

Pasture cropping: peas and kikuyu a great mix

Background

Pasture Cropping (PC) involves seeding an annual winter active species (in this case peas) into an existing summer-active perennial pasture stand (in this case kikuyu) without killing the pasture. The idea is that the crop grows in the winter when the pasture is in its dormant phase. As the crop grows, it will shade the summer-active grass and suppress its growth. This also helps to reduce green matter contamination at harvest. At the end of the season, the crop can either be harvested or grazed off.

The main advantage from a financial view point is the reduction of input costs. The real gains are about profitability (as opposed to production) as input and labour costs are low compared to conventional techniques. Paddocks can be grazed until the day of sowing and grazed after harvest or used as a standing crop as the summer-active perennial grass will be established and growing. Livestock are an integral component of pasture cropping as they can provide flexibility to the system e.g. the crops can be grazed or mechanically harvested.

The key disadvantage to pasture cropping is that the crop yields will be lower initially until the system is established and you will possibly lose bragging rights at the pub for having the 'cleanest' crop!

What was done

Kikuyu is a summer active perennial pasture that has shown excellent potential for KI soils and growing conditions. When used in a PC context there is the potential to grow more feed when kikuyu is traditionally less productive during the winter months, and the ability to hard graze the stubble (or standing crop) as the kikuyu will be protecting the soil in the summer months.

A non replicated trial was established on A. & T. Heinrich's property to look at a range of herbicide options for successfully establishing a pea crop into an existing kikuyu stand. The kikuyu stand is four years old with an average cover of 35-65%.

Four herbicide treatments were trialled:

- Roundup @ 1.5l/ha
- Spinnaker700 @ 150g/ha,
- Metsulfourom @ 5g/ha plus 1% oil
- Lexone @500g/ha
- Spinnaker700@ 110g/ha + Duiron @ 400g/ha +Paraquat @1.25l/ha.

Kasper peas were seeded at 120kg/ha on the 20th May.

Results

The site was monitored for changes in kikuyu coverage before and after the cropping regime (refer to Figure 1).. The Spinnaker and Lexone had a negligible effect on the kikuyu. The mix of Spinnaker / Duiron / Paraquat (S/D/P) had a slight negative effect on the kikuyu but there is sufficient kikuyu left for the plot to recover easily. The Mets lead to an increase in kikuyu coverage. The Spinnaker, Lexone and the S/D/P plots had the most clover growth during the winter.

The roundup treatment had a significant effect on the kikuyu, killing the majority of the kikuyu plants.

The site was not harvested, but used as a standing crop and fed off to weaner ram lambs. The 79 lambs were weighed in and out of the paddock (total area 2.7 ha). The lambs on average gained 6kg over 24 days which equates to 250g/hd/day. When the lambs were removed there was still excellent ground cover on all the plots except for the Roundup treatment. Interestingly the Roundup treatment had the most pea residue left, showing the stock were preferentially grazing the plots with the good stands of kikuyu coming through the stubble.

FIGURE 1: Changes in percentage kikuyu over time

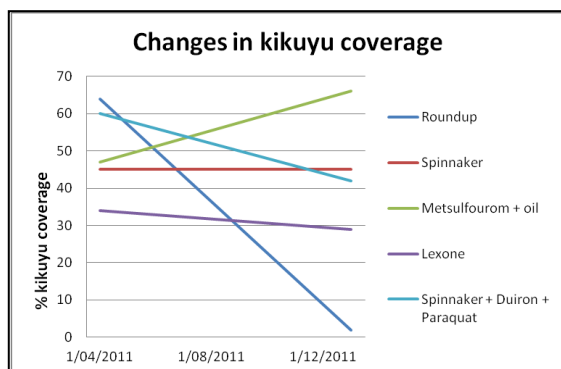


FIGURE 2: pea crop growing through the kikuyu



Take home messages

- Pasture cropping is an option for KI producers wishing to maximise grazing/cropping options.
- If you want to remove kikuyu from a paddock use roundup – if you want to pasture crop use other herbicides!
- Excellent lamb growth recorded 250g/hd/day!
- Producers now have a range of herbicide options that will enable them to establish a crop without killing the kikuyu

For further information contact

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