

Getting More from our Kikuyu Pastures

Background

There has been widespread adoption of kikuyu by many farmers on Kangaroo Island and in many ways, it's a perfect fit. Kikuyu is tough, robust and responds well to any summer rainfall events. It stands up well to hard grazing and grows on most soil types. However, like most things, they are never quite as good as the advertising promises, and kikuyu's failure may be that it grows too well and can cause a lack of pasture feed during the winter months.

Many KI farmers have noticed a 'kikuyu induced winter drought' when clovers struggle to perform. This can occur if there is a weak break of the season. The kikuyu outcompetes the clover seedlings and an excess of standing kikuyu biomass prevents light and moisture from reaching the soil surface.

Even with increased fertiliser applications and red-legged earth mite (RLEM) control, producers can still struggle to maintain legume content in kikuyu.

Management Options

1. Increasing clover content

The best legume option for kikuyu is sub clover and can significantly increase gross margins, but

how do we increase its growth during winter? One option is to suppress (but not kill) kikuyu growth at the break of the season to allow the clover to dominate. Spray 0.5 to 1.0 L/ha of Clethodim when clover cotyledons are present, about 2 -4 weeks after the break. Don't forget to add an insecticide for RLEM control.

In WA, they heavily graze the kikuyu stand and then drill in the clover seed in late May/June. This works well in the west as they have cold nights (6-8 degrees) and frosts that help to suppress kikuyu growth. It may be an option for some parts of KI.

If you didn't have a seed bank of sub clover then direct drill in clover seed (ensure it's been inoculated). The secret to success is direct drilling (90% success rate) as opposed to broadcasting with a 10% success rate. Use discs or knife points with double disc openers, to cut through the kikuyu stolons and rhizomes and use press wheels. Take care not too seed too deeply.

However, you can only use these techniques if you have good weed control. Suppressing kikuyu growth to allow the clover through also allows weeds such as silver grass, capeweed and chick weed to explode in numbers. Be aware of the weeds that are present and have a plan to control them beforehand or a plan to control following suppression. Alternatively, you may simply be able

Table 1: Silver Grass control options

TREATMENT	COMMENTS
Simazine	Incorporate with moisture. For best results use as a pre-emergent
Propyzamide	For best results use as a pre-emergent
Imazapic	Will reduce clover populations, so only use if legume content is already low
Clethodim	Will suppress but not kill silver grass
Spray top (sub lethal doses Glyphosate or Paraquat)	<p>Spray before hay off (seed in the soft dough stage). If in doubt spray earlier and use stock to nip off any fresh tillers. If grazing fails to control regrowth a respray will be required. Or use a wick whipper to knock down silver grass late in the season before seed set.</p> <p>Note: silver grass seed dormancy is about 2 years, thus if populations are high it will be necessary to spray top for 2 years.</p>

to add an additional herbicide to the mix during suppression. It's critical to control silver grass even if it's only present in low numbers (refer to **Table 1**).

2. Increase pasture productivity.

Most pasture legumes are not as tolerant of acidic soils as kikuyu ($\text{pH}_{\text{CaCl}_2} > 5.2$). Clover also has a higher requirement for potassium (ensure soil is > 100 ppm Colwell K) and phosphorus (35-45 ppm Colwell P in ironstone soils) than kikuyu. Soil test and apply fertiliser and or lime as required.

Use Gibberellic acid and nitrogen (N) to boost kikuyu grow through the winter. Application of N to ryegrass (which has a higher cold tolerance than kikuyu) will produce more winter feed. The most efficient rate of N to boost growth of kikuyu in summer and autumn is 25 kg N/ha.

3. Other pasture mix

Annual ryegrass or forage oats can be sown for additional winter/spring feed. Seed rye grass at 20-40kg/ha. Drill seed in at the break of season either with or without suppressing kikuyu. This option is best in high rainfall zones $> 600\text{mm}$, but it does require re-sowing of rye grass every few years and needs fertilising with nitrogen to maximise growth rates (unless you have an excellent clover stand). Use a disc seeder or knife points with double disc openers and press wheels to cut through the kikuyu.

4. Grazing management

Set stocking at high stocking rates will encourage clover but rotational grazing will favour the grass component, which increases production/ha. Refer to **Table 2** and **Table 3** for recommended grazing pressures.

What's next?

Agriculture Kangaroo Island (AGKI) has received Landcare funding to trial some of the above options to see what will work best for KI soils and climate.

Take home messages

- Clover content in kikuyu can be increased by hard grazing of the kikuyu stand prior to the opening rains (insure RLEM are controlled, lime if soil is $\text{pH}_{\text{CaCl}_2} < 5$).
- Sowing legumes can increase legume content. If grass suppression is used, weeds may also increase unless control measures are taken.
- Legume content can be increased after the break by using a grass selective herbicide to suppress the kikuyu, if you have an adequate clover seedbank.
- If clover needs to be added, drill seed in, don't broadcast.

Kikuyu Pastures (cont.)

Table 2: Recommended grazing pressures for kikuyu (set stocking)

SEASON	TARGETED DM kg/ha	COMMENTS
Summer	800 (1cm or less)	This maintains pasture quality and minimises build-up of rank material that inhibits germination of winter active grasses in autumn.
Break of Season	800 -1000	Maintain grazing pressure to open up the sward allowing moisture and light to reach the ground and space for emerging clover seeds to develop. RLEM control is crucial to prevent seedling loss through predation.
Autumn	800 - 1400	Grazing from 5 cm forms a more upright pasture, this maximises pasture quality and allows light penetration for good establishment of annual clover's and winter active annual grasses.
Winter	1400 - 3000	
Spring	1000 - 1400 (2-5cm)	
Late spring/ early summer	3000 or less	Graze to prevent rank material from accumulating.

Table 3: Recommended Food on Offer (FOO) targets for kikuyu (rotational grazing)

SEASON	PRE-GRAZING FOO DM kg/ha	RESIDUAL FOO DM kg/ha	REST PERIOD BETWEEN GRAZINGS (days)
Winter	2600	1400	60
Spring	3800	1400	30

Funding/Sponsors:

Agriculture Kangaroo Island through the National Landcare Program
Information sourced from *Improving Subtropical Grass Pastures on the South Coast of Western Australia* by Paul Sanford, Ron Masters and Eric Dobbe. Bulletin 4892 (MLA and Dept. Primary Industries & Regional Development).

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