

Producer Demonstration Site

Annual / Progress report

Date: 10 Jan 2022

Group name: Southern Dirt

PDS project code: L.PDS.1904

Milestone #: 6

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| <p>Is your project on track to achieve its objectives? Yes / No. If not, why not and how will you adjust the project to achieve the objectives?</p> <p>Yes</p> | | |
| <p>Number of core producers engaged currently (please make a note if this number has changed)</p> <p>5 core producers</p> | <p>Number of observer producers involved to date (if known)</p> <p>16 observer producers</p> | <p>Number of unique demonstration sites</p> <p>4 producer demonstration sites</p> |
| <p>Location of sites in year 1</p> <p>1 site completed</p> <ul style="list-style-type: none"> - Kojonup District High School <p>2 sites deferred due to seasonal condition</p> <ul style="list-style-type: none"> - Geoff Kowald - Alisdair Staniforth-Smith | <p>Location of sites in year 2</p> <p>3 sites completed</p> <ul style="list-style-type: none"> - Jeremy Kowald <ul style="list-style-type: none"> o Katanning - Ben Webb <ul style="list-style-type: none"> o Kojonup - Rod Hester <ul style="list-style-type: none"> o Bridgetown | <p>Location of sites in year 3</p> |
| <p>Achievement criteria for this milestone as per your contract (please copy criteria from your contract).</p> <p>The milestone requirements are as follows:</p> <ul style="list-style-type: none"> • Annual Report • MER report • Case Study 2 written and approved by MLA and published in Southern Dirt newsletter/website • 3 x on farm event delivered field walks/workshop • Data results collated and analysed | | <p>Report your progress against each criteria for the period</p> <p>1) Annual Report Completed and submitted 10 January 2022</p> <p>2) MER Report Completed and submitted 10 January 2022</p> <p>3) Case Study 2 Completed and submitted 22 December 2021</p> <p>4) 3 x on farm event delivered field walks/workshops</p> |

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| Communications delivered as per plan | <p>1 x field walk/field day completed on 10th October 2021.</p> <p>5) Data results collated and analysed Completed and submitted 5th January 2022</p> <p>Communications delivery The project was communicated to the producers in the region through several channels as outlined below:</p> <ul style="list-style-type: none"> - Only 1 of the 3 field days/field walks was completed in 2021. - The case study on dual purpose crops was released to producers through the Southern Dirt web site. - The project was communicated through social media posts making up part of the communication plan - The projects results from 2020 were communicated to the Southern Dirt members through the web site and included in the annual trials booklet which is also released to all members. |
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| <p>Summarise any key outputs and findings from your projects e.g.:</p> <ul style="list-style-type: none"> • Demonstration site results <p><u>PDS 1 – Ben Webb</u></p> <p>Crop – Long season wheat</p> <p>Sowing date – 5 May 2021</p> <p>Growth stage – GS22 – GS24</p> <p>Sheep – 1,600 ewe hoggets (1 DSE)</p> <p>Area – 80 Ha</p> <p>Stocking rate – 20 DSE / Ha</p> <p>Entry – 14 June 2021</p> <p>Exit – 16 July 2021</p> <p><u>Controls</u></p> <ul style="list-style-type: none"> - Grazing cages erected in crop to measure ungrazed yield <p>Results</p> |
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Photo 1: Grazed wheat on 11 November 2021

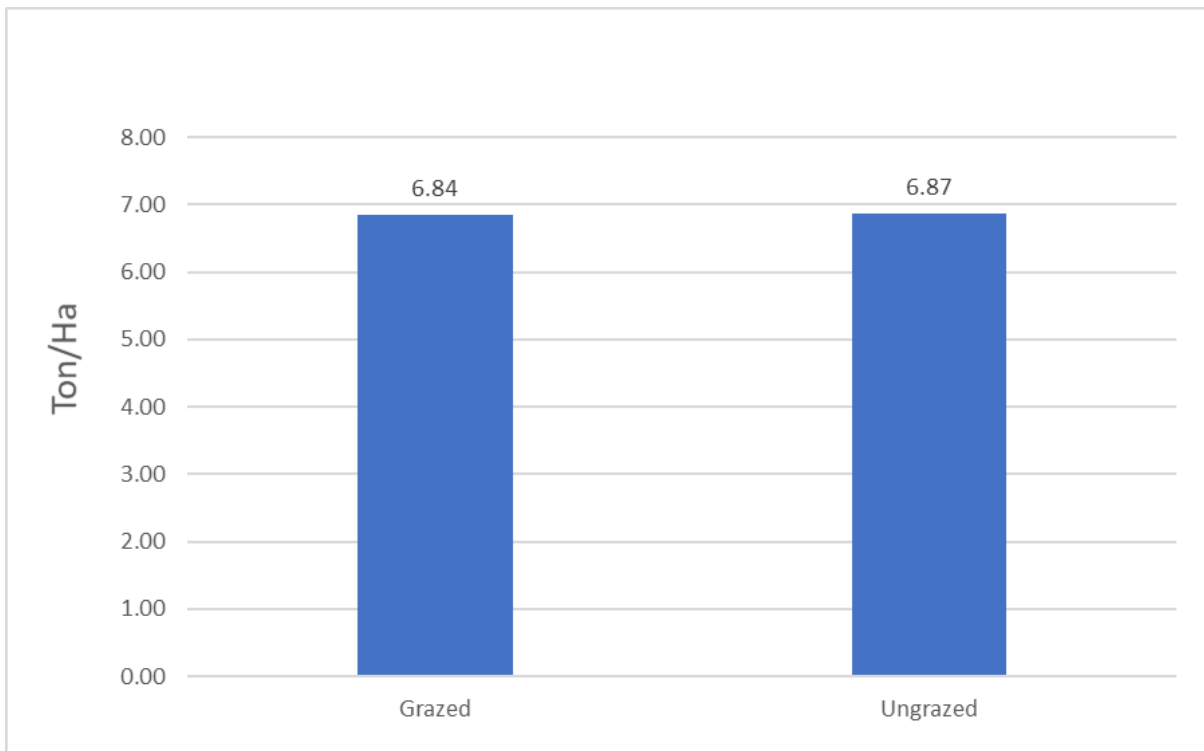


Chart 2: Final yields on wheat at West Muradup PDS site (P=NSD)

Key Findings:

- The grazing period was in line with best practice for this demonstration, June/July.
- The stocking rate of 20 DSE was below normal practice however this allowed for a longer grazing period of 32 days.
- The grazed wheat yielded 0.40% lower than the ungrazed wheat.
- The grazing of the hoggets allowed pasture to establish and increase FOO during the tight winter period of late June into July
- Early sowing is important to allow crop to establish itself to allow grazing in late June or early to mid July.

Crop – Bannister Oats

Sowing Date – 27 May 2021

Growth stage – GS.22 – GS.24

Sheep – 136 Ewes and Lambs (1.3 DSE)

Area – 4.5 Ha

Stocking rate – 40 DSE / Ha

Entry – 12 August 2021

Exit - 21 August 2021

Controls

- Grazing cages erected in crop to measure ungrazed yield
- Pasture control paddock in place

Results

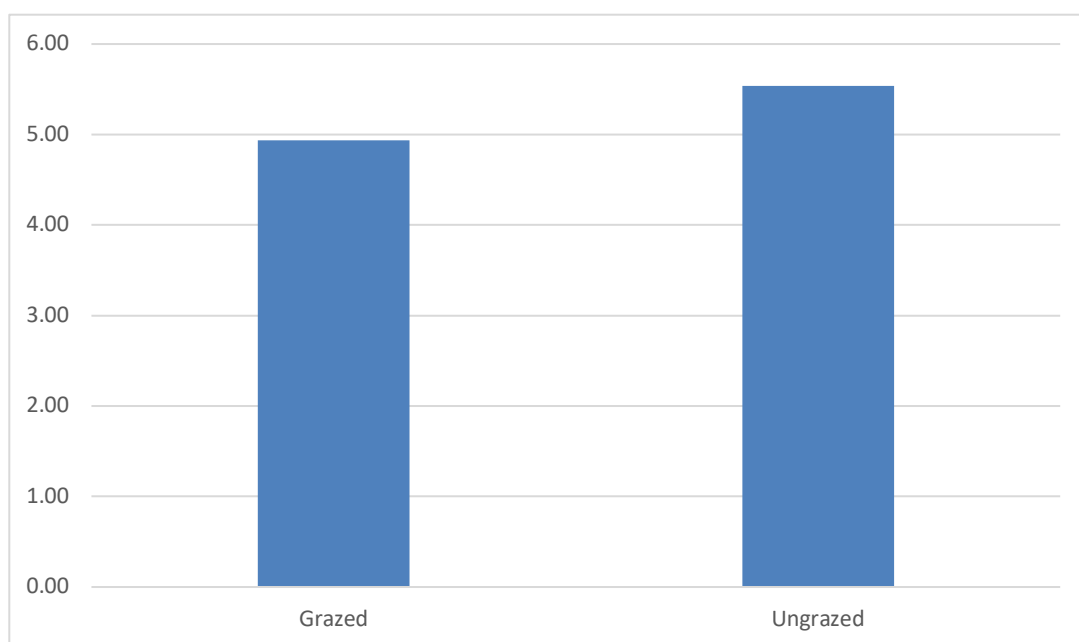


Chart 2: Final yields on Bannister oats at Bridgetown PDS site ($P=NSD$)

| | Oats - grazed | Oats - ungrazed | Pasture |
|--------------------------|---------------|-----------------|---------|
| Pre-grazing - 12 August | 0.564 | 0.564 | 0.728 |
| Post Grazing - 21 August | 0.54 | 0.677 | 0.748 |

Table 1: NDVI readings of oats and pasture

Pasture Growth:

12 August: Feed of Offer – 1,500 kg DM/Ha

21 August: Feed on Offer – 2,000 kg DM/Ha



Photo 2: Immediately post grazing with grazing cage removed

Key Findings:

- Yield reduction due to grazing of 10.85% or 4.94 MT/Ha vs 5.54 MT/Ha
- Grazing period was later than preferred which impacted the final yield difference
- By bringing the grazing period forward into July it is expected the impact on yield would be reduced to below 5%.
- Considerable improvement in Food on Offer in the pasture paddock was grown with an increase of 500 kg DM/Ha recorded over the grazing window.
- Sheep grazing were ewes and lambs and therefore no weight gain data was recorded
- Through crop grazing an increased area of crop can be planted within the total mixed farming operation while still maintaining the same livestock numbers.

PDS 3 – Jeremy Kowald

Crop – Moby Barley and Serradella

Sowing date – 27th May 2021

Growth stage – GS.23 – GS.25

Sheep – 68 ewe hoggets (1 DSE)

Area – 1.61 Ha

Stocking rate – 42 DSE /Ha

Entry – 13 August 2020

Exit – 20 August 2020

Controls

- Paddock divided into 2 with one half grazed and the other ungrazed
- Pasture control paddock in place

Results

Ewe Hogget weight gain:

48.9 kg average entry weight

50.0 kg average exit weight

0.157 kg average daily weight gain

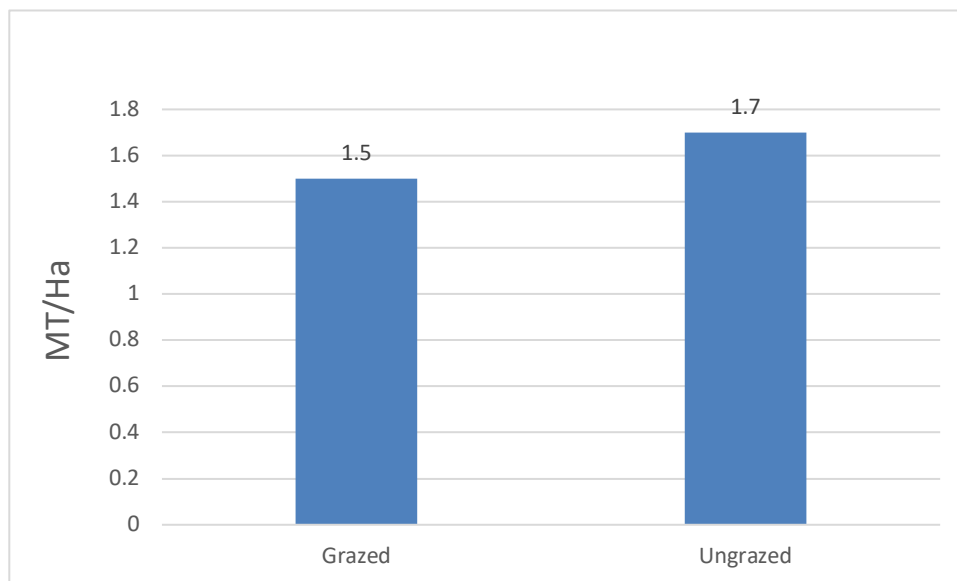


Chart 3: Final yields on Moby Barley at West Katanning PDS site ($P=NSD$)

Key Findings:

- Yield reduction due to grazing of 11.77% or 1.5 MT/Ha vs 1.7 MT/Ha
- Grazing period was later than preferred which impacted the final yield difference
- By bringing the grazing period forward into July it is expected the impact on yield would be reduced to below 5%.
- Ewe hogget achieved good weight gain of 157 grams/day while grazing the barley crop
- Later sown crops can result in later grazing period which will increase impact on final yield



Photo 3: Ewe hoggets pre grazing ready to weigh

- **Communication and extension activities**

Activities have included:

- Extension through social media posts, example below
- Outcomes and results written up in Southern Dirt annual results report and delivered to growers plus on website

- PDS site included in Southern Dirt Annual Field Day/field walk.
- In depth article completed in September and promoted on website.



Photo 2: Field walk held on the 10th of October to promote the benefits of Dual Purpose crops



Screen shot 1: Example of social media promotion around the dual purpose crop

- **Producer surveys**

Pre project core and observer surveys were completed in 2019 and submitted with milestone 2 report. Post surveys to be completed at the end of the project

- **Adoption / impact**

Adoption and impact of the project will be evaluated at the conclusion of the project via the post project survey's.

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What is to be done in the next six months?

In the next 6 months the following activities are to be completed:

- Go / No Go decision teleconference to be held with MLA, National PDS co-ordinator and Southern Dirt representatives
- 1 x in depth article completed
- Meeting with core group members prior to implementation of trial work
- 3 sites selected and grazed during the correct period and at preferred stocking rates
- All data recorded around the grazing period and uploaded to the Master Schedule.
- Interim report to be submitted August 2022.

Please advise if there are any changes to method, sequence of activities or budget. Are there any risks or issues that need to be addressed?

No all activities are unchanged from the projects current methodology

Is your monitoring, evaluation, and reporting (MER) plan being fully implemented? Please provide a summary of the key findings below. (Please submit a copy of you MER plan with a column on the right-hand side which lists progress against each item.)

The monitoring, evaluation and reporting plan has been fully implemented as per the MER report which has been attached alongside the submission of this milestone report.

The key findings from year 2 are:

- Daily weight gain in ewe hoggets of 157 grams/day
- Pasture Food on Offer average growth of 55 kilograms/day or 500 kilograms/Ha in 9 days
- Crop yield penalty of between 0.4% to 11.77%
- Early sowing allowing earlier grazing window (June/July) resulted in minimal yield impact of 0.4%
- Later grazing, mid August, resulted in higher yield impact of 11.77% and 10.85%

The data to be generated this year is on target to be inline with the projects outcomes around demonstrating the benefits of integrating dual purpose crops into mixed farming systems which include minimal yield penalty from grazing, improved weight gain on lambs or hoggets, increased farm carrying capacity, reduced supplementary feeding and a more detailed benefit costs analysis.

Include 100+ words and hyperlinks to any articles summarising the progress of your PDS towards its objectives for inclusion on the MLA website and sharing with SALRC, NABRC & WALRC or other communication activities. Please include who is managing the project and where it is operating.

Southern Dirt in collaboration with MLA have been operating the project, 'Increasing profit with dual purpose crops', since 2020. The aim of this project is to demonstrate the benefits of dual purpose crops in a mixed farming enterprise. The project is being conducted through a series of nine producer demonstration sites covering the Great Southern region of Western Australia through to 2023.

In 2021 the three crops grazed were Barley, Wheat and Oats. The key findings were the crop yield penalty ranged between 0.4% to 11.77% and this variation was driven by the grazing window. Two of the sites

were grazed in mid-August and had yield penalties of 11.77% and 10.85% compared to the demonstration with the sheep removed in mid-July had a yield penalty of 0.4%.

At the Katanning site the daily weight gain of ewe hoggets grazing Moby Barley was 157 g/day and at the Bridgetown site the pasture being rested from grazing improved from 1500 kilograms/Ha to 2000 kilograms/Ha over the 9 day grazing period. Finally grazing DSE's/Ha across the three demonstrations were from 20, 40 and 42 DSE/Ha. The lower DSE of 20 allowed for a much longer grazing period of 32 days compared to the other two site which could only grazed for 7 and 9 days at the higher stocking rate.