

PASTURE RENOVATION OVERSOWING EXISTING PASTURE

BACKGROUND

Pasture composition changes over time through grazing management and seasonal effects eg. dry seasons. To maintain productive and sustainable pastures a regular assessment of their composition should be conducted.

The Pasture Paramedic Tool, is a tool that assists farmers to assess pastures and make timely & clear decisions. Pasture Paramedic can indicate when farmers need to consider oversowing or resowing.

When oversowing, vigorous plants such as perennial ryegrass, sub clover or a cereal should be used, as this is to ensure the plants can compete with the existing pasture species.

This fact sheet is going to explore oversowing options using two scenarios of high pasture competition vs poor pasture competition.



Figure 1. Old Australian phalaris pasture



Figure 2. Old Australian phalaris pasture oversown with sub-clover using direct-drill.



Figure 3. Direct drill sub-clover seedlings

SCENARIO ONE

Likely high competition from annual grass and phalaris

- Paraquat can be used after the autumn break to suppress phalaris, kill weeds and then sow. This option should only be used if the phalaris has adequate plant reserves to recover from the herbicide application.
- If broadcasting seed, look to increase sowing rates by 25%-50%, remove pasture trash to achieve optimum seed-to-soil contact and tread in with stock post-sowing.

SCENARIO TWO

Not much competition, weeds are sparse, lots of bare ground

- Before the break, after mid-March, dry sowing can be done with discs or tynes (direct drill) that don't rip up existing plants.
- Broadcasting seed on the autumn break and using harrows to scratch it in, if you don't have a drill or a sowing contractor is too expensive ($\approx \$60/\text{ha}$).

BROADCASTING VS DIRECT DRILLING SEED

Southern Farming Systems is investigating establishing sub clover in an existing Australian phalaris pasture to increase the pastures productivity and manage the composition aim of 60% grass, 40% clover, as a long term trial (est. 2022) using different management options, at the SFS Rokewood trial site with funding from Meat & Livestock Australia Innovative Mixed Farming Project.

Method

In 2022 five treatments were established in 60m strips and then further subdivided into four 5m x 15m plots for assessments.

Paraquat was applied to suppress the Phalaris May 15, before sowing on May 17.

Treatments

Direct Drill treatment used a tyned baker boot drill and Broadcasting used hand spinners at two different sowing rates of 8 and 16 kg/ha with SuPerfect fertiliser. A control nil treatment was also established for comparison purposes.

A mix of two Yannicum sub-clover cultivars, Yanco (mid maturing) and Rouse (mid-late maturing) were used for all treatments.

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RESULTS

The direct drill treatments in the trial had the highest seedling establishment of clover when compared to broadcasting (Figure 4). Direct drilling is an advantageous sowing method due to its limited soil disturbance, providing fewer weed problems and good seed-to-soil contact.

Broadcasting seed can be effective when other methods, such as direct drilling, are not suitable, for example, in rocky or untrafficable paddocks. However, it is likely to produce a much lower germination percentage than drilling due to the radicle (first root) drying out on the surface during germination due to poor soil-to-seed contact, reduced moisture availability and ant predation of surface seed.

Pasture production results from this trial indicated that for 2023, the direct drill treatments also resulted in higher dry matter produced than the control and broadcast seed (Figure 5). This is likely a result of the higher clover content and therefore more nitrogen being fixed in those treatments, increasing the soil fertility.

MANAGING POST SOWING

As the new pasture emerges, it's important to monitor for crickets, slugs and red-legged earth mites. There are many bait and insecticide options for control, so monitor closely as they can quickly destroy young seedlings.

Grazing can occur in winter once the pasture is adequately anchored and starts growing its third leaf, this is when it begins to produce secondary roots, which anchor the plant more securely. A simple 'pinch and twist' test can be used to determine when grazing can start. A light graze can stimulate tillering and root growth, with adequate spelling following grazing.

To keep your pasture productive it is important to monitor your grazing management coming into the autumn break. In particular, to get good re-establishment of sub-clover from season to season, the pasture must be grazed down to get rid of any excess plant material. Excess plant material can act as insulation and inhibit the breakdown of the sub-clover hard seed coat, which requires fluctuations in temperature to breakdown and allow germination. Established Phalaris pastures can become extremely dense and crowd out clover and therefore grazing down to around 1000-2000 kg DM/ha is advised before the autumn break to promote good re-establishment of clover.

To learn more visit <https://sfs.org.au/project/more-sub-clover>

RESULTS

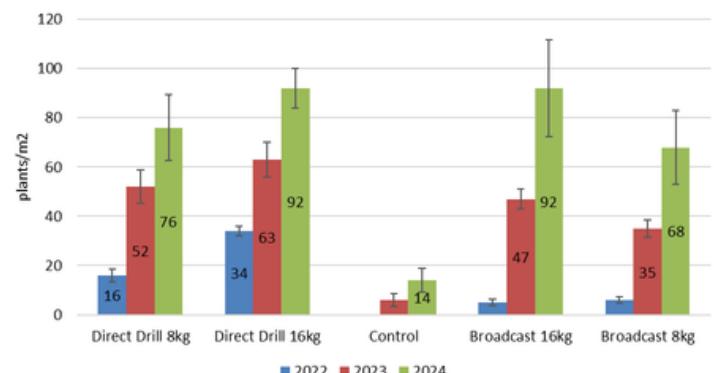


Figure 4. Sub clover seedling emergence numbers in plants/m² for each treatment in 2022, 2023 & 2024. Error bars represent the standard error of the mean for each year.

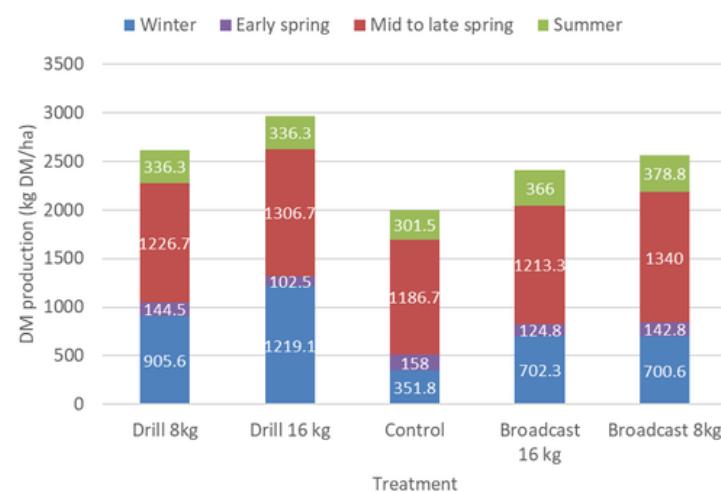


Figure 5. Dry matter production in kg DM/ha for sub-clover oversow treatments in 2023.



Figure 6. Sheep grazing excess plant material in sub-clover oversow trial before the autumn break 2023