

The chalk and cheese of clover versus no clover

Introducing clover back into pastures

Introducing sub-clover into an existing old phalaris stand was an easy fix to increase pasture production at the Southern Farming Systems (SFS) Rokewood farm demonstration site and is helping to encourage producers to do the same.

James Palmer, SFS researcher, explains there are plenty of old, run-down stands of Australian phalaris across south-west Victoria that could benefit from the same 'recipe' and the introduction of clover.

James said, "Why sub-clover disappeared from the system was probably a combination of low Olsen phosphorous levels, less than 6 mg/kg, and leaving excess litter in autumn which reduces germination. Uncontrolled black field crickets also eat seed and pick off what seedlings do establish."

The results

James explains one of the most successful methods of quickly improving pasture at the Rokewood site was to increase phosphorous levels and oversow clover.

"We had no clover, but after sowing in 2022, the pasture became visually different by spring and the following year we started to measure production benefits. To look at the pastures with and without clover, well, it was chalk and cheese.

"In 2023, where clover was direct drilled, we grew an extra 0.7 to 1 tonne of dry matter per hectare compared to the unsown areas over the winter and early spring period. This extra pasture growth was thought to be coming from the boost in nitrogen levels.

We measured 23 mg/kg of nitrate and ammonium on the clover plots versus 13 mg/kg on the unsown plots in December 2023. But we also noticed that clover was filling the gaps rather than silver grass.

"Feed quality was also higher in terms of energy and protein. For early August, Grazfeed modelling showed two-week-old lambs would be growing nearly an extra 100 g/day with the extra feed quantity and quality," he said.



Image 1 Sub clover over sown in the first year (1/12/22)



Image 2 Pasture with no sub clover over sown (2/12/22)

The process

James said the process was relatively easy.

“Our phosphorous levels were low, so we put on a good dose of superphosphate – about 300 kg/ha – to start building levels.

“We applied paraquat to suppress the phalaris. This burns off the exposed top growth but doesn’t get transported into the roots so that the phalaris can recover and it has the advantage that it kills off any germinated annual grasses.”

James says the success of the oversowing method is closely tied to the competition from weeds.

“You may not have to apply herbicide in autumn if you have spray-topped or winter-cleaned the year before and reduced seed set of short-lived annual grasses. Weed control should always be high on the radar as it helps pasture establishment.”

James said.

Selecting the right variety

Two cultivars, Rouse and Yanco – both tolerant of waterlogging and mid-maturing cultivars – were sown.

James said, “The maturity time is matched to good growing conditions in late September and early October to give the plants enough time to flower and set seed before the pasture dries off in late November.”

James said they used two cultivars which had two to three weeks' differences in flowering time to account for seasonal variations.

Grazing management

Stock were kept off the paddock until the clover had grown three trifoliate leaves. “We kept the pasture short – about 5 cm in height over winter. Then we backed off the grazing pressure in spring once we started to see flowers appearing to maximise seed set.”

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Grazing management only became challenging over the summer period when they tried to graze the excess pasture litter to help break down the hard seed coat for sub-clover germination.

“The hardest bit was grazing the pasture down to 1000 kg DM/ha in the second year. We had a rare flooding event in October, followed by summer rainfall. This meant the sheep chased the green pick rather than eating down the phalaris. We ended up slashing the paddock.”

James said that even with starting with more trash than he would have liked, the clover plant numbers doubled from the first year.

“16 kilograms of seed per hectare was sown, but the new sub may have produced at least 100 kg/ha of seed,” he said.

“What I like about this technique is that the risk is low, but the rewards are great. The pastures look better, the stock are doing better and they should keep improving as the sub-clover seed bank builds up.”

Resources

[**Legumes Hub / Meat & Livestock Australia**](#)

[mla-how-do-i-determine-why-my-sub-clover-is-underperforming.pdf](#)

[how-do-i-spray-top-to-reduce-annual-weeds-in-pastures_9pp.pdf \(mla.com.au\)](#)

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