



Drought resilient pasture demonstration site — Barooga

Background

As part of this project, Riverine Plains established two perennial pasture demonstration sites during May 2023 at Savernake and Barooga (NSW). The Savernake site was hosted by Chantelle and Christine Gorman, while the Barooga site was hosted by John and Sarah Bruce.

Pasture species grown

We've been growing lucerne forever. I've been farming for 20 years and I've tried chicory and everything, but as far as sheep tucker goes, you can't really beat it.

For the last four to five years, we've been growing the L70 lucerne cultivar as it's one of the hardier varieties and it is relatively cheap. For the two 10 ha demonstration paddocks, which we established in May 2023, we sowed 9 kg/ha of L70 lucerne with 6 kg/ha of Zulumax arrowleaf clover. This was later than usual given the wet start to the year. Adding arrowleaf clover helps bulk the feed, as it produces good quality and quantity feed through spring and into summer, typically allowing us to first graze it in August.



Farm Snapshot

Owners: John and Sarah Bruce

Location: Barooga, New South Wales

Farm size: 1,200 hectares

Enterprise: mixed farming

Winter cropping: wheat, canola, and barley

Summer cropping: rice and corn

Sheep: first cross lambs from Merino ewes and Border Leicester rams, lambing in April-May.



Perennial pastures for our system

Having grown lucerne for the past 20 years, I've found the deep-rooted nature of lucerne allows it to have good longevity, even through a couple of droughts.

A key part of why I like perennials is that they're relatively easy to manage. Having sown lucerne into the dryland paddocks, we won't need to resow anything in there for five to six years if we look after it well. I don't like to come in with a tyne machine to over-sow into a pasture, as I've found it causes too much damage. You're better off looking after it well from the beginning.

Managing our livestock

We have lucerne both under a centre pivot and in dryland paddocks. We have split the 40 hectare irrigated paddock into four smaller paddocks using a two-strand electric fence running east-west and a permanent fence running north-south, to allow for well-managed rotational grazing and to use them as lambing paddocks. We typically will have 500 ewes split evenly across the four paddocks under the irrigator.

In the dryland paddocks, we keep the numbers relatively low, with around seven to eight head per hectare, rotating them across the paddocks based on feed availability and to ensure the pasture isn't grazed too hard. By keeping the sheep off the paddocks when it's been dry, like during the 2024 autumn, we've been able to see it pick up well after

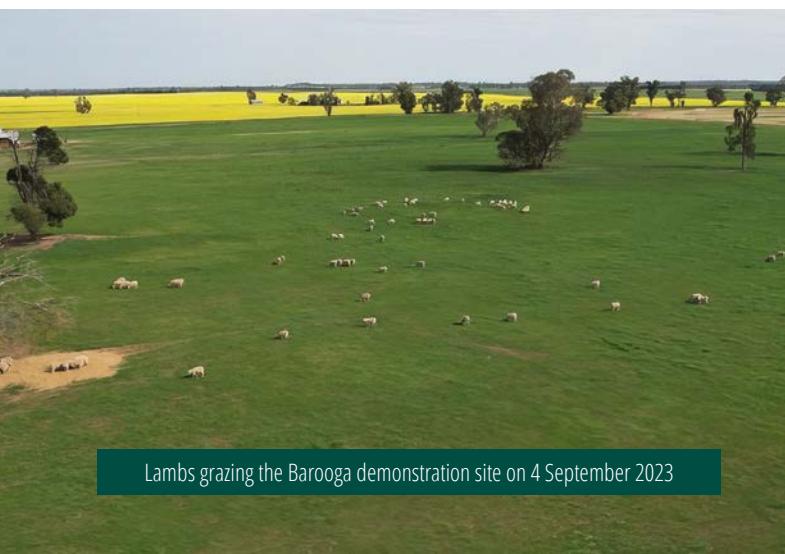
rain (we received 20 mm rain in the first week of April). When we have quite mild autumns and good rain, like we have in the previous four years, the lucerne has grown well, providing good feed for pregnant and lactating ewes. Once we mark the lambs, they are then shifted onto the grazing crops.

Managing pastures agronomically

We sow most of our lucerne with an air seeder with 25.4 cm spacings at 8–10 kg/ha in the dryland paddocks. For the irrigated paddocks, we'll speed-till the soil then sow it with a spreader due to the targeted heavier sowing rate (20–25 kg/ha), which we use because much higher plant densities can persist with greater soil moisture under irrigation.

We've found that some of our best lucerne establishment results come when we sow it after a barley or wheat crop, and by sowing it on its own and during early April, not August. It's generally the first thing we sow, and we typically add 200 kg/ha single super and 80–100 kg/ha potash. We cut lucerne hay off the irrigated paddocks, and if we have a good spring, we'll cut a bit of hay off the dryland paddocks as well.

We do manage the dryland and irrigated lucerne quite differently, because the irrigated is a lot more intensive and we are pulling a lot more off it. In the dryland paddocks, we don't generally do too much spray topping. We instead try to counteract that with fertiliser, keeping it clean, so if we want to make hay, it's good-quality hay.



Lambs grazing the Barooga demonstration site on 4 September 2023



Barooga demonstration site showing good regrowth following grazing 30 October 2023



Drought resilience

Given the lucerne grows well over summer, we use the lucerne paddocks to set ourselves up well for lambing in April-May. Having a good quantity of high-quality fresh feed is valuable over the summer as it saves us from trail feeding in a good season.

In 2018-19 when it was quite dry, we established a containment feeding area to enable us to get stock off the paddocks to prevent the pastures from being over grazed. Back in the millennial drought we were grazing the country pretty hard, but since having a containment area, we've found we can better support the lucerne after 10-15 mm of rain, by keeping the stock off it initially, which helps it get going. If we were to graze it straight away, we'd be forcing it to continue drawing energy reserves from its roots, which can reduce plant density over time. Once receiving a bit of moisture, lucerne can provide a good feed source relatively quickly, compared to an annual, which would need sowing, then time to establish.

Having the grazing crops also allows us to give our pastures a rest. We can mark the lambs, then put them onto the grazing crops. Depending on what the weather does, for example if it's still looking dry and the grazing area has been eaten, we can wean early and feed the ewes into the containment area to get them off the pastures. This way we can keep the ground cover in the paddocks.

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For more information

Details about the demonstration sites, as well as the results, are published in Research for the Riverine Plains, 2024.

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