



Multi-species perennial pastures lift profit and resilience

Planned grazing... a game changer!

A shift to planned grazing of sheep and cattle on multi-species perennial pastures has added profit and resilience to Michael Baldry's 840-hectare farm at Beggan Beggan, near Cootamundra.

Planned grazing involves grazing animals on paddocks of about 15 ha for five to 10 days, followed by 30 to 60 days of recovery.

Based on advice from Tim Condon from Delta Agribusiness, Michael used knockdown and selective herbicides to reduce the seedbank of thistles and annual ryegrass before sowing multi-species perennial pastures across 720 ha four years ago.

The pasture included lucerne, chicory, plantain, phalaris, prairie grass, fescue, cocksfoot, perennial rye and various clovers.

Mr Condon recommends three subcovers with a range of flowering dates to make the most of favourable seasons so there is plenty of seed available in tougher springs, along with a range of aerial seeding annual legumes and white clover.

"I always recommend including clovers because they are highly productive in their own right and fix nitrogen, which drives grass growth," he says.

"White clover, in particular, being a perennial, provides continuous ground cover even under grazing pressure from sheep."

Michael aims to maximise pasture growth to capitalise on summer rainfall, thereby ensuring year-round green ground cover to build soil carbon and microbial function.



Farm Snapshot

Owners: Michael and Andrea Baldry

Employees: James Yu and Geoff Briant

Location: Beggan Beggan, New South Wales

Farm size: 840 hectares

Average annual rainfall: 600 to 650 mm

Soil type: granite loam

Soil pH Water: 5.0 to 6.5

Topography: undulating

Sheep: 1500 Dohne ewes and 25 terminal sires.

Trade and breed crossbred lambs

Cattle: 550 steers and heifers





Regrowth: Left of the fenceline, 21 days since grazing and right of the fenceline, five days after grazing.

He says more than eight pasture species are needed to increase the mycorrhizal fungi population, which improves plant access to nutrients and moisture.

Two years ago, Michael stopped trading his own cattle after developing an arrangement with a local processor.

The cattle are backgrounded for a premium. This enables pastures to be actively grazed year-round to stimulate growth. "That's the best way to improve soil carbon."

Grain is not fed to cattle, but Michael opportunistically cuts hay in spring when pastures cannot be fully used.

Accordingly, cattle are supplemented with hay to help the pastures 'go further' and promote digestion when fibre is needed.

As well as running cattle, Michael joins a flock of Dohne ewes to Poll Dorset rams and opportunistically trades lambs.

Grazing management

Currently, the cattle are grazed in three mobs of about 185 heads per mob. The sheep are grazed as one flock of 1500 ewes and one flock of 1450 lambs.

Electric fencing is used to subdivide 30 paddocks into 60 paddocks of about 15 ha. These are grazed using the planned system for five to 10 days, followed by 30 to 60 days of recovery.

Mr Condon says this grazing system ensures the long-term persistence of multi-species perennial pastures.

"When you put the stock onto these pastures for extended periods, they will eat the chicory first and then the other species," he says. "These animals know they'll only be on the paddock for about one week, so they are less selective, which leads to better pasture persistence."

Added resilience

Michael says the multi-species perennial pastures have added drought resilience to his business. When conditions turn dry, a high level of ground cover is maintained, and the deep-rooted perennials persist to recover quickly when rains return.

"We also increase the recovery period to ensure the plants survive," he says. "About one-third of the plants are ungrazed to keep the roots growing."

Generally, animals go onto pastures when the average of all the species is 60 centimetres high. They are removed when the average pasture height is 20 cm.

In drought conditions, Mr Condon recommends destocking pastures and moving animals to a containment feeding area. "This might involve picking the worst pasture and using that as a sacrifice paddock, setting it up for future improvement," he says.



Soil tests

Michael has engaged the biotechnology company Metagen to analyse soil microbiology from 10 paddocks a year.

“The results indicate our soils are in a healthy range,” he says. “I have found multi-species perennial pastures to be a profitable farming system.”

He says annual soil chemistry tests show soil carbon has lifted during the past three years.

Lessons learned

Michael uses four temporary sheep troughs and three temporary cattle troughs with quick-release couplings. Mostly, two troughs are placed in each paddock to maximise pasture use.

The semi-permanent electric fencing has three electrified wires. The temporary electric fencing is used and moved regularly. The pasture under the wires is slashed to prevent earthing out.

“With hindsight, I would have moved to permanent fencing more quickly to reduce the workload,” he says.

“Trade sheep and cattle take a week or so to train to respect the electric fence.”

Moisture probe

A moisture probe is positioned in one paddock. Michael plans to use the data to explore the relationship between soil moisture and paddock performance.

The paddock with the probe was sown to lucerne, clover and phalaris in 2014. Native grasses have started to take hold. In the next five years, this paddock will be sown to a multi-species perennial pasture.

Mr Condon says moisture probes are useful to determine if a pasture is likely to run out of moisture and stop growing.

“If you can see the pasture has no moisture underneath to 1.8 metres, you know that once your animals eat the feed, it will not grow back,” he says.

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