

# Producer Demonstration Site

## Annual / Progress report

**Date:** 7<sup>th</sup> March 2023

**Group name:** Southern Dirt

**PDS project code:** L.PDS. 1904 Increasing Profits with Dual Purpose Crops

**Milestone #:** 8

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<p><b>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?</b></p> <p>Yes</p>		
<p><b>Number of core producers engaged currently</b> (please make a note if this number has changed)</p> <p>5 core producers</p>	<p><b>Number of observer producers involved to date</b> (if known)</p> <p>16 observer producers</p>	<p><b>Number of unique demonstration sites</b></p> <p>7 producer demonstration sites</p>
<p><b>Location of sites in year 1</b></p> <p>1 site completed</p> <ul style="list-style-type: none"> <li>- Kojonup District High School</li> </ul> <p>2 sites deferred due to seasonal condition</p> <ul style="list-style-type: none"> <li>- Geoff Kowald</li> <li>- Alisdair Staniforth-Smith</li> </ul>	<p><b>Location of sites in year 2</b></p> <p>3 sites completed</p> <ul style="list-style-type: none"> <li>- Jeremy Kowald</li> <li>- Rodney Hester</li> <li>- Ben Webb</li> </ul>	<p><b>Location of sites in year 3</b></p> <p>3 sites completed</p> <ul style="list-style-type: none"> <li>- Ben Webb</li> <li>- Rodney Hester</li> <li>- Kent Stone</li> </ul>
<p><b>Achievement criteria for this milestone as per your contract</b> (please copy criteria from your contract).</p> <p>The milestone requirements are as follows:</p> <ul style="list-style-type: none"> <li>• MER report</li> <li>• Case Study 2 written and approved by MLA and published in Southern Dirt newsletter/website</li> <li>• 3 x on farm event delivered field walks/workshop</li> <li>• Data results collated and analysed</li> </ul>		<p><b>Report your progress against each criteria for the period</b></p> <p>1) MER report: Completed and submitted 7<sup>th</sup> March 2023</p> <p>2) Case study 2: Being finalised and will be submitted for approval to the MLA ahead of publishing</p> <p>3) 3 x on farm events delivered (field walks/workshops): Southern Dirt field walk was held on the 21<sup>st</sup> of February.</p> <p>4) Data results collated and analysed: The data from year 3 of the project has been collated and analysed. The results are presented in</p>

<ul style="list-style-type: none"> <li>• Communications delivered as per plan</li> </ul>	<p>the outputs and findings sections of this progress report.</p> <p>5) Update against communications plan: Up to date against communication plan social media posts, in depth article near completion and annual report released through Southern Dirt annual trials book.</p>
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<p><b>Summarise any key outputs and findings from your projects e.g.:</b></p> <ul style="list-style-type: none"> <li>• <b>Demonstration site results for year 3 of project</b></li> </ul> <p><b><u>PDS 1 – Ben Webb</u></b></p> <p>Crop – Long season wheat (Accroc) Growth stage – GS.21 – GS.23 Sheep – 54 ewes + 66 lambs Area – 11 Ha Stocking rate – 8.3 DSE Entry – 1 July 2022 Exit – 26 August 2022</p> <p><b><u>Controls</u></b></p> <ul style="list-style-type: none"> <li>- Grazing cages erected in crop to measure ungrazed yield</li> </ul> <p><b><u>Agronomy</u></b></p> <p>Accroc wheat sown @ 60 kg/Ha on 10<sup>th</sup> June 2022 Sown with 110 kg/Ha MAPS Mn In season fertilizer 240 kg/Ha urea In season weed control, 2 broadleaf sprays and 1 fungicide</p> <p><b><u>Results</u></b></p>
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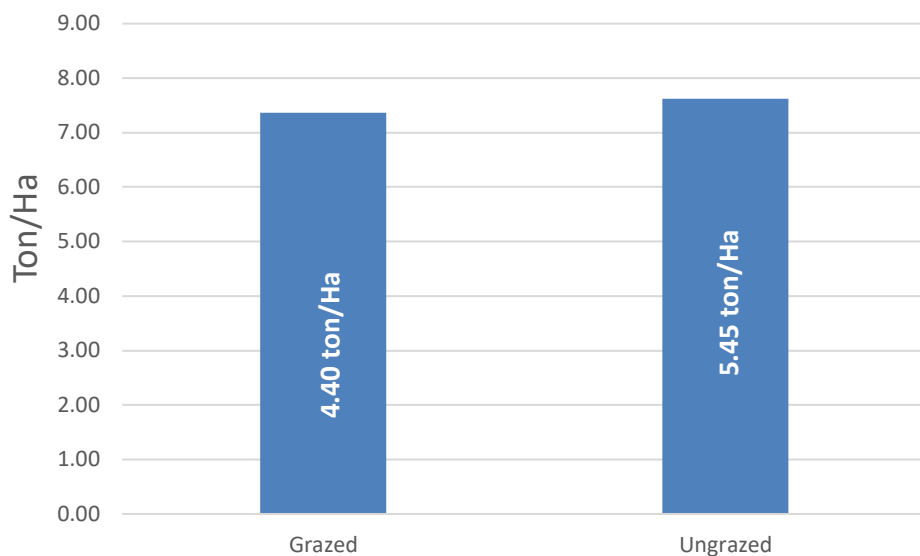


Chart 1: Final yields on Accroc Wheat at West Muradup PDS site (P=NSD)

#### Key Findings:

- Yield reduction due to grazing of 23.8% or 4.40 Mt/Ha vs 5.45 MT/Ha
- Grazing period was later than ideal due to poor winter seasonal conditions and the grazing needed to be extended
- Ideally the grazing period would have finished by the end of July.
- The demonstration shows producers the cost of extending crop grazing into late August
- Sheep grazing were ewes and lambs and therefore no weight gain data was recorded
- The good seasonal spring conditions allowed the grazed wheat to recover well and still deliver a good yield.
- Late sowing with the intention for grazing could have a better result with a higher seeding rate than 60 kg/Ha.

#### PDS 2 – Rodney Hester

Crop – Bannister Oats

Growth stage – GS.22 – GS.24

Sheep – 20 cows and calves (13 DSE)

Area – 7.0 Ha

Stocking rate – 40 DSE / Ha

Entry – 18<sup>th</sup> July 2022

Exit – 28<sup>th</sup> July 2022

#### Controls

- Paddock divided into 2 with one half grazed and the other ungrazed

#### Results

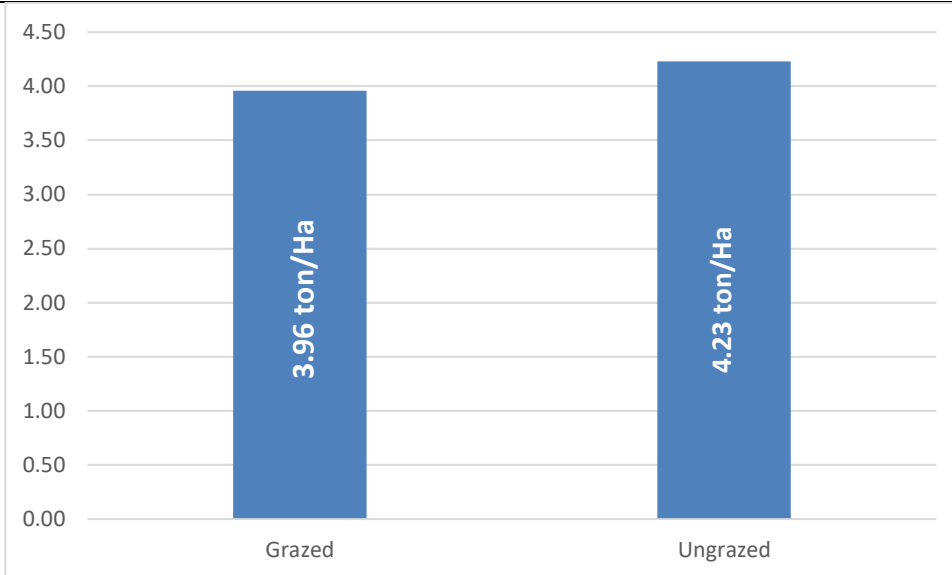


Chart 2: Final yields on Bannister oats at Bridgetown PDS site (P=NSD)



Photo 2: Immediately post grazing with removal of cow and calf units

**Key Findings:**

- Yield reduction due to grazing of 6.38% or 3.96 Mt/Ha vs 4.23 MT/Ha
- Grazing period was just in preferred time window.
- Ideally the grazing period would have commenced earlier, mid June, but crop development didn't allow for an earlier entry.
- Due to the short grazing period the grazing was uneven. The yield was taken from the grazed area
- Cattle grazing were cows and calves 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 – Kent Stone**

Crop – Long Season Wheat (Accroc)

Sown – 12 April 2022

Growth stage – GS.22

Sheep – 300 scanned multiple lambing ewes (1.5 DSE)

Area – 35 Ha

Stocking rate – 12.8 DSE /Ha

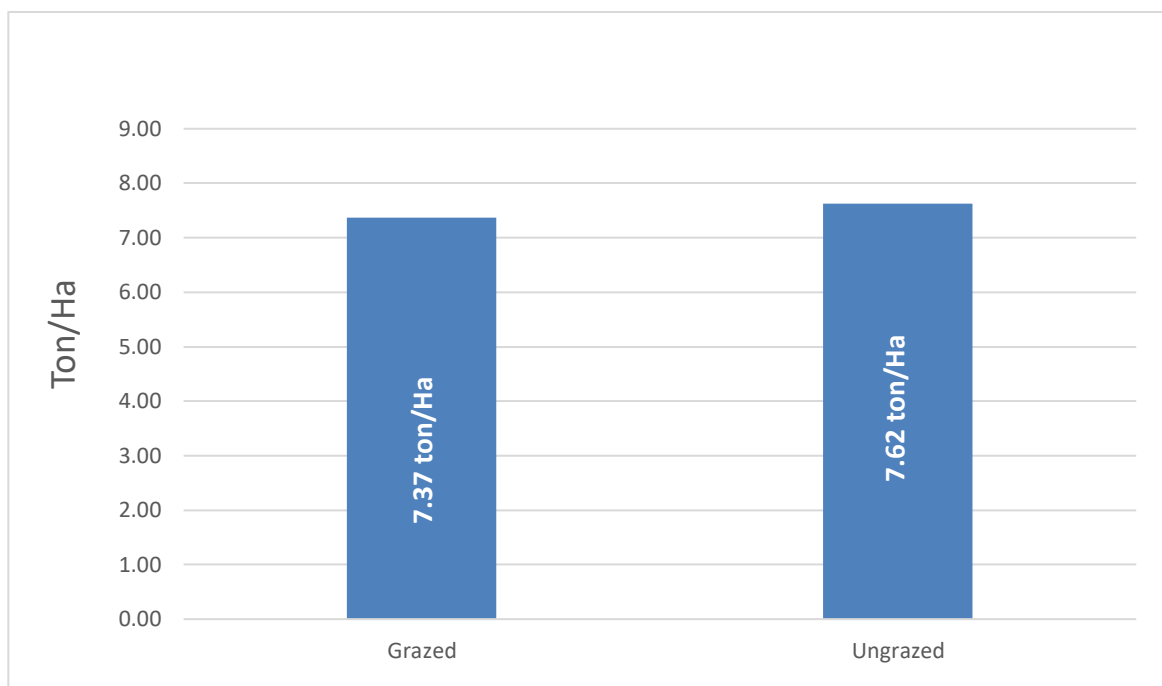
Entry – 15<sup>th</sup> May 2022

Exit – 8 August 2022

### **Controls**

- Paddock divided into 2 with one half grazed and the other ungrazed

### **Results**



*Chart 1: Final yields on Accroc Wheat at Muradup PDS site (P=NSD)*

### **Key Findings:**

- Yield reduction due to grazing of 3.4% or 7.37 Mt/Ha vs 7.62 MT/Ha
- Grazing period was slightly later than preferred window (end of July) due to poor winter seasonal conditions and the grazing needed to be extended.
- Ideally the grazing period would have finished by the end of July.
- The early sowing and good seasonal spring conditions allowed the grazed wheat to recover nearly match the ungrazed wheat.
- The demonstration highlights to producers the benefit of early sowing and how this delivers flexibility through the season.
- Sheep grazing were ewes and lambs and therefore no weight gain data was recorded

- **Communication and extension activities**

- Social media posts to extend the project
- 2022 annual report, with results included in the 2022 Southern Dirt annual trial booklet
- Field walks to be conducted in summer 2023 to promote the benefits and adoption of crop grazing in mixed farming operations
- In depth article to be released through Southern Dirt web site and MLA

- **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.

### **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
- 2 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 2023.

### **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 which was amended in 2021 and detailed in Milestone progress report 7

### **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 finding from year 1**

- the benefits in lamb growth rates grazing oats compared to pastures which generated a benefit of \$0.27/cents/head/day plus the additional benefit of lambs reaching sale weight earlier, reducing the grazing pressure on the property.

#### **The key findings from year 2**

- Daily weight gain in ewe hogget's grazing wheat of 157 grams/day

- Pasture Food on Offer average growth of 55 kilograms/day or 500 kilograms/Ha in 9 days
- Crop yield penalty from grazing of between 0.4% to 11.77%
- Early sowing allowing an 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%
- Key finding was to remove animals from grazing crops during the last two weeks of July.

**The key findings from year 3**

- Bringing the grazing period forward from early August to late July reduced the yield loss from grazing from 10.85 to 6.38% in Bridgetown
- A late sowing and extended grazing at West Muradup into late August resulted in a yield cost from grazing of 23.8%.
- Low seeding rate, 60kg/Ha, when sown late and combined with extended grazing can add to yield loss compared to ungrazed crops. Higher seeding rates should be used with later sown crops.
- Early sown crops allow greater flexibility with grazing through the season and potentially allows extended grazing into first week of August as the plant has sufficiently developed.

**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 WA in collaboration with the MLA have been operating the project, 'Increasing profit with dual purpose crops', since the start of 2020. The aim of this project is to demonstrate the benefits of dual purpose crops in a mixed farming enterprise, and improve the synergy between cropping and livestock production and profitability through farm management practices.

The project is being conducted through a series of nine producer demonstration sites covering the Great Southern region of Western Australia. One site was completed in 2020, three sites in 2021 and three sites in 2022. The final two sites are due to be run in 2023 which will complete the project.

In 2020 lambs grazed a Williams oat crop for 14 days and gained 314.95 g/hd/day compared to the lambs that grazed a pasture paddock for 13 days and gained 215.84 g/hd/day. Generating a daily benefit in weight gain benefit of \$0.27/head/day. In 2020 ewe hogget's grazing Accroc wheat gained 157 grams/day. Crops yield penalties from grazing were between 0.4% to 11.77%. Earlier sowing and establishment allowed as earlier grazing window (June/July) which resulted in the minimal yield impact of 0.4%. The key finding from 2021 was to remove the grazing animals during the last two weeks of July.

The key findings from the 2022 sites were:

- Bringing the grazing period forward from early August to late July reduced the yield loss from grazing from 10.85 to 6.38% in Bridgetown
- A late sowing and extended grazing at West Muradup into late August resulted in a yield cost from grazing of 23.8%.
- Low seeding rate, 60kg/Ha, when sown late and combined with extended grazing can increase the yield loss compared to ungrazed crops. Higher seeding rates should be used with later sown crops.
- Early sown crops allow greater flexibility with grazing through the season and potentially allows extended grazing into first week of August as the plant has sufficiently developed.
- The Muradup site was sown on the 12<sup>th</sup> of April and grazed through to the 8<sup>th</sup> of August and only incurred a 3.4% cost in yield.