



Kikuyu offers low input, low maintenance alternative

Kikuyu pastures are offering Austin and Joy Johnson, South Australia, a low-maintenance option for rearing Friesian X beef heifers. As Austin revealed to Catriona Nicholls recently, this allows them to enjoy a more relaxed pace of life compared with surrounding high-input grazing systems, without compromising on feed quality.

“We inherited our kikuyu pastures when we bought the properties about 13 years ago,” explained Austin.

“Back Valley is a traditional dairying area and kikuyu was first introduced during the 1920s.

Before buying the property we’d had some experience with summer-active perennials coming from a property based on lucerne pastures.

In fact we’ve only been farming since 1991 after I retired from a career as a civil engineer with the Australian Government.

When we first moved here I did a *PROGRAZE*® course with Tim Prance of Rural Solutions SA and later became part of the Fleurieu Beef Group in order to develop a greater understanding of production in this area – I enjoy it a great deal and refer to it as farming, friendship and fun.

The Group meets on farm each month and provides a source of technical and practical information with guest speakers, farm walks and a great network for sharing experience.

Several group members have had careers in other fields as well as farming.

key points

- Kikuyu requires little maintenance other than rotational grazing to promote persistence and productivity
- The ability of kikuyu to respond to summer rain ensures green feed during summer
- A high level of crude protein delivers impressive animal production potential from the perennial grass species
- Kikuyu must be effectively managed to minimise the risk of spread into native ecosystems via plant fragments or seed that can be ingested by livestock.

farm info.

Case study: Austin and Joy Johnson

Location: Fleurieu Peninsula, South Australia

Property size: Two properties 75 ha and 61 ha

Annual rainfall: 700 mm

Soil type: Derived from glacial sands + alluvial loams

Enterprises: Heifer rearing



Photo: Brian Tripparee

Austin Johnson has found that kikuyu is yielding better weight increases in his heifers than expected.

Although kikuyu is widespread in our area, popular opinion among many of the local farmers is that it is a weed, which they regularly spray out of their high-input pastures.

However, I was interested in investigating the kikuyu further, because we seemed to be getting good weight increases in our heifers – better than expected.

Before we made a decision to discard it as a pasture species, I wanted to base our decisions on feed results.

Together with local consultant Tim Prance, we ran simple analyses on the feed value of two existing paddocks – I was surprised by the results.

While feed quality varies through the year and at varying growth stages, we have had up to 30 per cent crude protein in our kikuyu pasture, which is pretty impressive.

During good growth stages after summer rain, feed test results have consistently

indicated protein levels of above 25% and energy levels in excess of 10 megajoules per kilogram (MJ/kg).

And given it is a hardy species, which can be grazed heavily and provides out-of-season feed, we made the decision to keep it.

Pasture composition

The kikuyu content of our pastures varies between 40% to 90% with the remainder of species including annual ryegrass, sub-clover – and a range of weeds of course.

I believe animals benefits from a diverse range of species and given kikuyu provides feed only during the warmer months, the winter-active species are an important complement to the perennial grass.

We’ve done very little in terms of managing the pasture apart from simply rotating our animals through the paddocks as feed on offer demands.



While we had no previous experience with kikuyu, we were well equipped for rotational grazing because of our previous management of lucerne-based pastures.

Unlike many high-input systems, we don't have a strict rotation formula or wagon wheel system where we move our stock every second day.

Our paddocks vary in size and due to the nature of our heifer-raising operation, we run our stock according to their age.

We have turned off up to 100 in-calf heifers in any one year, with up to 300 animals across the two properties at any one time.

However, we are reaching an age where we are contemplating our future and tapering back our pace of life and the kikuyu-based system allows for that nicely.

Long history – low maintenance

Apart from being easy to manage, kikuyu really looks after itself.

Our kikuyu was probably planted using runners during the 1930s-1950s. It was largely dairy country and I think most dairies would have had kikuyu as an important pasture in the early days.

We are still achieving good results and weight gains from these original stands.

Our cattle are weighed pretty regularly and the gains are extremely good, better than expected, which is one of the reasons we investigated its value initially.

At various growth stages and after grazing, various different circumstances results of up to 30% protein.

But the biggest benefit for us is that we haven't had to do much at all, it looks after itself.

We haven't done a lot of fertilising over the years, it is a summer grower and if you get any sort of rain during summer you get extraordinary growth. You can graze it heavily and it provides high-quality feed.

This growth pattern complements our various winter-active species such as annual ryegrass and clovers.


The downsides

It is not all goods news, though. Frosts give kikuyu a hard time and severely retard growth.

It is a vigorous grass and I accept that if it were to get into native scrub it would be

regarded as a weed. But it is really only the road reserves that have been affected locally from what I can see.

We are small time farmers with a simple rotational grazing system where cattle are sorted by age. We don't have a formal system of rotation, when there's little left in a paddock and lots in the next paddock we move the stock on. Sometimes we move stock on to utilise an excess of feed during periods of rapid growth.

We still carry out supplementary feed during late autumn and winter, but kikuyu is a robust plant that provides a low-maintenance option for a low-input grazing business like ours." 

EverGraze – More livestock from perennials is a Future Farm Industries CRC, Meat and Livestock Australia and Australian Wool Innovation research and delivery partnership.

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science behind the story

By Tim Prance, Rural Solutions SA

- **Austin and Joy Johnson's farm has very sandy acid soils derived from glacial material. The soils are extremely infertile with a PBI <10 and available P (Colwell) less than 20 milligrams per kilogram (mg/kg), sulphur less than 5 mg/kg and low available potassium.**

Kikuyu is ideal for these soils, particularly where landowners don't want to pursue a high fertiliser input grazing system. If the kikuyu is grazed down to less than 1000 kg/ha during late autumn, then enough sub-clover and annual weeds can be maintained to provide adequate winter feed for cattle.

Soil fertility is helped by relatively high levels of organic carbon from the kikuyu runners.

Feed tests collected as part of *EverGraze*, show that green actively-growing leafy kikuyu, even when short (300 kg/ha feed on offer) contains high levels of crude protein (CP) (16-30 per cent) regardless of the time of the year.

Metabolisable energy (ME) levels vary according to feed on offer and growth activity. The ME of leafy, active kikuyu regrowth is between 10 and 11 MJ/kg dry matter (DM) with 3000 kg/ha feed on

offer. If kikuyu is under severe moisture stress, or if rank and ungrazed with only 20% leaf, ME levels will be 9-9.5 MJ/kg DM with 1000-2500 kg/ha feed on offer.

Crude protein levels of rank kikuyu, or kikuyu under severe moisture stress, can drop to as low as 10%.

Dead, dry kikuyu runners in a hard-grazed stand with no green leaf has low CP (6%) and low ME (7 MJ/kg DM).

Fibre content is high with neutral detergent fibre (NDF) levels of 46-56% even when ME levels are high (>10.5). This will restrict pasture intake of high-performance animals, which explains why local dairy farmers prefer ryegrass and phalaris to kikuyu, particularly with today's highly productive cows compared with those of the 1940s and 1950s. Also, undergrazed rank kikuyu has poor feed value.

However, during summer, this is not an issue with Austin's heifers (nor has it been on kikuyu paddocks grazed with Merino weaners on Kangaroo Island). These animals require protein, and just enough energy for low-to-moderate weight gains. Kikuyu is ideal for this.

Austin's other *EverGraze* paddock contained mostly perennial veldt grass.

Perennial veldt grass hasn't been as productive as kikuyu, but green leaf freshens up on light dew during summer and autumn. Leafy veldt with 200 to 1500 kg/ha feed on offer contains 13-25% CP, 9.3-11.3 MJ ME/kg DM with 43-56% NDF.

For 2008 and 2009, the kikuyu paddock has carried 11.2 dry sheep equivalent (DSE)/ha and the perennial veldt paddock has carried 9.2 DSE/ha.

Now that kikuyu seed is available, we are confident new stands can be established from seed especially if the do's and don'ts of kikuyu establishment from Philip Barrett-Lennard EverGreen Farming WA are followed.

Kikuyu has the big advantage of providing groundcover, and animals can be fed in the paddock without risk of soil erosion.

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