Perennials offer potential

A recent foray into perennial pastures, has revealed to Western Australian producer John Mottram their productive potential as he recently explained to Catriona Nicholls.

"We've only recently discovered the potential of a perennial mix on our property, but so far it seems to fit the *EverGraze*® mantra of 'Right Plant, Right Place, Right Purpose, Right Management'" John said.

"I'm the fourth generation on this property and the first perennial was common kikuyu, much of which still persists in lower-lying areas and where moisture lies in gullies.

But apart from kikuyu I had little experience with perennials. Our farming system is based mainly on volunteer annuals and maybe two years of seeding high-quality ryegrass.

In 2006 the South West Catchment Council, along with (then) Waters and Rivers, came up with the idea of helping lower the salt content of the Warren River by planting perennials. The project consisted of 100% funding to establish 2000 ha of perennial pasture within the catchment in the hope of enticing other farmers to adopt perennials to a point where it would have a positive effect on the river's salt content.

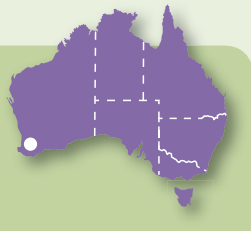
No-one locally had much experience with perennials, so there was a bit of guesswork, but by using the 'Right Plant, Right Place, Right Purpose, Right Management' philosophy the project invested in lucerne, kikuyu, balansa, strawberry and white clover, tall fescue, tall wheatgrass, puccinella chicory and plantain — the only thing they missed was phalaris.

I expect this was due to the perception of toxicity risks from phalaris, but I am still keen to give it a crack here.

key points

- Practical on-farm trials have supported the *EverGraze* mantra of 'Right Plant, Right Place, Right Purpose, Right Management'.
- Perennials have reduced the need for supplementary feeding and provided opportunities for silage production.
- Rotational grazing increases grazing efficiency and manages difficult-to-control weeds.

farm info.



Case study: John and Danielle and David and Margaret Mottram

Location: Manjimup, Western Australia

Property size: 450 ha

Annual rainfall: 800 mm (500 during 2010)

Soil type: Deep red loams with high clay content over gravel (60% of farm), blending into yellow and white sands, some over gravel and some over 'coffee rock'

Enterprises: Beef cattle, poll Dorset stud and timber

Photos: Eric Dobbe (DAFWA)

Perennial pastures, such as kikuyu (above and inset) are finding their place in different parts of the landscape on John Mottram's property.

A leap of faith

Our first 10 ha planting during early June 2007 was a mix of Quantum tall fescue (12 kg/ha), Paradana balansa (2 kg/ha) and strawberry clover (2 kg/ha) after a double knockdown — one through cultivation, and the second a spray.

By the last week of August we grazed with cattle and continued grazing once a month up to December 16 and then gave it a rest.

On 15 October 2007 we put in 10 ha of kikuyu on separate piece of land.

During the first week of June 2008 I put in another 13 ha of summer-active tall fescue (Carmine) and 20 ha of lucerne.

That first year I estimated we had 12 tonnes of dry matter/ha from the tall fescue mix — I don't reckon it has come lower than that.

During 2010 we produced 9 t/ha in silage and we would have taken at least 4-5 tDM/ha through grazing.

Trial and error

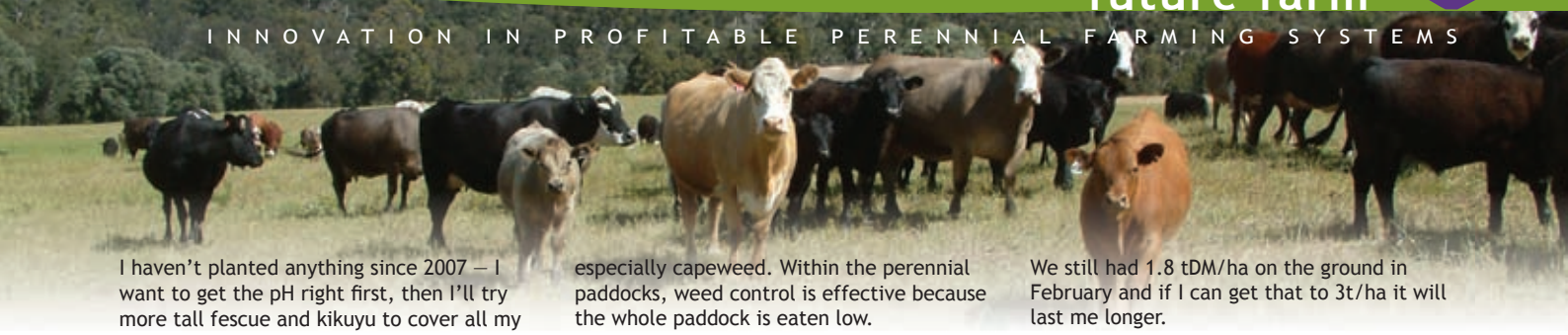
I tried a tall fescue (Carmine) and white clover mix the second year (2008), as the strawberry struggled to establish. I didn't really like white clover, but it grew that much during the first year it wasn't funny — all I saw was clover for about four months, ankle deep.

We grazed continuously from September 2008. One paddock was grazed right up to Christmas. When the clover gave up the fescue was there, ready and waiting.

The clover has now receded to the low-lying moist areas and in the sandier country it has died out, which could be a pH issue.

Lucerne was brilliant during the first year but during the second I oversowed it with annual ryegrass (Winter star), which competed with the lucerne for moisture. Now the lucerne has receded back to the sandier country and I've probably only got maybe 8 ha of the original 20 ha left.

I will continue with lucerne but with a less winter-active variety — one more suited to our drier conditions.



I haven't planted anything since 2007 – I want to get the pH right first, then I'll try more tall fescue and kikuyu to cover all my low-lying country. I also want to try some winter-active perennials – phalaris, Spanish cocksfoot, and winter-active tall fescue.

We have higher feed utilisation on the perennial paddocks – I suppose I look after them better because they are smaller paddocks. The first paddock is nearly four years old and it seems to grow a lot more pasture than our annual paddocks. And if you have a false break it doesn't matter – feed quality still remains high.

But the biggest eye opener has been the amount of feed perennials produce on the same fertiliser as the annual paddocks – and the animals like it.

Grazing management

Before trialling perennials we changed to rotational grazing and haven't changed anything since – except mob size.

During the past year I have reduced mob sizes (180 cows to three mobs of 60) and I have noticed a difference in the weeds.

Leaving mobs in the paddocks longer to get the job done has improved weed control – especially capeweed. Within the perennial paddocks, weed control is effective because the whole paddock is eaten low.

Every time the cows go in it is no higher than 15-20 cm and they come out at 3-5 cm. I work on putting them in at 2.5-3 tDM/ha and bringing them out at about 1 tDM/ha.

The only paddocks with weed challenges are the annual paddocks where the stock don't get into the corners.

Current conditions

Even though we had a dry spring and summer, I could have grazed the lucerne and tall fescue during February – although I waited till early March.

Our annuals are about back to dirt after summer – I utilised them fairly well before January and have only got about 15 ha of grass from a total of 300 ha that I need to eat off – the rest is back ready for germination.

I will start supplementary feed two weeks before calving and keep them going until they don't need it.

In the future I hope to grow enough green stuff to get a higher plane of nutrition before the cows calve so they won't need as much supplementary feeding.

We still had 1.8 tDM/ha on the ground in February and if I can get that to 3t/ha it will last me longer.

I'm in a change phase, where I want to increase my sheep and stud sires. I've culled my older cows due to the season and I've currently got 150 cows at 10 DSE/ha/yr plus sheep at 1 DSE/ha/yr.

The Manjimup Pasture Group is on 1.2 cows/ha – about 20 DSE. And they want to go a bit further than that. If I had more fescue I could easily go to 18-22 DSE.

I will invest in more perennials, but at $12.00/kg I want it to establish and grow. The key to tall fescue success is mainly the clay content – it has to be a heavy loam to work and it will grow and hold quite high into the landscape because of the water holding capacity of the clay. The tall fescue roots were down to about one metre in three years and it really held the water from a wet winter during 2007 right up until August."

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science behind the story

By Paul Sanford, DAFWA

- **In contrast to the other *EverGraze* research locations on the south coast at Albany and Wellstead, Manjimup experiences more severe frosts and hot dry summers resulting in substantial feed gaps during winter and summer.**

In its favour are high growing-season rainfall and predominantly fertile soils. This combination means the suite of suitable perennials will be different to other parts of the south coast with infertile sands and summer rain.

Perennials are relatively new in John's region and farmers and their advisors have been determining what works with paddock-scale plantings that started in response to the need to reduce the salt content of the Warren River. *EverGraze* is monitoring pasture, livestock and water-use on John's farm. The results will be modelled to explore ways to further optimise profit and natural resource management outcomes.

To date the most impressive result has been the performance of the summer-active tall fescue. During 2010 it out-yielded the control annual pasture by 4.5 tDM/ha at a total yield of 9.3 tDM/ha. Overall its persistence is excellent with losses confined to relatively small areas.

Lucerne has failed to persist in more than 50% of the paddock into which it was sown, yet where it persisted it out-yielded the annual control by 5.3 tDM/ha at 10 tDM/ha. Even though much of this production can be attributed to the annual companion species, if the persistence problem can be solved lucerne has real potential in this environment.

The kikuyu-based pasture situated on a less-fertile soil still produced 2 t more DM than the annual pasture control at 6.8 tDM/ha. It has persisted through relatively cold winters and has a strong clover component during the growing season.

With the recent summer rain during January, it is interesting to compare the subsequent growth of the three perennials. Lucerne yielded the most (2.4 tDM/ha) compared with kikuyu (1.4 tDM/ha) and tall fescue (0.9 tDM/ha). This result supports general *EverGraze* findings that lucerne and kikuyu have superior summer growth over tall fescue.

This year we will test a range of commercial and novel species and cultivars, looking for superior winter performance, better tall fescue lines, productive cocksfoots and more persistent lucerne.

While there is still much to learn, farmer, advisor and researcher results to date confirm perennials are beneficial to livestock systems in this region.

EverGraze is a FFI CRC, MLA and AWI research and delivery partnership. For further information, go to www.evergraze.com.au

- ***Paul Sanford is the EverGraze Proof Site leader in south west Western Australia.***

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