

Pastures for Profit® Tips Spring 2009



Welcome to the spring '09 version of Agricom's Pastures for Profit® Tips. As always, we hope you enjoy our latest edition.

What Drives Yields of Winter Feed-Crops?

With increased pressure coming on land, it is more important than ever to ensure that you understand how to get the best out of your winter feed-crop.

For any winter feed-crop option, preparation is an extremely vital part of achieving a good crop. Soil tests need to be done over winter so that any soil fertility issues can be dealt with before sowing. A soil-available nitrogen (N) test is worth asking for at this time as N is a key driver of kale crops, and understanding what natural resource you have as a starting point allows you to make informed decisions around N-fertiliser use. Winners of winter-feed competitions tend to use good rates of N at establishment on kale crops. For swede crops however, phosphate is the most important requirement. Ask your local fertiliser rep for advice for the most suitable programme for you.

Ensure that the seed bed is fine and firm, and also weed-free when sowing occurs. A pre-sowing chemical application can be applied to certain crops if some weed species are present. Poorly consolidated seed beds are often one of the major reasons for split germinations in brassicas, so maintaining good seed-soil contact is important, and rolling is a must.

As brassicas are germinating, insects such as springtail and *nysius* can damage, or even destroy the crop, very quickly. Seed treatment such as Superstrike and Ultrastrike can reduce the chance of this occurring. Spraying with insecticide with your knock-down herbicide at the start of the paddock preparation is essential as it reduces the insect populations and allows seed treatment to be more reliable.

Insect attack is very seasonal and generally localised in a paddock, so monitoring the crop during the establishment phase will reduce the risk of insects affecting your crop and its potential yield. Insects to watch for are springtails and *nysius* on emerging plants, and then aphids, diamond-backed moth, and white butterfly caterpillars for the rest of the growing season.

Winter crops are valuable for providing a large volume of quality green-feed. Climatic conditions are often out of your control, but the wide range of results within districts proves that inputs and timing have a large impact on final yields. Ensuring that all the factors that you can influence, such as good paddock preparation, correct fertiliser use for specific paddock requirements, and crop monitoring are carried out, will give you the best result that climate allows.

For more details, refer to Agricom's Brassica and Forage Cropping Guide 2009, visit www.agricom.co.nz or contact your local seed retailer.



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Unbeaten for Production

There has been a proliferation of perennial ryegrass cultivars released onto the market in recent years, with several companies claiming theirs to be the best, but of course they can't all be correct.

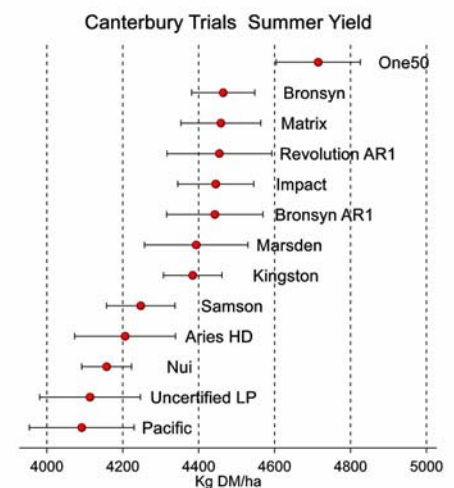
The only ryegrass testing system run without individual company bias or influence in New Zealand is the National Forage Variety Trialling (NFVT[®]) programme, using the best testing methods agreed to by the major seed companies. Any company belonging to the New Zealand Plant Breeders and Research Association is eligible to enter their cultivars for evaluation.

The latest summary (2008) shows that over all the Canterbury trials conducted, ONE⁵⁰ perennial ryegrass is more productive than any other cultivar tested during summer and autumn. The trials also show there is no ryegrass better for winter or annual production than ONE⁵⁰.

Equally impressive is the fact that ONE⁵⁰ is also unbeaten in the "All New Zealand" NFVT[®] summary for annual, summer, autumn and winter yield.

Source

<http://www.nzpbra.org/forage-trial-results.html>



Making Hill-Country Pastures Last

Developing hill country is a profitable option for increasing overall farm production, often producing fantastic transformations. However, many of the new "permanent" pastures revert back to naturalised grasses and weeds within three years, resulting in disappointing economic results overall.

One of the main reasons for poor persistence is the rapid build-up of pasture insects (e.g. porina, grass grub, root aphid), opening pastures up and allowing old grasses to re-establish and dominate the sward.

Farmers often sow cheaper seed mixtures to save themselves about \$60 per hectare, and the perennial ryegrasses used often have no endophyte. The most effective way to prevent reversion is to use ryegrass seed with a novel endophyte. AR1 endophyte will protect against several insects, but not the most damaging insect in hill country, porina. For this reason, it is strongly recommended that perennial ryegrass with AR37 is used to maximise persistence and production.

Buying appropriate seed with a robust endophyte at the final stage of hill-country development is a crucial step in ensuring long-term benefits are achieved.



Ryegrass in most new hill-country pastures requires a robust endophyte to persist

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Grazing Tall Fescue in Spring

The main objective when grazing tall fescue in spring is to avoid pasture covers getting too high between each grazing.

Around the time that tall fescue develops reproductive stem (Oct, Nov), pasture growth rates can be very high (100 kg DM/ha/day). This will require short spells between grazing (10-14 days) to prevent pre-grazing covers exceeding 3000 kg DM/ha. The ideal pre-grazing mass during this period is approximately 2500-2700 kg DM/ha, because at this height animals will remove a lot of the stem and prevent it from developing later on.

If tall fescue is grazed at the same frequency as neighbouring ryegrass paddocks, the faster growth of tall fescue will mean more cover at grazing. This cover is often too much for the animals to eat in the time they are in that paddock, meaning more pasture is left behind, which increases cover at the next grazing even further. Stick to the 15 cm pre-graze height and you shouldn't go wrong.



Graze tall fescue before it reaches 15cm

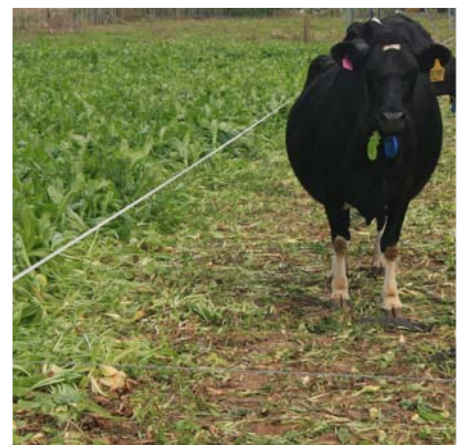
Around the end of November, tall fescue will stop producing stem and almost all growth between grazing will be leaf for the next 10 months. This is why the feed value of Advance tall fescue is often greater than ryegrass in summer and autumn.

Perennial Summer Forage Crop

There has been an increase in the use of Choice chicory on dairy farms, with farmers realising substantial improvements to milk production. Farmer experience has found production can increase by two litres/cow or 10% per day from just a couple of hours grazing chicory each day.

Quite a small area (4.5 ha per 100 cows) of a dairy farm planted in Choice chicory can provide a continual daily diet of high quality protein feed throughout summer and autumn, when the declining quality of ryegrass pastures often cause a decline in milk production.

Results are spectacular because Choice chicory is very productive over this period, and the deep tap-root means it is less reliant on regular rainfall to maintain growth. Utilisation in the paddock is high due to the palatability, and utilisation is also high within the cow because pectin (for plant structure) is readily fermented in the rumen.



A few hours a day on Choice chicory can boost milk production

Choice is a perennial chicory, so the crops can be retained in the same paddock for 2-3 seasons, thereby reducing re-establishment costs. In fact the main reason dairy farmers are keen on chicory is that it works out to be a very cheap way of providing protein and energy.

A side-benefit of chicory is the higher content of minerals, such as zinc, which provides cows a higher intake of zinc every day. Of course lamb and deer farmers continue to take advantage of this species, with an increasing use as a "straight" stand with clovers but no grass.

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Earthworms and Chicory

Earthworms provide many benefits to soil and pastures, and many farmers try to foster their population and activity.

Earthworms process litter from pastures and excrete nutrients in plant-available form, and the holes they create improve drainage and aeration of the soil, having a positive impact on pasture production.

There are several options for enhancing earthworm activity, such as applying lime to raise soil calcium levels.

A new method may now be available. Research in Northland has found that after just two years, the mass of earthworms under a chicory pasture were 400% higher than under ryegrass (6.5 and 1.3 grams per 0.4 m² respectively).

So, while chicory has many benefits for animal production, a worthwhile side-benefit seems to be a natural improvement to the soil.



Chicory can benefit soil as well as stock

Seed Drill Origins

The invention of the seed drill has had a huge impact on the amount of food that can be produced. It has been said that the invention of the seed drill increased the production of food eight fold.

There is some debate as to who invented the first seed drill, but the first seed drill that appeared in Europe was invented by Jethro Tull in 1701 (and you thought it was just a rock band!). Before then seeds were hand placed in furrows then manually covered over with soil. Jethro Tull observed that the higher planting density was less efficient and thus instructed his workers to be more precise in their seed placement. He designed a drill that had a rotating cylinder with grooves cut into it for the seed to drop into. The seeds were placed into a furrow dug by the ploughs at the front of the machine; then covered using a harrow at the back of the machine. This reduced the amount of seed that was wasted and the rows made weeding easier.



Jethro Tull



In 1714, after travelling around Europe, Jethro Tull redesigned his drill so that the front of the machine broke up the dirt between the coulters believing that this would release nutrients held by the soil.

Today there are many types of agricultural seed drills but the majority still rely on the same principle the Jethro Tull invented back in 1701 of creating a furrow for the seed and then covering the seeds using harrows.

We hope you have enjoyed this Pastures for Profit[®] Tips newsletter and wish you all the best for the season ahead. If you would like further information on any of these articles please do not hesitate to contact us.

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