rainfall, especially where winters are cold and long, and summer grass weeds are not common. In spring, sowing is best carried out once soils have reached 10-12°C and are consistently rising. This is likely to be October in the South Island, and mid-September in the North Island.

A common mistake is sowing tall fescue seed too deeply. The ideal depth is 10 mm, and when placed more than 20 mm deep, very few seedlings will emerge. Planting after cultivation requires the seedbed to be firm, fine and level. Seed is best sown with a roller-drill when cultivating. Extra care and attention needs to be given to seed depth when direct-drilling.

Direct-drilling is a suitable method for establishing tall fescue. The same principles of preparation apply, with



Spring establishment of tall fescue suits cold regions

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 25 kg/ha (Table 3). Ryegrasses should never be mixed with tall fescue due to competition during establishment. Timothy (1 kg/ha) and phalaris (1-2 kg/ha) are the only suitable grass companions. 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® 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. Superstrike® will provide protection against ASW and black beetle, and Ultrastrike® will provide protection against 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. **Advance** tall fescue is often very palatable in the first spring and summer and animals can easily over graze, so adjust grazing to achieve at least 5 cm residual.

**Table 3. Suggested Seed Mixes Using Tall Fescue**

	Dairy or general sheep/beef pasture (kg/ha)	Lamb finishing and general grazing (kg/ha)
<b>Advance MaxP</b> tall fescue	26	23
<b>Tribute</b> white clover	2*	3
<b>Emerald</b> white clover	2*	-
<b>Sensation</b> red clover	optional	5
<b>Choice</b> chicory	optional	1
<b>Tonic</b> plantain	optional	0.5
TOTAL	30	32.5



Tall fescue is very compatible with chicory



**Advance** tall fescue provides leafy, quality feed during summer

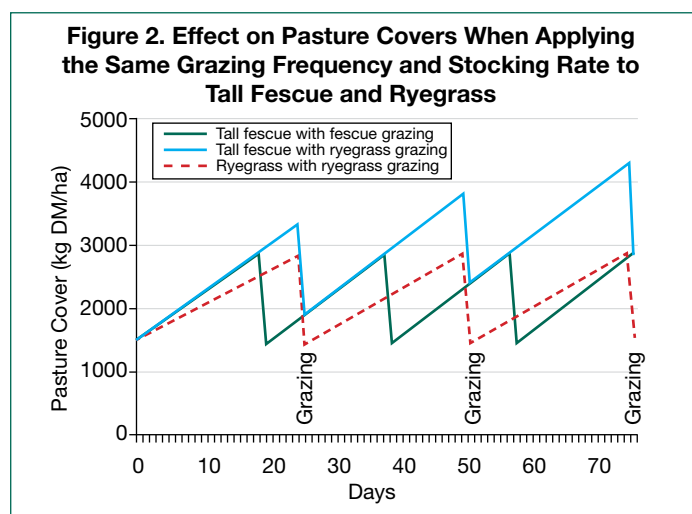
# Management



High pre-graze covers will result in large residuals

The most important aspect of grazing management for tall fescue in New Zealand 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 result of too few animals and not grazing often enough (Figure 2).



Pre-grazing height should not exceed 3000kg DM/ha or approx 18cm

Tall fescue often grows faster than ryegrass, so pastures need to be grazed more often (Table 4), and higher stocking rates are required. If you think of tall fescue as a forage that can grow 30-50% faster than 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 an ideal mass of 2700 kg DM/ha (about 15 cm) (see Table 4).

Season	Grazing Frequency (days)	Pre-grazing Mass (kg DM/ha)
Winter	30-50	2500-3500
August - 15 September	25	Less than 2800
15 September - December	7-12	2500 - 2700
December - April	14-20	Less than 2800

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 because cows consume less forage at night.

## 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 and data on relative pasture production). On a sheep farm running an average of 10 SU/ha, an extra 2-3 SU need to be carried for every hectare of tall fescue established.

## Spring Management

On sheep farms, it is ideal to rotationally graze tall fescue in spring with hoggets 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 than the farm average 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



It is often easier to control fescue by lambing on it

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 this 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 (e.g. ProGibb®SG), 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.



Longer spells from grazing and nitrogen is recommended in autumn

### 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.



Advance MaxP® used for finishing lambs on the North Otago coastline

**Contact details:**

**Sam Lucas | Northern South Island Sales Manager | 027 229 5776**

**Gareth Kean | Southern South Island Sales Manager (Otago/Southland) | 027 226 2777**

**Garry Wills | Northern North Island Sales Manager | 027 683 3380**

**Elton Mayo | Western North Island Sales Manager | 0274 333 039**

**Dereck Ferguson | Eastern North Island Sales Manager | 027 431 5269**

**[www.agricom.co.nz](http://www.agricom.co.nz) | [info@agricom.co.nz](mailto:info@agricom.co.nz) | Freephone 0800 183 358**

**AGRICOM**   
Pastures for Profit®