



A Simple Four Paddock Rotation Lifts Production on Annual Ryegrass Pasture

June 2013

With the implementation of a high intensity, four paddock rotational grazing system on his property Joe Keynes has been able to improve feed utilisation, produce more feed and maintain soil cover targets.

Background

Joe Keynes is planning to sow a 20 ha paddock, which was previously in a cropping rotation, into perennial pasture in 2014. Perennial pastures provide a longer growing season therefore produce more feed and a more stable vegetative cover to reduce soil erosion and improve water infiltration.

To establish a successful perennial pasture, weed control must be achieved prior to sowing. Joe began preparing the paddock in 2012 by growing an oats and vetch hay crop to reduce weed seed set. In 2013 tetila annual ryegrass was direct drilled in early May with single super applied in June. The pasture was intended to be sprayed out in spring to stop weeds setting seed but also be used to provide early feed for ewe hoggets to ensure they grew out over the winter months.

Paddock Subdivision

Temporary electric fencing was used to subdivide the 20ha paddock into 3 sections. Included in the rotation was a 3ha paddock that was already permanently fenced.

Joe used two live wires and tredins spaced at 20m to construct a 700m and 800m fence. With the use of the Rappa™ machine it took 1 hour to install the fence. The Rappa™ machine worked successfully and significantly reduced the time required for erecting the fence.

The fence was powered by a portable energiser which required the battery to be changed every 3-4 days. Joe believes that key is to have a large energiser, conductive wire, a good earth and good connections. At times when the battery was flat the sheep continued to respect the fence as a result of the large amount of feed in the paddock.

Farm Facts

Producer: Joe Keynes

Location: Keyneton

Property Area: 6800 Ha

Enterprise: Wool/ Lamb/ Beef Cattle/ Cropping

Annual Rainfall: 500mm

Rotational Grazing

Annual ryegrass benefits from a light early graze to promote tillering. In early June, the ryegrass was monitored by the “twist and pluck test” to work out when it was ready to graze. This test involves grabbing the ryegrass plant at grazing height, pulling and then twisting. If the stem and leaf breaks off then it is safe to graze. If the plant is pulled out of the ground the roots are not anchored and it is not safe to graze.

Due to the moisture content of the feed in winter (around 85%) no water was supplied.



Supporting Partners:



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A mob of 200 ewe hoggets rated at 1.5 DSE per head were rotated through the four paddocks. The grazing period in each cell ranged from 5 days to 12 days depending on the paddock size therefore the paddocks were rested for 25 to 30 (Table 1).

It is important to measure the remaining feed on offer after grazing to assess if the cell has been under or overgrazed. If the pasture has been grazed below 800kg DM/ha (2-3cm) this will result in less leaf and slower recovery as well as the soil exposed to erosion. Leaving a good residual of 1000kg DM/ha (4-5cm) will result in faster pasture recovery and growth and provide good ground cover. If the pasture is above 2500kg DM/ha (12cm) not enough of the feed has been eaten and this will result in poor feed quality at the next grazing.

If the paddock was not subdivided the stocking density would be 15 DSE/ha. By running one mob in smaller areas the stocking density increased to 40 DSE/ha and up to 100 DSE/ha on the 3 ha section.

Benefits from Intensive Grazing

By utilising the subdivision, Joe has noticed that the stock have stopped camping, tracking and baring out areas, improving ground cover. It has also reduced selective grazing, ensuring increased and even tillering of the pasture and preventing stock walking around the paddock selecting the highest nutrition feed, trampling and wasting feed in the process.

Key Messages

- Stocking density can optimise pasture growth and quality
- Stocking density can reduce selective grazing, improve feed utilisation and maintain ground cover above 70% to prevent erosion
- Temporary electric fencing can be used to subdivide paddocks and increase stocking density

Rotational grazing the cells also allowed the plants time to recover after grazing which contributes to more feed grown.

The Future

Due to the success of dividing the paddock with the temporary electric fence the paddock will be permanently subdivided into 3 sections to allow for rotational grazing. Joe plans to use a wagon wheel design with a permanent water trough in the centre of the paddock.

Table 1: Grazing Details for the Cells Grazing 200 Ewes Hoggets (DSE 1.5)

Cell	Cell Size Ha	Date in	Date out	Days Graze	Before Graze kg DM/ha	After Graze kg DM/ha	Stocking Pressure DSE/ha	*Pasture Utilised kg DM/DSE/day	#Pasture Growth Rate kg DM /day
1	7.5	11/6/13	23/6/13	12	1200	700	40	1.04	37.5
2	3	23/6/13	28/6/13	5	1500	800	100	1.4	25
3	7	28/6/13	8/7/13	10	2000	900	43	2.5	100
4	5.5	8/7/13	19/7/13	10	2200	700	54	2.7	20

*This is estimated and includes intake and wastage
 # Calculated from the previous before grazing msment. The first msment was from germination.

Further Information



A two wire electric fence in a tetila annual ryegrass pasture

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