



Improving livestock performance through pasture management

Creating landscape-scale change

In the semi-arid conditions of Condobolin, local farmer James McDonald faces a pressing dilemma: a desire to expand his livestock operations with limited research-backed guidance.

Fifteen kilometres north of Condobolin, undulating across red loam sand and gravel hills, the McDonald's grazing capacity is limited by moisture, underscoring the critical importance of aligning the stock rate with carrying capacity.

A desire to expand his livestock operation, however, has led James across unfamiliar terrain as he works alongside Central West Farming Systems (CWFS) to trial different pasture forage mixes and assess them on the basis of livestock performance. This demonstration trial is part of the "Creating landscape-scale change through drought resilient pasture systems" project funded by the Australian Government's Future Drought Fund.

In the 2021/22 season, James sowed four distinct pasture mixes and compared characteristics such as persistence, which are identified as improved drought tolerance, as well as liveweight gain and overall livestock production to see 'what works' within the unique parameters of the local environment.

He hopes that the final analysis will reveal some viable options that local producers can keep in their back pocket and confidently integrate into their production systems.

"I'm trying to lean a little more towards livestock than cropping at the moment and I suppose I'm just trying to look outside the box a bit," said James.



Farm Snapshot

Owners: James, David & Graham McDonald

Employees: Billy May

Location: Condobolin, New South Wales

Farm size: 4,000 ha

Area cropped: 1,500 ha

Area Pastured: 2,500 ha

Previous crop sequence: 2 wheat crops and then under sown

Soil type: red loam and gravel

Soil pH _{Water}: 5.5

Topography: undulating

Sheep: 4,000 merino



Our biggest challenge

With lucerne currently the backbone of his grazing operation, James says that alternatives or complementary pastures would not only help manage drought and other climate fluctuations but also enable him to maximise land usage.

“Our biggest challenge is managing our pastures around water use,” said James. “When we get a big storm event, all our lucerne grows rapidly and we don’t have enough stock to chew it off in time before it’s gone in a few months time.”

“Finding a method of managing our pastures so that we can prolong our grazing period and also utilise a bit more of our poorer, hillier country would certainly improve our livestock productivity,” he said.

Pasture trial

Among the pasture mixes trialled were a Temperate Pasture Mix, a Tropical Pasture Mix, a Hard-Seeded Pasture Mix, and a Traditional Pasture Mix, utilised as a control. Each mix served as a potential solution to James’s quest for enhanced livestock productivity and sustainable pasture management.

While the trial initially aimed to assess three new pasture mixes, logistical constraints and unfavourable seasonal conditions led to a focus on the control and digit grass pastures. James observed grazing periods of six weeks each, with consistent monitoring of livestock performance and pasture growth.

“The grazing blocks were pretty much identical,” explained James. “There was a mob of 2100 wethers which were weighed into and out of the paddocks, and both pastures had pretty good rain so they were both growing at a rapid rate,” he said.

With the data sets still undergoing analysis, James explains that drawing conclusive assumptions is challenging at this stage. Despite grazing being limited to only two pastures, James eagerly anticipates the results, acknowledging the existing limitations but remaining hopeful for some valuable insights.

“Just eyeballing, they didn’t come out of the Digit Grass (Tropical Pasture) as good as what I expected,” he offered. “It probably just confirmed what we already knew, but it’ll be good to get some actual numbers and figures behind what we already surmised,” he said.

Despite observing a lack of nutritional value in the tropical pasture mix, James says he still thinks the digit grass could be a valuable addition to his grazing program in terms of land use optimisation.

“The digit grass looks great, but I think because they were wether lambs and they’re in a growing phase it might have just been the wrong feed for them,” he explained. “I think older stock would be much more suitable for the digit,” he said.

“If we can prove that the digit is adequate enough to maintain or even improve the body score of older sheep in between joining or over joining, it’ll allow us to utilise a bit more of our country,” said James, emphasising the application value of the trial.



James McDonald in his Digit Grass (tropical pasture) trial.



Wendy Gill of Achieve Ag Consultancy looks over the control pasture.

Where to now?

The project's lead researcher, Wendy Gill, explained that although data on liveweight gain is unavailable for two of the pastures, CWFS is actively considering utilising the collected pasture data from these non-grazed pastures in the demonstration. They aim to use this data to model the average daily weight gains based on the pasture nutrition information.

"It's a shame that this trial has only aligned with one full growing season, and it would be great to see future funding for longer term demonstration studies to enable a greater data set to be captured," said Wendy.

"At least by modelling the data we have it will be able to offer a comparative analysis starting point for producers in the region," she said.

A full project report analysing the findings is available for producers and agronomists. Click on the QR link below.



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For more information

Find out more about the CWFS Resilient Pastures Project Research Results.

cwfs.org.au

