



# Never let paddocks go naked

## Family's 'no kill' pasture cropping plan

By AMY LAWSON

WELLINGTON pasture croppers, the Maurice family, have been working hard to create a diverse ecosystem and they're being paid dividends through increased soil carbon levels.

Rick and Brenda Maurice, their son, Angus, and his wife, Lucy, run a 2500-hectare cattle and sheep trading, and cropping operation based at "Gillinghall", Spicer's Creek, north-east of Wellington.

They trade in livestock to enable them to adequately match stocking rate with carrying capacity according to seasonal change, and have been pasture and no-kill cropping – farming concepts that involved planting zero-till winter cereal crops directly into summer-active native perennial pastures.

The operation was one of 47 farms across five States that took part in the Biodiversity in Grain and Graze (BiGG) national project, which started in 2005 to analyse biodiversity in a mixed farming system.

The BiGG project was co-ordinated by Grain and Graze, which was itself run from 2003 until June this year as a collaborative partnership between Meat and Livestock Australia, the Grains Research and Development Corporation, Land and Water Australia, and Australian Wool Innovation.

Grain and Graze national co-ordinator, Dr Richard Price, said the BiGG project was a step beyond looking at the impact of agriculture on biodiversity, instead studying benefits of biodiversity on agriculture.

"The work looked at invertebrates, birds and fungi on four different land types on each farm," he said.

"Those land types were cropping, pasture, rotational pastures, and native vegetation."

About 300,000 bugs were individually caught, put under a microscope, and categorised as part of the exercise.

### Biodiversity Best

- "Gillinghall", Spicer's Creek, 2500-hectare cattle trading and no-kill cropping
- Trading in stock is an easy way to match stocking rate to pasture availability
- Perennial grasses are being used to boost soil carbon levels
- Grazing yield and low input costs are the big winners for perennial pasture and no-kill cropping cycles



"What we certainly learned is biodiversity does provide benefits for agricultural production systems and it does this by helping to maintain healthy soils," he said.

"It also does it through certain beneficial bugs and birds, which

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– Angus Maurice

quite often act as predators to pests," Dr Price said.

For the Maurice family, the most interesting finding from their involvement in the project was the level of soil carbon under different land uses.

"The level of soil carbon in the remnant vegetation area was up about four per cent, while our cropping paddocks were still only about 1.5pc," Angus Maurice said.

"That showed us what we're missing out on and what we can aim for."

"We believe the only way to get up to that level is through perennial grasses."

"We don't believe it's possible through a cropping program

alone, and through normal conservation farming.

"Under those systems the grasses aren't there."

The no-kill cropping and pasture cropping was introduced six years ago.

The pasture could be grazed right up to the point of sowing and stock could be put back on the pasture in-crop, and after harvest, to graze stubble and green perennial grasses.

"Biological activity is a lot higher if you've always got something growing," Mr Maurice said.

The difference with no-kill cropping was a dry-sown crop without herbicide or fertiliser inputs – a cheap crop to grow with just \$20 a hectare of seed input costs.

The crop – this year cereal rye – was dry-sown during the established pasture's dormant phase, giving the crop a good opportunity to out-compete weeds.

Last year's wheat crop was planted using three methods – no-till cropping, pasture cropping and no-kill cropping.

After comparing gross margins they found a return of \$300.60/ha for no-till, \$339.40/ha for pasture cropping, and \$225/ha with the low-input no-kill cropping alternative.

Mr Maurice said the main advantages of the latter two options, which were two continually improving systems, were grazing yield over summer and low input costs.

## Trading up at Wellington

**S**HEEP and cattle trading is being used to improve ecology from grazing management and promote perennial grasslands at the Maurice family's Wellington district property.

Rick and Brenda Maurice, their son, Angus, and his wife, Lucy, run a 2500-hectare cattle, sheep and cropping operation based at "Gillinghall", Spicer's Creek, north-east of Wellington.

They have a flexible livestock trading arrangement and have 620 mixed-breed finishing

heifers and 2000 White Suffolk-cross lambs.

Angus Maurice (pictured with Lucy in a cereal rye crop sown over pasture) said they time-control grazed and in reducing their paddock sizes, they had maintained square-shaped paddocks to avoid removing cropping efficiencies.

"Trading allows us to be flexible and we can increase our stocking rate over summer once our crops are harvested and pastures are growing," he said.

"As the systems and grasses improve, the soil biology improves, which gives your crops a chance to improve as well," he said.

He said no-kill cropping worked best to rest country in the season after successive no-till crops, where weeds had been well controlled during that more intensive cropping phase.

The Maurices used a disc seeder with an Acra-Plant V-slice double disc sowing unit, Agro plough single coulter leading the double disc, and a 9.3-metre Morris Magnum chisel plow bar.

They planted on 30-centimetre row spacings to enable them to easily go through high amounts of grass and residue without hair-pinning – thanks to the front coulter, which allowed the seed to get through the grass load and into the soil profile.

■ Contact Angus Maurice, (02) 6846 6393.

### Profit Winner

AFTER five years of ground-breaking rural research, the innovative Grain and Graze program released its contribution to the future of Australian mixed farming at its national forum recently. The Grain and Graze evaluation report said producers who adopted recommended practices claimed an average increase in profitability of nine per cent.

What made this figure particularly encouraging was it was achieved during a series of drought years. In addition, the Biodiversity in Grain and Graze (BiGG) was recognised for its contribution to environmental excellence, sustainability and education, winning the 2008 Banksia Category Award for Land and Biodiversity announced last week. While the program is winding up in its current form, Meat and Livestock Australia and the Grains Research and Development Corporation are jointly scoping the next phase of Grain and Graze, building on the lessons learnt during the past five years.

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