EverGraze
More livestock from perennials

More perennials
Better livestock
Healthier catchments

Actions

Grazing and using winter-active tall fescue in southern Australia

Winter-active tall fescue and tall fescue seedhead [inset]

Actions summary

- ***Tall fescue is available as both winter-active and summer-active cultivars and these suit different situations***
- ***Winter-active tall fescue grows vigorously in late autumn, winter and spring, but is dormant in summer and early autumn***
- ***Winter-active tall fescue persists better under drier conditions than summer-active cultivars***

Winter-active tall fescue – the plant

Tall fescue is a perennial temperate grass that is closely related to perennial ryegrass, but which does not cause ryegrass staggers.

There is a wide range of tall fescue cultivars available which vary from being highly winter-active to highly summer-active. It is important to specify which type of fescue you want when requesting information or purchasing seed.

In the field, it is difficult to tell the difference between winter- and summer-active cultivars of tall fescue.

Both have dark green leaf blades that typically grow up to 30 cm long. The upper surface of the leaf is dull with distinct veins that run the length of the leaf blade. The purple/green seed heads are loosely bunched.

Both types of tall fescue are more deep rooted than perennial ryegrass or cocksfoot and can have roots to a depth of 2 m.

Summer-active tall fescue is, however, better able to extract moisture from deep in the soil profile than winter-active tall fescue due to its higher density of roots at depth.

This enables summer-active tall fescue to use stored soil moisture for growth during dry conditions when the winter-active cultivars become dormant.

This dormancy mechanism makes winter-active tall fescue more persistent than summer-active tall fescue in dry conditions where rainfall is winter dominant or where light sandy loam soils don't retain moisture.

FUTURE FARM INDUSTRIES CRC
awi Australian Wool Innovation Limited
mla MEAT & LIVESTOCK AUSTRALIA

Tall fescue on well drained site on 19 June 2008

For instance, winter-active tall fescue swards at Hamilton in Victoria have retained a plant frequency of 75 % four years after sowing (plants were present in 75 out of 100 random quadrats), where summer-active tall fescue only retained a plant frequency of 60 %.

Winter-active tall fescue has also proven to be more persistent than summer-active cultivars at Wellstead in southern WA, where rainfall is less than 600 mm/ annum and soils have a sandy texture (Figure 1).

Winter-active tall fescue survives hot and dry conditions by minimising its green leaf area, which reduces its water use and makes it less susceptible to scorching.

Why use winter-active tall fescue?

Winter-active tall fescue is best suited to well drained soils with greater than 450 mm rainfall that is winter dominant.

It is most productive during late autumn, winter and spring, but is dormant in summer and early autumn.

This dormancy mechanism enables it to survive in areas that have hot and dry summers where perennial ryegrass and summer-active tall fescue have lower persistence.

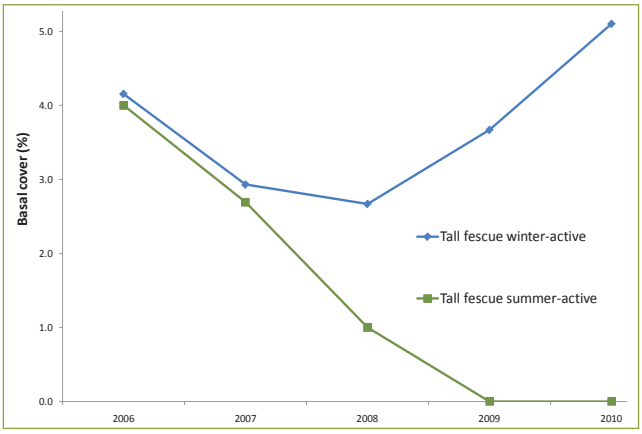
Plants resume growth in autumn when temperatures begin to decline and day length becomes shorter.

Winter-active tall fescue is best suited to well drained soils, but can also tolerate short periods of waterlogging.

The plant grows most actively during winter and spring.

Waterlogging during this time may inhibit growth and result in the paddock being trampled and pugged-up by livestock under intense grazing.

Figure 1. Basal cover (%) of winter-active and summer-active tall fescue at Wellstead in southern WA on sandy textured soil.



The plant can also perform well on soils which become waterlogged in wet seasons, but which do not retain enough moisture to support summer-active pastures.

Soils that become waterlogged and which have a high clay content are better suited to summer-active cultivars of tall fescue which can make use of the stored soil moisture to continue growth during summer.

For these reasons, summer-active and winter-active cultivars of tall fescue should not be sown together.

The different cultivars suit quite different situations and need different grazing management at certain times of the year.

Tall fescue is slower to establish than perennial ryegrass but with a deeper root system is more suited to marginal areas where ryegrass currently only persists for 3 - 4 years. The seedling vigour and time to establish tall fescue is similar to phalaris. Current seed prices mean that phalaris is cheaper to establish than tall fescue, but tall fescue does not cause staggers, which can occur on phalaris or perennial ryegrass pastures. Having some tall fescue pastures provides safe paddocks especially for young stock.

For information on summer-active tall fescue, refer to the EverGraze Action - Growing and using summer-active tall fescue' fact sheet available at our website; www.evergraze.com.au.

Establishment

Managing paddocks ahead of sowing winter-active tall fescue

Effective weed control is essential when establishing a new pasture because weeds compete with the establishing seedlings for moisture, nutrients and space.

Competition from weeds can be reduced by preventing weeds from setting seed in the two years prior to sowing. This can be done by grazing the seed heads off or cutting the paddocks for hay or silage before the seed drops. Alternatively, chemicals can be used to reduce seed set.

Minimum soil fertility requirements at sowing are Olsen P > 15 mg P/kg, Colwell K > 160 mg K/kg and CPC S > 3 mg S/kg, although winter-active tall fescue will respond to soil fertility higher than these levels.

A pH ($CaCl_2$) of greater than 4.3 is required. Soil tests should be taken prior to sowing so that fertiliser can be applied to correct any nutrient deficiencies.

A comparison of a summer-active (left) and winter-active (right) tall fescue in August 2004 at Hamilton in Victoria.

Control of cockchafers and red legged earth mites in the month prior to sowing is also required to ensure successful seedling establishment.

Sowing

Winter-active tall fescue is best sown in autumn to reduce exposure to hot and dry conditions during late spring and summer. Direct drill or sow into a cultivated seed bed at a rate of 7 – 15 kg seed/ha and at a depth of 10 – 20 mm.

Winter-active tall fescue is best sown with clover, but not with other grass or herb species. It is a relatively weak seedling and sowing with other grass or herb species is likely to result in poor tall fescue establishment.

Grazing newly established swards

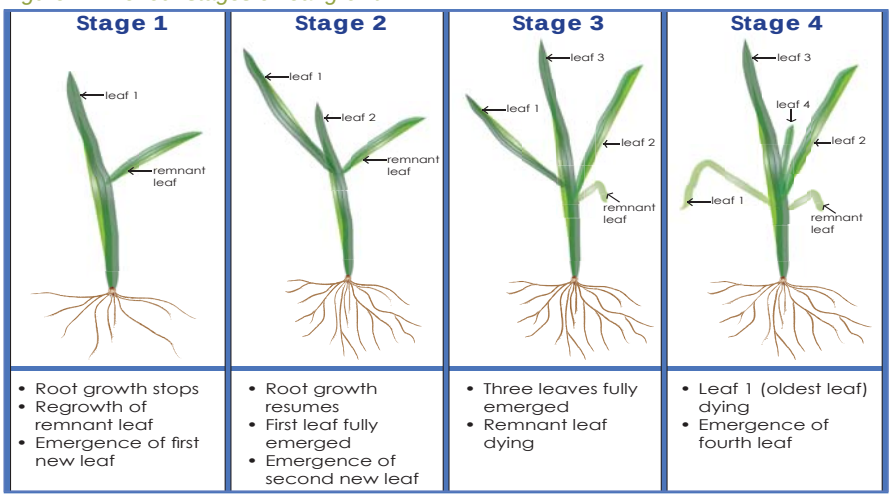
The root system of tall fescue seedlings is slow to develop and grazing should not occur until the seedling is firmly rooted.

This can be tested by gripping the seedlings 1 cm above the ground and giving it a tug; if the leaves break off rather than the seedling being up-rooted, then the paddock is ready to be grazed.

In the six months after sowing, the paddock should be grazed at high stocking rates over a short period of time (2 – 3 days) to minimise seedling damage. After grazing, the pasture should be spelled until approximately 1500–2000 kg DM/ha has accumulated, before being grazed again for a short period.

If weeds become a problem, the pasture should be heavily grazed for a short period (7 – 10 days). Chemical control of weeds can also be used but specific agronomic advice should be sought first.

Figure 2. The four stages of leaf growth



Tall fescue endophyte

Tall fescue cultivars are available which contain the beneficial endophyte MaxP® (endophyte is a fungus that lives within the plant and is transferred in the seed). This endophyte may improve the persistence of the pasture and enable it to tolerate stressful conditions. This endophyte does not harm sheep or cattle, but can be toxic to horses.

Research into endophytes continues; therefore, specific agronomic advice should be sought into what endophytes are available at sowing and the effects they will have on livestock and pasture performance

Grazing established paddocks

The growth rate and long term persistence of winter-active tall fescue depends on the amount of carbohydrate energy the plant has stored in its tiller bases.

If the paddock is set stocked over a long period, these energy reserves become depleted and the plant will eventually die.

Set stocking to below 1200 kg DM/ha for more than three months should be avoided.

Rotational grazing at the three leaf stage during late autumn and winter will ensure sufficient time between grazing for the plant to re-build its energy reserves (Figure 2).

During early spring, winter-active tall fescue grows rapidly and produces reproductive stems which are low in palatability and nutritive value. Set stocking to 1200 kg DM/ha during this reproductive phase will prevent these stems developing and keep the paddock in a nutritious vegetative stage.

Set stocking during spring will also stimulate tillering, which will improve the density of the sward.

Winter-active tall fescue becomes dormant during summer and early autumn and will only allow limited grazing compared to summer-active fescue.

It is important to retain at least 800 – 1000 kg DM/ha ground cover to avoid erosion and encourage persistence.

EverGraze
More livestock from perennials
Actions

Tall fescue at Hamilton on 25 July 2008

Trialing winter-active tall fescue on farms

1. Decide if you require a pasture species that will provide high quality feed during late autumn, winter and early spring, but which is dormant during summer.
2. Consider if your environment and soils are suitable for winter-active tall fescue.
3. Select a small paddock that can be easily managed.
4. Soil test and create a management plan for fertiliser and weed control. Weed control needs to commence at least a year prior to sowing and should aim to prevent weeds from setting seed.
5. Seek local agronomist advice on cultivars, sowing rates and times, companion species, etc.
6. Control weeds and limit grazing during establishment year.
7. Use rotational grazing during late autumn and winter to enable the sward to replenish its energy reserves. Set stock in spring to prevent seed head development and maintain nutritive value declines. De-stock in summer.

Authors

Margaret Raeside, Department of Primary Industries, PB 105, Hamilton, Victoria, 3300.
P: (03) 5573 0752
E: margaret.raeside@dpi.vic.gov.au

Paul Sanford
WA Department of Agriculture and Food
444 Albany Highway, Albany, WA, 6330
P: (08) 9892 8444
E: paul.sanford@agric.wa.gov.au

Further information

Reed, K (2006) Species and cultivars for improved pastures. In 'Greener pastures for south west Victoria'. (Ed. Nie, Z and Saul, G) p. 25 – 26. (Victorian Department of Primary Industries, Hamilton, Victoria, Australia).

Tall fescue, NSW Agriculture Agfact No. 285 3rd edition 2004.
http://www.dpi.nsw.gov.au/agriculture/field/field-crops2/pasture-species-_and_-varieties/temperate-grasses/tall-fescue

For further information go to our website; www.evergraze.com.au

EverGraze on line: www.evergraze.com.au
For further details of EverGraze and to find out about activities in your area go to **www.evergraze.com.au** or write to Geoffrey Saul, National EverGraze Coordinator, 98 Leura Lane, Hamilton, VIC 3300.

EverGraze is a Future Farm Industries CRC, MLA and AWI research and delivery partnership

Proudly supported by
CARING FOR OUR COUNTRY
CHAF Central Highlands Agribusiness Forum

Established and supported under the Australian Government's Cooperative Research Centres Program. Through the implementation of innovative research outcomes and new technologies, the Future Farm Industries CRC is developing new and adaptable farming systems for Australia that will improve livestock and cropping industries productivity, offer new woody crop options, make better use of limited rainfall and create more diversity in landscapes.

Network SW 2010