

Hooked on perennials at Darkan

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John South manages several properties along the Arthur and Hillman Rivers in the Bokal district near Darkan. Large areas of these farms are low-lying river flats that consist of hard-setting sodic clays and fragile yellow sands that are prone to erosion, acidity and low productivity.

John has watched these areas become increasingly marginal over the past few decades, and was keen to find a way to reverse this trend.

Having experimented with perennial pastures on a small scale (5 to 10 acres) in the past, John approached the South West Catchments Council early in 2011. He was keen to develop a project with the aim of establishing 200 hectares of mixed perennials on his 'Tognella's Flats' property.

Establishment of 'Tognella's Flats'

Following comprehensive soil testing, lime was applied in Autumn 2011 at 2.5 t/ha and incorporated via deep ripping and scarifying. John applied a single chemical knockdown to control grass and broadleaf weeds in the weeks leading up to sowing in June. He then seeded the clay areas of the site (70 ha) to a mix of Tall Wheat Grass (8 kg/ha), Tall Fescue (1 kg/ha), Phalaris (1 kg/ha) and small quantities of Lucerne and Strawberry Clover, with a cover crop of Barley (60 kg/ha) to protect the establishing perennials. The edges of a salty creekline that ran

through this paddock were also lightly ripped and spread with Puccinellia hay to provide cover.

The balance of the project site consisted of deep, acidic yellow sands (130 ha) which were sown to Kikuyu (1 kg/ha)

Farm info.

Grower: John South

Location: Bokal district, Darkan

Soil type: Yellow sand over clay, Sodic soils over hard-setting clays, deep acidic silts

Annual rainfall: 500–525 mm

Enterprises: Sheep (mix of merinos and crossbreds — mainly dorpers), cattle and cropping.

with a Canola cover crop in September 2011. A small part of the paddock was established with a Barley cover crop instead of Canola. However, the Kikuyu in these areas struggled, and as a result John has said that he



Taking follow-up soil samples in the Kikuyu paddock in January 2012.



LEFT: Puccinellia was successful along a salty creekline.
ABOVE: Fescue established well and set seed in spring 2011.



ABOVE: Kikuyu (left) and Fescue mix (right) recovering from heavy grazing pressure.

wouldn't use Barley with Kikuyu again. A converted combine with knife points and press wheels was used to sow the Kikuyu, using a seeding depth of 10 to 12 mm across both sites and with no additional fertiliser or seed treatment. A post-sowing pre-emergent insecticide mix was applied once to control insect damage.

Kikuyu was slow and patchy in its initial emergence, which was put down mostly to an uneven and soft seed bed caused by the cultivation, resulting in a deeper sowing depth than was optimal for the small seed. However, after four months and plenty of late spring rain, the Kikuyu had taken off and soil pits dug with a shovel revealed the Kikuyu roots were already 50 cm down into the profile.

Reaping the rewards

The Phalaris/Fescue mix and Puccinellia also established well with many of the species going to seed in Spring 2011. John decided to take advantage of the good establishment and harvest the perennials and Barley cover crop by operating his header at a low wind speed allowing the Phalaris and Fescue to be

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A Kikuyu plant in winter 2012 after a string of heavy frosts.

harvested rather than being blown out the back of the machine. He now has the option to either re-sow the Barley/Fescue/Phalaris mix in areas of poor establishment or clean the perennial seed for later use.

John decided to graze both areas of perennials quite heavily in the late summer and early autumn of 2012. He was initially concerned that he may have overgrazed them. However, after a few months of rest, both the Kikuyu and the Fescue mix had recovered well.

Despite his concerns, John said that the late summer and autumn feed he was able to get off his Kikuyu paddocks was invaluable and that his Dorpers actually

did 'too well' on the abundant feed. He had to put his mob onto 'Jenny Craig' paddocks afterwards to lose some of the excess fat!

The Kikuyu itself had a setback during the winter of 2012. There was a string of four to five heavy frosts within a week, and the plants looked visibly stressed. However, they were rested from grazing during this time and recovered well in the following warmer months.

Establishment of 'Beer Bottle Flats'

John was extremely pleased with the success of his 2011 perennials, and decided he would like to tackle a further 60 hectare area of river flats in 2012. This site, 'Beer Bottle Flats', was much more variable than 'Tognellas'. The soils ranged from fertile gravelly loams to salt scalds to highly acidic silts, all within the one paddock. So John's idea was to see if he could 'put the right plant in the right place' without having to re-fence and manage each small area separately.

With the further assistance of the South West Catchments Council's Sustainable Soils program, John prepared the site (including 2.5 t/ha of lime on the silt) and controlled weeds prior to sowing in Spring 2012. This time he used a mix of Tall Fescue, Phalaris, Cocksfoot, Tall Wheat Grass, Lucerne, Chicory and

Serradella on the silt areas; Tall Wheat Grass, Puccinellia hay and Strawberry Clover on the salt; and Kikuyu on a few small patches of deep sand. On the higher, more fertile gravels John sowed an oat crop which he will harvest this summer, allowing him to generate an income off the paddock while the perennials are still establishing.

By October the Serradella and Chicory had bounced out of the ground, and the other perennials, although not as advanced, were also establishing very well. One of the main successes of John's project this year was his very effective weed kill which has allowed the seedlings to grow without competition.

Catching the 'perennial bug'

John has now caught the 'perennial bug' and has earmarked several areas of his farms to tackle in the coming years. He is armed with the know-how he has gained from his 2011 and 2012 plantings, much of which has been the result of agVivo agronomist Paul Omodei's support and advice throughout the two projects. John believes that this technical knowledge will be invaluable to him in future years of perennial sowings, and is confident that he can now replicate his successes on his own. ✓



Perennial and annual mix establishing well on 'Beer Bottle Flats' after a spring sowing in 2012.



Perennial success in whole-farming systems