

Regeneration for profitable production

Angus and Lucy Maurice, Rick and Bren Maurice

“Gillinghall” and “Montauban”, Wellington NSW 2820

Overview

As a family we have bought into the concept of a ‘WIN/WIN’ scenario when food and fibre production techniques are closely aligned to natural processes in the environment. The WIN for the environment (and the community) is a shift towards natural landscape function which can eliminate many agricultural issues such as erosion, salinity, loss of biodiversity, inefficient mineral cycling, over reliance on chemicals and over simplified soil producing over simplified food. The WIN for farmers is simplification of the production process reducing the reliance on herbicides, pesticides, synthetic fertilisers, expensive seed and energy which all lead to high break even points and the constant need to tweak and fight nature.

When a regenerative farmer is achieving production levels which match profit levels of high input systems they have an advantage by minimising the continual pressure to increase output just to break even.

Productivity gains are good but this should not be the only focus for agriculture into the future. At some point the economic and environmental costs of focussing on productivity in isolation will exceed the benefits.

Regenerative production systems provide an opportunity to break this cycle and in our view a worthy long term aspiration.

Good soil health for us !!

Our idea of healthy soil contains a mixture of plants and layers of decomposing litter. This leaf material will be broken down by a mixture of soil biology and patchy disturbances such as short duration high intensity grazing, establishment of an annual crop and even better a combination of both.

To achieve this we have chosen to let natural regeneration of plants occur on 80% of our



farming area. This has resulted in significant recruitment of native perennial grasses (mainly C4 grasses some C3 grasses and some forbs) in amongst the existing introduced plants such as phalaris, lucerne and clovers. To achieve this, we use a combination of Pasture Cropping, No Kill Cropping and Time Control Grazing which when done correctly, often simultaneously, will continue to promote natural regeneration while achieving production results. This is a WIN/WIN situation.

We like the flexibility these techniques provide with the bias easily adjusted from season to season. For example in the last 7 years pasture cropping has ranged from 30% to 65% of total area with livestock and no kill cropping increasing and decreasing in response to seasonal and market conditions as well.

Each January we make a plan for each paddock for the year. In formulating the plan we look at the production history on each paddock (grazing and cropping), the plant mix, mineral cycling potential and then subjectively rank paddocks on their production potential. We then look at a good, average, bad gross margin scenario from different enterprise choices and allocate one of the options to each paddock. This process provides a framework for us all too fully discuss

the options and hopefully generate good triple bottom line decisions for the year ahead. While the annual plant provides the basis for an initial budget, this can be adjusted to meet changes in seasonal conditions and markets with no cost and limited time required to actually switch from one production technique and type to another.

Diverse grassland provides the constant foundation, with choice of enterprise determined by multiple factors.

The only way we can truly achieve full flexibility in enterprise choice is by having multiple production techniques which operate on top of grasslands. To try and do this without grasslands is generally degrading, time consuming, costly and inflexible. Some examples of things we've tried are:

1. Pasture Crop Wheat, Barley, Cereal Rye, Oats, Mustard, Spelt
2. No Kill Oats, Barley, Cereal Rye, Clover, Millet, Lab Lab
3. Livestock Trading Lambs, Merino Ewes, Xbred Ewes, Steers, Heifers & Cows
4. Livestock Breeding 1st Cross Lambs, Dorper Lambs, Cows & Calves

Many of our paddocks have had one from each of the four choices all in the same year.

We have retained 20% of area as conventional no-till cropping with rotations of Wheat, Canola, Barley and Lupins. These paddocks are the most suited to continuous cropping and provide the best chance of high production results when the seasonal conditions allow. These paddocks have the highest cost base and carry the highest financial risk if there is a production failure, they also carry the highest ecological risk as the system is completely simplified and controlled by us. These areas also provides our own localised comparison with the regenerative techniques.

The transition is a long term process and this is OK.

In the process of implementing regenerative techniques we have observed different production and regenerative results each year. We continue

to be attracted by the large upside of cropping gross margins so we have continuously pasture cropped some paddocks (with a herbicide) which is a frequent disturbance that can actually limit ecological advancement. We are still recruiting c4 perennials doing this but it is difficult to achieve maximum diversity (our idea of soil health) with 1 or 2 herbicide applications simplifying the ecology.

In a continuous pasture cropping situation we have the advantage of grazing income plus animal impact for soil health along with significant reductions in chemical inputs compared to conventional systems. However, with frequent herbicides we limit ecological advancement and partly move back towards the farming system of full control with the need to tweak a more likely outcome.

Reconciling the inner conflict that comes with targeted use of herbicides (and other disturbances) for short term production outcomes is an issue for us. With a stated long term goal of maximum bio-diversity, sometimes in Pasture Cropping we are using herbicides, synthetic fertilisers and non renewable energy to increase the yield of the crop at the expense of plant and biological diversity.

Disturbance sounds like a negative put it is a necessary positive!

Having worked with Bruce Maynard and Colin Seis over the last 3 years we have learnt the disturbance is an important thing to understand for regenerative farmers. Disturbance can have a positive influence on production and ecology and the same type of disturbance can have a negative effect on both as well. The challenge is to use the right type at the right frequency to achieve WIN/ WIN results under the conditions we have on our own farms.

- We have had good ecological results with a one off Agrow Plow disturbance (2 foot spacing, lead coulters, minimal soil inversion) followed by No Kill Cropping and good grazing management.
- We have had great ecological results with No Kill Cropping and good grazing management on their own.

- We have had good production and ecological results with one off Agrow Plowing, pasture cropping with discs, herbicide and fertiliser.
- We have had good production results but poor ecological results if the above is frequent.

Concluding comments

We aim to find the right balance for our ecological and economic realities with a strong preference to retain all the enterprise options we currently have with the full removal of herbicides and pesticides as a frequent short term production disturbance. The ongoing goal will continue to be a farming system with minimal reliance on outside inputs with production levels delivering a return worthy of the effort and capital invested.

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