

Sponsors

The board of the Hart Field-Site Group would like to acknowledge the generous financial contribution of our sponsors.

Principal Sponsor



Sponsors























































Contents

HART INFORMATION Research supporters and collaborators4 Acknowledgements......6 Hart guiding principles and management team7 The Hart site and commercial crop report......10 Interpretation of statistical data12 **CROP VARIETIES** Comparison of barley varieties22 **CROP AGRONOMY WEED MANAGEMENT AND HERBICIDES** Legume and oilseed herbicide tolerance43 Investigating glufosinate herbicide for annual ryegrass control53 Managing resistant and susceptible ryegrass with glufosinate; the effect of temperature, humidity and photoperiod63



PEST & DISEASE MANAGEMENT

Novel management strategies for the control of fusarium root rot in lentil	83
SOIL & CROP NUTRITION	
Impacts of applied nitrogen on grain yield and quality in wheat and barley Integrating spatial data and long-term strategies for improved phosphorus fertiliser management Management options for dry saline soils on Upper Yorke Peninsula: results from three seasons	98
CROPPING SYSTEMS AND MANAGEMENT	
Evaluating the importance of sowing rate, depth and time of sowing on canola emergence	115
A summary of recent experiments on soil moisture, germination and crop	122



Front cover photo by Miffy Purslow.

Thanks also Sandy Kimber, Rebekah Allen, Kaidy Morgan, Miffy Purslow & Gabrielle Hall for other photos used within this publication.



Research supporters















Collaborators













































Trengove Consulting Agrilink Agricultural Consultants

Barry Mudge Consulting



Hart 2025 calendar

HART FIELD DAY

September 16

Our main Field Day attracts over 500 visitors from all over South Australia and further afield.

Every half hour a block of eight sessions are run simultaneously with highly regarded specialists speaking at each trial. comprehensive take-home Field Day Guide is included in your entry fee.

The Hart Field Day is our main event of the year.



Hart AGM October 2025

Getting The Crop In

March 12

8am - 12:30pm

At this annual seminar, researchers andindustry quest speakers from across the county cover a wide range of topics, all relevant to broadacre cropping.

Winter Walk

July 15

9am - 12pm

An informal guided walk around the trial site; your first opportunity to inspect the site post-seeding with quest speakers presenting their observations on current trials.

They are on hand to answer questions and will also share their knowledge on all the latest cropping systems and agronomic updates.

Spring Twilight Walk

October 21

5pm followed by BBQ

Another informal opportunity to inspect the trial site, this time just prior to harvest. Key researchers and industry representatives again present in the field and answer your questions.

This event is followed by drinks and a BBQ in the shed - a great opportunity to network.



Acknowledgements

The success of our research program could not be achieved without the contribution of a large number of people and organisations.

Supporters

We thank the numerous growers and consultants who provide various contributions, from knowledge and experience through to land and equipment for conducting trials.

Craig Davis Chris Preston Matt Dare Roger Kimber Rob & Glenn Wandel Peter Baker Andre Sabeeney Trevor Day Matt Williams Stuart Sherriff Scott Weckert Richard Verner **Andrew Cootes** Anthony Pfitzner James Henderson Kelvin Tiller Glen Wilkinson Wade Hogg Justin, Bradley & Dennis Rob & Dennis Dall Braydon Keech **Daniel Neill** Wundke Luke Dohnt James Venning Simon Honner Mick Faulkner

We would also like to thank various organisations for the provision of seed and/or products that were trialed in the 2024 research program.

ADAMA Agriculture Victoria -Agfert **FMC** lentil breeding program Barenbrug **SARDI Clare** LongReach Plant Breeders Pioneer Seeds Advanta Seeds Seednet Syngenta Global Grain Genetics Agspec **BASF**

Agriculture Victoria -Nufarm Plant Science Consulting field pea breeding program Pacific Seeds **Bayer Crop Science** Corteva Agriscience InterGrain Australian Grain

SARDI Agronomy & **Technologies** S & W Seeds **RAGT**

Crop Sciences Nuseed

AGF seeds

Thank you also to the following people who volunteer on Hart's Research Committee.

Rob Dall Simon McCormack Jana Dixon Matt Dare Rob Price Scott Carmichael Ash Hentschke Stuart Sherriff Ben McInerney Simon Honner Scott Weckert Nick Longmire

Simon McCormack Glen Wilkinson



Our guiding principles

OUR PURPOSE

To deliver value to growers and make agriculture better (in productivity, sustainability & community)

OUR VISION

To be Australia's premier cropping field site, providing independent information and enhancing the skills of the agricultural industry

OUR VALUES

Independence

in order to provide unbiased results

Relevance

to issues facing farmers

Integrity

in all dealings

Credibility

through providing reliable, quality information

Professionalism

in the management of the site and presentation of trials

Value for money

low cost of information to farmers



Hart management

Hart board

Sandy Kimber (Clare) Executive officer

Dale Callary (Clare)......Treasurer

Ryan Wood (Clare) Sponsorship

Simon Honner (Blyth)......Board member James Venning (Barunga Gap)......Board member Simonne Read (Adelaide) Board member

Hart staff

Rebekah Allen......Research & extension mgr Sandy Kimber...... Executive officer

Kaidy Morgan.....Technical officer Robyn Howard Finance officer

Myfanwy Purslow...Research intern Simone Lawry Admin support

Gabrielle Hall...... Media

Site Management

Hart Field-Site Group:

Rebekah Allen, Kaidy Morgan, Myfanwy Purslow

SARDI, Agronomy Clare:

Patrick Thomas, John Nairn, Sarah Day, Navneet Aggarwal, Dylan Bruce, Trevor Lock, Caitlin Parsons and Hugh Drum.

Contact us in person...

Chairman

Glen 'Chip' Wilkinson

0427 662 207

Research & Extension Manager Rebekah Allen 0428 782 470

Executive Officer Sandy Kimber 0427 423 154 admin@hartfieldsite.org.au

Or find out more about us...









Hart Field Day

September 16, 2025



www.hartfieldsite.org.au

The Hart site

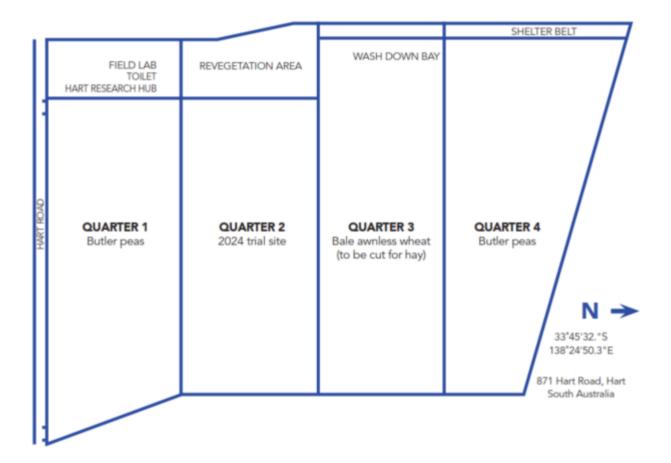
The Hart field site consists of 40 hectares owned by the group.

It is managed as four quarters (shown below) that are rotated each year.

In 2024, our trials were held in Quarter 2.

Quarters 1, 3 and 4 make up our commercial crop:

- Q1 & Q4 were sown to Butler peas
- Q3 to Bale awnless wheat (to be cut for hay in preparation for the following year's trial site).



Facilities at the Hart site also include:

- Field lab for workspace and sample processing
- Hart Research Hub for workshops, events & meetings
- Storage shed
- Washdown bay
- Toilet
- Fully fenced re-vegetation area



Hart commercial crop report

Matt Dare

Commercial Crop Manager, Hart Field-Site Group

QUARTERS 1 & 4 - Butler peas

Quarters 1 & 4, a total of 18 ha, were sown to Butler peas in at a rate of 100 kg/ha with 100 kg/ha of MAP fertiliser on May 24, followed by rolling to aid harvesting.

A pre-sowing herbicide mix of 1.2 L/ha trifluralin, 50 ml/ha diflufenican and 100 g/ha metribuzin was applied prior to sowing and incorporated by a knife point and press wheel sowing system.

A post-sowing pre-emergent herbicide mix of 1.0 L/ha propyzamide, 50 g/ha metribuzin and 350 ml/ha chlorpryifos was also applied.

Clethodim was applied for grass weed control in early July.

A frost event on the morning of the Hart Field Day (September 17), in conjunction with severe moisture stress from lack of rainfall, ultimately resulted in the peas yielding well below average.

The pea crop was harvested on October 28, with a final yield of 5.8 tonnes (0.322 t/ha).

A summer weed spray (1.8 L Crucial + 500 ml Starane Advanced) was applied on November 14.

QUARTER 3 - Bale awnless wheat

Bale awnless wheat was sown dry on May 4 in Quarter 3 at 100 kg/ha with 80 kg/ha DAP fertiliser with a plan to cut for hay in September or October in preparation for the 2025 trial site.

Bale wheat was spread with 100 kg/ha of N-Shield Dual (blue urea), in late August.

The wheat was slashed on September 17 rather than cutting for hay as planned, as the crop was dying from moisture stress due to lack of rain.

A summer weed spray (2.0 L Glyphosate540 + 400 ml Fluroxypyr400) was applied on December 18.

THANK YOU

We would like to thank the following people and organisations for supporting Hart's 2024 commercial crop:

- Matt Williams sowing, rolling, spraying, harvest (Q1, 3 & 4) and slashing (Q3)
- Verner Seeds Bale seed (Q3)
- Agfert N-Shield Dual (Q3)







MOWHAWK



SOAKER



A high yielding well adapted "quick Winter" wheat

A unique "quick Winter" APW quality wheat that is suited to early-break scenarios in main season areas and higher production areas with a robust disease package.

Available through selected LongReach Seed Associates

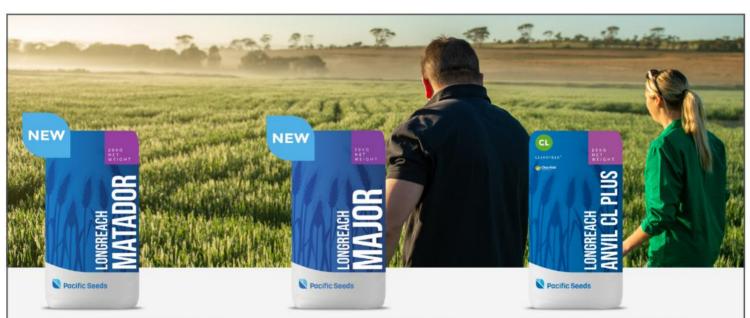
A new approach to IMI systems management in the wheat phase

Mid maturity Scepter type wheat with the addition of one IMI tolerance gene to shield the crop from IMI residual carry over. Slightly higher yield than Scepter showing with similar disease profile.

Available exclusively from AG Schilling & Co. Cunliffe South Australia

For more information visit the LongReach website

www.longreachpb.com.au



LONGREACH MATADOR

Mid Spring high yielding Scepter type with improved disease resistance

Mid maturity AH wheat with market leading yield that has consistently outyielded Vixen and Scepter with improved powdery mildew (MS) and stripe rust resistance (MS) over Scepter.

LONGREACH MAJOR

Mid slow maturity for starting the seeding program

Mid slow maturity AH quality, well suited to the seeding window prior to Scepter (used widely by Trojan and Rockstar growers).

LONGREACH ANVIL CL

Quick Clearfield® tolerant AH wheat

A quick AH quality, two-gene IMI-tolerant variety with high yield for fast finishing situations.

Matador, Major and Anvil are available throughout the Pacific Seeds Associate network.

pacificseeds.com.au





Cereal varieties for 2025

WHEAT







BARLEY











OATS









Get in touch with your local Territory Manager for seed enquiries



We've been building farm sheds designed for the agricultural industry for decades. Family owned and operated, we are committed to quality and service.

Our design considerations include...



CUSTOMISED LAYOUTS

- In-house design team
- · Storage options to suit your operation
- · Modular frame system for extensions
- · Build flexibility within tight spaces



MACHINERY STORAGE

- · Drive-through design options
- Turning circle integrated with orientation
- Extra wide openings for ease of access
- · Heavy-duty sliding doors for protection



GRAIN STORAGE

- Product segregation
- Loading and unloading design
- · Roof pitch for optimal storage volumes
- · Load bearing concrete walls



FERTILISER SEPARATION

- · Length of time of storage
- Understanding ventilation requirements
- Storage options for multiple commodities
- · Partition walls for separation













Take Control of Your Nitrogen





NO MORE GUESSWORK!

Don't let failed forecasts dictate your nitrogen efficiency!

N-Shield Volat gives you the confidence and control you need to optimise your nitrogen applications.

Up to 28 Days of Protection

Minimise nitrogen loss through volatilisation, ensuring your investment stays where it belongs, in your crop.

More Flexibility, Less Indecision

No more stressing over unpredictable weather. Apply with confidence, knowing your nitrogen is protected.

Maximise Efficiency

Spread when it suits your operation, not when the forecast tells you to.

Take the uncertainty out of your top dress program and gain peace of mind with **N-Shield Volat.**

Secure your nitrogen, secure your yield!



nshield.com.au