

EverGraze: more perennials, better livestock, healthier catchments

Background

Leading producers, researchers, consultants and environmental agencies across the high rainfall zone of southern Australia, have identified potential farming systems that increase profits and improve the environment. Using this information, EverGraze has established six research (proof) sites from NSW to Victoria and WA where these new systems are being tested. Proof sites use high genetic merit sheep and cattle grazing a range of native and introduced pastures (lucerne, perennial ryegrass, phalaris, tall fescue, chicory, kikuyu).

EverGraze grazing systems respond to limited summer rainfall, and so reduce the need for supplements. Pasture species and management practices are used to increase forage quality over summer to finish lambs or boost the live-weight of ewes prior to mating. Summer growing perennials use more water than annuals or temperate perennials and provide higher ground cover, reducing the risk of soil salinity and erosion.

What was done

EverGraze has over 50 demonstration (Supporting) sites on farms that allow producer groups to trial new grazing systems in their local environment at a commercial scale. Supporting sites are managed in collaboration with catchment management authorities, state agricultural agencies and consultancy groups. Courses, workshops and fact sheets are also under development with full details available on the EverGraze website.

A Kangaroo Island supporting site has been established on the property of Lyn, Trevor and Colin Bolto: Cowell's block. This is an area of sand over clay to deep acid sand soils, and has been sown to rhodes grass, kikuyu, tall wheat grass and tall fescue. There is a control paddock of annual weedy grasses and sub clover.

Grazing days and livestock (sheep) performance is being measured, along with observations of the possible impact of perennial pastures such as kikuyu on adjacent native vegetation.

TABLE 1
Description of three paddocks being monitored in January 2008

Paddock name	North Bates Kikuyu paddock	North Suzie Wong Rhodes grass paddock	South Bates Barley grass paddock
Species	Kikuyu 58% Tall wheat grass 4% Phalaris 2% Strawberry clover 1% Annuals 35%	Kikuyu 18% Tall wheat grass 19% Rhodes grass 5% Annuals 58%	Perennials 0% Annuals 100%
pH _{CaCl2}	4.8	4.9	4.9
Phosphorus ppm	44	72	36
Sulphur ppm	8.1	10.1	29
Potassium ppm	217	169	192
Organic carbon %	3.1	3.4	3.7

Results

The kikuyu paddock (North Bates) has carried 24 dse/ha of weaners since 3 November 2008 and at the end of February 2009 there was still 2400 kg/ha dry matter remaining with 100% ground cover.

The weaners (see figure 1) weighed between 35 kg and 40 kg (late February 2009), with worm egg counts of 120 eggs/gm in January, 40 eggs/gm in February, and still only 60 eggs/gm at end March. The weaners have not been drenched.

The kikuyu has produced green leaves through summer, but there was only an estimated 1% dry matter (DM) of green material at the end of February 2009.

The kikuyu feed test on 27 February 2009 was 56% digestibility, 8.1 MJ/kg metabolisable energy, 5.3% crude protein and 74% neutral detergent fibre. From late January onwards, the weaners received 3.8 MJ Me/day as barley (about 2.3 kg/week) which is around 50% of their maintenance requirements.

According to a GrazFeed analysis, the weaners should be gaining 100 g/day with this supplement, but would still be gaining 50 g/day with no supplementary feeding.

There may be a winter feed penalty with kikuyu. This paddock was closed up for 228 days, from March to October, but has still

carried 10.5 dse/ha for the year compared to 11.8 dse/ha for barley grass/sub clover. There was still 2400 kg/ha pasture remaining at the end of February compared to only 400 kg/ha in the barley grass paddock.



FIGURE 1
Late July drop merino weaners grazing Boltos' kikuyu paddock (North Bates) in February 2009

Kikuyu movement outside paddock. The kikuyu paddock was established 2002 and has an area of scrub along the western boundary, along with shelter belts on the eastern side. There is no evidence of the kikuyu moving outside the paddock.

Detailed grazing records have been kept from November 2007 to March 2009 for each of the three paddocks.

TABLE 2
Feed value and carrying capacity of the different pasture systems

Paddock name	North Bates Kikuyu paddock	North Suzie Wong Rhodes grass paddock	South Bates Barley grass paddock
Average stocking rate DSE/ha (hoggets)	10.5 (ranging up to 75)	11.6	11.8
Feed remaining March 2009 kg/ha DM on offer	2,400 (Stock still in paddock)	500 (Stock removed March 2009)	400 (Stock removed March 2009)
% Ground cover	100	100	70
Hand feeding from Jan 2009 mj ME cereal grain supplements/day	3.8	5.5	1.6

The North Bates Paddock (kikuyu) carried ewes and wethers until March 2008 and was then closed up until November. During this time, about 4800 kg/ha dry matter was produced, with an average of 20 kg/ha dm per day. Merino weaner lambs were introduced in November at 24 dse/ha. They were still grazing in February 2009, with an estimated 2400 kg/ha dm still on offer.

Take home messages

The advantages of kikuyu are

- Weaners can be fed in the paddock
- Sheep can be set stocked for long periods
- Ground cover is maintained
- The kikuyu has carried weaners over summer, whereas the annual pasture is carrying wethers
- There is no evidence of kikuyu movement out of the paddock into adjacent areas of native vegetation.

Due to this excess feed another 640 weaner lambs were introduced in March bringing current stocking pressure up to 75 dse/ha.

The winter grazing penalty of kikuyu is being assessed, but this may be offset by summer grazing or the introduction of more clover into the system to provide more winter grazing.

For further information contact

- Tim Prance, Rural Solutions SA, Victor Harbor on 0427 812 655 or email prance.tim@saugov.sa.gov.au
- Lyn Dohle, Rural Solutions SA, Kingscote on 8553 4999 or email dohle.lyn@saugov.sa.gov.au

Funding / Sponsors:

- EverGraze
- Future Farm Industries CRC Ltd
- Meat and Livestock Australia