

# Gaining ground with subtropical grasses

**D**erek Blomfield has been concerned about the impact of annual grazing crops on his lighter country for many years. But things are turning around with the incorporation of subtropical perennial grasses into his farming system as he explained to Catriona Nicholls recently.

“Our property is basically made up of heavier black soils on the flats and lighter sandy loams and basalt soils on the higher sloping country.

Traditionally we have cropped the flats with cereals and fodder crops and had annual grazing crops on the slopes.

Because we can receive heavy rains during summer, when there is less groundcover, our lighter country is covered in contour drains to direct the flow of run-off and protect the soil from erosion.

While this system certainly directed water off the slopes, it was causing erosion and water quality issues when the water reached the heavier flats.

You could see water rushing off the slopes and it literally ran red with all the soil.

Even when we introduced direct drilling into our cropping system there was not enough groundcover during summer to prevent the loss of soil in heavy rain.

**Case study:** Derek Blomfield

**Location:** Caroona, New South Wales

**Property size:** 1000 ha

**Mean annual rainfall:** 600 mm

**Soils:** Light red soils on the higher slopes and heavy black soils on the flats

**Enterprises:** 280 cows 200 ha wheat, barley and sorghum



Photo: B White

Derek is thrilled with the results he is achieving with subtropical perennial grasses in terms of both improvements in livestock production and soil protection and health.

## Key points

- Perennial pastures provide groundcover for year-round protection from storms and topsoil erosion
- Planned rotational grazing is essential for long-lasting perennial pastures
- Perennials greatly expand the growing season.

## A paradigm shift

We knew there must be a better way to manage our resources, so became involved in the Holistic Management International™ program. This encouraged us to look at alternative options, including subtropical perennial grasses, which we have now introduced to our lighter country.

During January 2004 we sowed a mix of Katambora Rhodes, Premier digit and Console lovegrass. To be honest, the results looked patchy and by winter we just hoped they would start to fill in the gaps on the ground.

But during December 2004 we had 300 millimetres of rain and even with a sparse pasture cover, the water at the end of the contour drains ran clear.

This single factor impressed me so much that I'm now determined to have all of our run-off minimised and siltfree.

As part of our new approach, our focus is now on grazing for plant recovery to ensure we maximise our groundcover throughout the year, rather than growing a crop for six months and leaving the soil uncovered for the remainder.

Grazing management is critical to success with these grasses and overgrazing is the greatest risk.

Where we have overgrazed and the soil is bare, Paterson's curse has germinated, but when grazing is managed well, the subtropical perennials provide enough groundcover to prevent competition from it.

Interestingly we have found that excessive grazing pressure in autumn was revealed in the following spring in terms of increased weed pressure.

### A productive mix

We hadn't expected great weight gains from our cattle on the subtropical pastures, but during August 2007 our prime cattle grazed oats and were gaining 1 kg/day while our cull heifers were gaining 1.7 kg/day on the dormant grasses with sub-clover in the base... a big surprise!

We now graze our weaners on the pasture during autumn and can still get winter feed off the residual pasture.

To try and improve the nitrogen content of the pasture we have included various legumes such as Seaton Park clover, bissurella, serradella, and Antaz sub-clover into the mix (with varying degrees of success).

In addition to the nitrogen, winter-active legumes help to ensure there is some feed on offer during winter when the grasses are dormant.

### Establishment challenges

The most difficult thing to get used to is that sowing the pasture is a bit of a case of hit and miss.

When you sow wheat it either comes up or it doesn't, so you know fairly early on how successful you have been.



Photo: B White

Even in drought conditions the pasture has provided valuable feed and groundcover.

We direct drill the pasture with an old Connor Shea pasture planter, but it can take anywhere up to 12 months to know how successful the germination has actually been.

However, the pasture can self seed at anytime, so we ensure it sets seed at least once each year to maintain persistence.

We have continued the program across most of our lighter country.

To make the operation less expensive we have used the local weeds council harvester to collect seed for sowing.

Our recent pasture mix includes; 2 kg/ha Premier digit, 2-3 kg/ha Katambora Rhodes, 1 kg/ha Bambatsi Panic. We also include

some starter N/P/K fertiliser in the sowing mix.

“Certainly introducing sub-tropical grasses has been of great value. In conjunction with managing and improving our native grasses it is improving water quality and biodiversity above and below the soil.”

### CONTACT

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## The science behind the story

### By Dr Suzanne Boschma

FFI CRC's *Agronomy of New Perennials – Tropical Grasses Project* is studying the key factors to successful establishment of subtropical grasses and the role of nitrogen on persistence, production and forage quality, and water use and rooting depth.

We don't have any control over the weather, but we can reduce the risk of poor establishment through sound weed control, using high-quality seed, and correct sowing time and depth.

Weeds need to be controlled for two years before sowing to reduce grass weed burdens. In an experiment near Manilla nil weed control resulted in 30,500 live seed grass seeds/m<sup>2</sup> while control for one and two years reduced seed numbers to 6200 and zero seeds/m<sup>2</sup> respectively.

Seed is expensive and quality varies so it is worth getting a copy of the purity and

germination test results or having a test done.

Correct sowing time and depth is essential. A study on a red soil at Tamworth showed optimal emergence when seed was sown 10 mm (up to 25 mm) below the surface from November to January.

Forage quality of subtropical grasses is commonly compared with temperate grasses and considered to be poor. However, it is important to remember that when subtropical grasses are growing, temperate grasses are generally dormant and low quality.

Subtropical grasses need to be compared with summer growing forages. We found the protein of Premier digit leaf during the growing season ranged 14–19% and the Metabolisable Energy (ME) 9.1–9.6 MJ/kg. That's equal to or better than the quality of forage sorghum, with the added advantage

of a longer growing season.

Incorporation of a legume or addition of nitrogen is important to increase forage production and quality, and animal production. Rainfall in the Tamworth region during the 2006–07 summer period was below average, however the addition of 100 kg N/ha increased forage production of Premier digit and Katambora Rhodes grass by up to 30% and 55% respectively.

- Dr Suzanne Boschma is a scientist working on the Agronomy of New Perennials — Tropical Grasses project

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