

FARMER CASE STUDY

From little things, big things grow...

Farmer:

David Johnson

Location:

Gibson

Soil Type:

Half deep, infertile sand
Half sand and loam over shallow gravel and clay

Annual Rainfall:

450mm

Main Money

Earner:

Beef cattle

Pastures:

Kikuyu, Subclover,
Serradella and
Annual Ryegrass



David Johnson has managed Ireland Farm at Gibson, 20 km north of Esperance, for the last 38 years. Through patience and some careful management he now has approximately 50% of the farm growing perennial pastures. It has enabled him to reliably achieve high stocking rates without the need for supplementation.

The production system is so simple that pastures are never reseeded. The proven and highly adapted annual and perennial pasture species being used spread of their own accord. Approximately half of Ireland Farm is deep, relatively infertile sand while the other half comprises sand and loam over shallow gravel and clay.

Kikuyu is King

Kikuyu was first planted on Ireland Farm over 20 years ago in a small 10 acre trial. As is common, it was not seen for a few years and David assumed it had failed. However after a few years he began to see small patches in that paddock. The rest of the paddock contained lucerne and veldt grass so a rotation grazing system was in place to maximise their production and persistence. Kikuyu started to spread to other paddocks in the rotation, as the seed moved with the cattle in their dung. Kikuyu has never been seeded since that original

10 acre patch over 20 years ago. It now covers 50% or 840 hectares of Ireland Farm. Soil type has determined where the kikuyu has spread to with only the sandier soils being colonised. It has not spread onto the shallower, heavier country or paddocks that were cropped.

Flexible Grazing

The initial rotational grazing management that helped spread the kikuyu between paddocks has now been replaced with a simpler more flexible system. The tolerance of kikuyu to constant close grazing has meant that paddocks can now be set stocked for large periods of the year. Mobs of cows are usually allocated a paddock of kikuyu and a paddock of annual pasture for the year ahead. The gate between the two paddocks is often left open so the cows can choose where they wish to graze. At certain times of year, however, they may be shut in to either the annual or perennial paddock. At the break of season, annual paddocks are often spelled to improve density and leaf area to lift early winter growth rates, meaning all stock at this time graze the kikuyu paddocks. Conversely, if capeweed, for example, gets out of control in the annual pasture paddocks through winter, the kikuyu paddocks will be de-stocked to increase grazing pressure on the annual paddocks.

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The Ireland Farm cowherd enjoying a good season

Companion Legumes

Serradella and sub clover are the main annual legume species in the kikuyu paddocks. If the season is a good one (as in 2005) the kikuyu paddocks can be de-stocked in spring to maximise seed set of the serradella. This helps to build up a large serradella seed bank in the soil and to maximise nitrogen fixation. The density and production of serradella has slowly improved over the years in the kikuyu paddocks. David believes serradella has a competitive advantage over sub clover (when grown with kikuyu) due to a better tolerance of red legged earth mite (RLEM) and false breaks. However, sub clover is still a major component of the kikuyu paddocks.

Each cow-calf unit is allocated 1.6 hectares of pasture at Ireland Farm, which equates to a stocking rate of approx. 10 DSE/ha. Given that no supplements are fed and the variability of seasons in Esperance this is an impressive achievement. Cow body condition is used as a buffer in bad years.

Water Use

Research conducted on Ireland Farm during the Sustainable Grazing Systems (SGS) project identified that water use by the kikuyu pasture was significantly more than the annual pasture. An extra 37 mm of annual rainfall was used by the kikuyu, mainly in the summer and autumn. Bare scalded areas lower in the landscape are now disappearing due to the extra water use in the recharge areas upslope. Kikuyu is slowly spreading into these scalded areas as the salinity levels drop.

Controlled Nutrition

David places his first calving heifers onto kikuyu paddocks 6 weeks prior to calving. He said the moderate quality of kikuyu was ideal during autumn as it provided “controlled” nutrition. It is neither too good which would cause heavy birth weights and calving problems nor too bad which would cause a loss of body condition score and subsequent fertility.

Nitrogen

Some excellent research by Megan McDowell during the 2000 summer showed David that artificial nitrogen applied to kikuyu can be an economical way to overcome a feed shortage. He has applied Sulphate of Ammonia (less volatile than urea) to kikuyu paddocks when faced with a feed shortage. It is a simpler and more cost effective alternative to feeding hay.

