

Grain & Graze case study: grazing crops for profit

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Grazing crops on Don and Paula Nairn's property was born out of necessity. Cropping is the mainstay of their farming system but they recognise the value in having a mixed livestock-cropping system. Historically the sheep component of their enterprise was essentially a lot of effort for little return.

Don grows 2000 ha of wheat, barley and oats as well as lupins with the occasional canola crop when seasonal conditions allow. He has a self replacing merino flock of about 2000 head, which is pretty standard, but it is the way that he grazes these animals which sets Don apart from others.

In 2001, after a critical look at the relative returns achieved from his cropping and grazing enterprises, Don decided a change was needed. He was faced with the decision of getting out of sheep entirely, or changing his grazing system to boost sheep numbers. The stocking rate needed to be lifted without cutting into the 2000 hectare cropping program and without adverse effect on the yellow sand plain soils, which were prone to erosion.

Annual pastures

Don began renovating pastures in a bid to increase production. He undersowed each grazing paddock with yellow serradella and sub clovers. However,

regeneration of the new pastures such as serradella was terrible in the years it was done. He was frustrated by how slowly the feed came away at the break of the season, as sheep could not be put on the pastures until late July. The legume pastures also failed to persist, especially when stressed with herbicides used to control broad leaf weeds.

Faced with a lack of choice of pasture legumes for his environment, Don began to search for a more effective pasture system for his property. The qualities that were high on his priority list were fast early growth so as to minimise his autumn feed gap, and cheap and effective weed control for his dominant weeds (doublegees, capeweed, radish and brome grass).

Grazing cereals

Don began grazing oats in 2004 and found outstanding early vigour with cereals compared to pasture legumes. He then locked the oats up at the stem

A quick look

Grower: Don and Paula Nairn

Location: Binnu, Northern Agricultural region

Soil type: Mostly sand, some loam

Annual rainfall: 300 mm

Enterprises: Wheat, barley, oats and lupins and Merino sheep



elongation stage and cut it for hay and grain. When the oats were harvested, he found only a small yield penalty from grazing during winter.

Don also tried growing oats for grazing only, however the high costs of seed, fertiliser and chemicals meant it was uneconomic without the grain income from the crops

Over the following four years with direction from Grain & Graze I, he tried wheat and barley as grazing crops and found they grew similar biomass to oats, but they were higher value grain crops and therefore resulted in better returns. Under this system he was able to start grazing paddocks in early June.

Don used the Rappa electric fencing system for erecting temporary fencing around the crops identified for grazing. This innovative system allows Don to put up and pull down a fence in minutes which is crucial when grazing crops, otherwise the process can become tedious.

Don mainly used varieties that he was already growing as these produced the best grain yield. Dual purpose wheats

were poor yielding in his environment and therefore failed to achieve the returns of the common wheat varieties grown in the area such as Carnamah, Bonnie Rock, Eagle Rock and Wyalkatchem.

In 2004 and 2005, Don was able to lift his winter carrying capacity on the grazing paddocks from 4.5 DSE/ha to 7.7 DSE/ha.

Fodder shrubs

After the drought years of 2006 and 2007, Don worked on drought-proofing the farm by planting tagasaste, including a trial plot of the weeping tagasaste on sand plain soils. Traditional tagasaste was very effective in reducing the autumn feed gap, however weeping tagasaste failed to perform. Don has also adjusted lambing time to better coincide with feed availability. This year lambs will drop in late June compared to mid May in the past.

In 2008, Don finetuned the grazing system further and concentrated on the timing of grazing so as not to reduce grain yield.

Grazing canola

In 2009, brome grass became a significant weed in the grazed paddocks due to the lack of control options in the cereal dominant rotation. To control brome grass in 2010, Don trialled grazing canola as part of the Grain & Graze II project. Results showed no yield penalty from grazing canola in these trials, so in 2011 Don grew 305 ha of Hybrid IT canola (44Y84) and grazed a significant proportion of this. Again there was no significant reduction in yield from grazing. Grain & Graze II trial work



FAR LEFT: Don standing in his 2011 canola crop a few weeks after grazing.

ABOVE LEFT: A younger Don in 2003 with a typical unproductive capeweed dominant pasture.

ABOVE: Cereals sown between alleys of fodder shrubs on erosion prone sandy hill tops.

BELOW: The Rappa portable electric fencing system in action.

in 2011 showed Don was able to extract 509 DSE grazing days per hectare from grazing the canola over a 14 day period.

A 10 year journey

It has been an interesting journey for Don, especially in the northern wheatbelt where many growers have moved out of sheep and have become 100% croppers. It has really only been in the last 12 months when wool and meat prices have improved that the system has begun to pay dividends.

It took 10 years and dedication to his grazing operation, but Don now feels he has found a pasture (in the form of grazing wheat and canola) that provides

fast early growth and cheap and effective weed control. This system gives Don the option to control all the major weed issues he faces on his property, while being able to graze them at critical times during the season. He also feels that grazing is another tool in weed control that is not chemical based and thus strengthens his cropping operation from a herbicide resistance point of view.

Still more work needs to be done to fill the autumn feed gap, which significantly constrains winter carrying capacity, but Don feels that grazing crops have added another option for increasing grazing profitability. ✓



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