HART
premier cropping field site

ROCKY RIVER AG

CASE IH AGRICULTURE

flexi-coil
SETTING THE STANDARD

CNH INDUSTRIAL CAPITAL

agfert
fertilizers

2023

HART TRIAL RESULTS

Sponsors

The board of the Hart Field-Site Group would like to acknowledge the significant financial contribution of our committed sponsors, supporters, collaborators and partners.

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BASF We create chemistry

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BAYER

Research supporters

We receive funding from the Australian Government's Future Drought Fund

Collaborators

Hart 2024 calendar

HART FIELD DAY

September 17

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. Our 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 2024

Getting The Crop In

March 13

8am – 1:00pm

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

Winter Walk

July 16

9am – 12pm

An informal guided walk around the trial site; your first opportunity to inspect the site post-seeding with guest 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 15

5pm followed by BBQ

Another informal opportunity to inspect the trial site, this time just prior to harvest, again with industry researchers & representatives presenting in the field.

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.

Pete McEwin
Simon Jaeschke
Shane Reinke
McPharlin family
Paul Jarret
Adam Rowley
Craig Davis
Roger Kimber
Andre Sabeeney
Hill River Pastoral
Larn McMurray
Stuart Sherriff
Andrew Cootes
Stuart Nagel
Kelvin Tiller
Rob & Dennis Dall
Daniel Neill
James Venning
Matt Dare
Sarah Noack
Rob & Glenn Wandel
Trevor Day
Daniel Paterson
Scott Weckert
Colin Edmondson
Anthony Pfitzner
Glen Wilkinson
Justin, Bradley & Dennis Wundke
Michael Jaeschke
Simon Honner
Ben & Kevin Pratt
Chris Preston
Luke Stringer

We would also like to thank various organisations for the provision of seed and/or products that were trialed in the 2023 research program.

ADAMA
FMC
SARDI Clare
Advanta Seeds
Global Grain Genetics
SARDI - vetch breeding program
Agriculture Victoria – field pea breeding program
InterGrain
SARDI Agronomy & Crop Sciences
Agriculture Victoria – lentil breeding program
LongReach Plant Breeders
Seednet
Agspec
Nufarm
Seed Force
Australian Grain Technologies
Nuseed
Sumitomo
Barenbrug
Pioneer Seeds
Syngenta
BASF
Plant Science Consulting
University of Adelaide - bean breeding program
Bayer Crop Science
Pulse Breeding Australia
UPL
Corteva Agriscience
S & W Seeds

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

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

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

Andre Sabeeney (Clare) ..... Chairman
Glen Wilkinson (Snowtown) ..... Vice-chairman, sponsorship
Sandy Kimber (Clare) ..... Executive officer
Deb Purvis (Wallaroo) ..... Finance officer
Matt Dare (Marola) ..... Commercial crop manager, sponsorship
Ryan Wood (Clare) ..... Sponsorship
Scott Weckert (Blyth) ..... Sponsorship, community engagement
Simon Honner (Blyth) ..... Board member
Rob Dall (Kybunga) ..... Board member
Stuart Sherriff (Clare) ..... Board member
Josh Reichstein (Blackwood) ..... Board member
James Venning (Barunga Gap) ..... Board member

Hart staff

Rebekah Allen ..... Research & extension manager
Kaidy Morgan ..... Regional intern
Sandy Kimber ..... Executive officer
Simone Lawry ..... Admin support
Gabrielle Hall ..... Media
Hannah Pridham ..... Finance support

Site Management

Hart Field-Site Group:
Rebekah Allen, Kaidy Morgan, Laura Purvis

SARDI, Agronomy Clare:
Patrick Thomas, John Nairn, Sarah Day, Navneet Aggarwal, Penny Roberts, Dylan Bruce, Amber Spronk, Jacob Nickolai and Trevor Lock

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Or find out more about us…

The Hart site

The Hart field site (40 ha owned by the group) is managed as four quarters that are rotated each year.

In 2023, Quarter 1 hosted our trials.

Quarter 2 was sown with Kingbale oats and was cut for hay to tidy the site in preparation for 2024 trials.

Quarters 3 and 4 were also sown with oaten hay as part of our commercial crop rotation and weed management program.

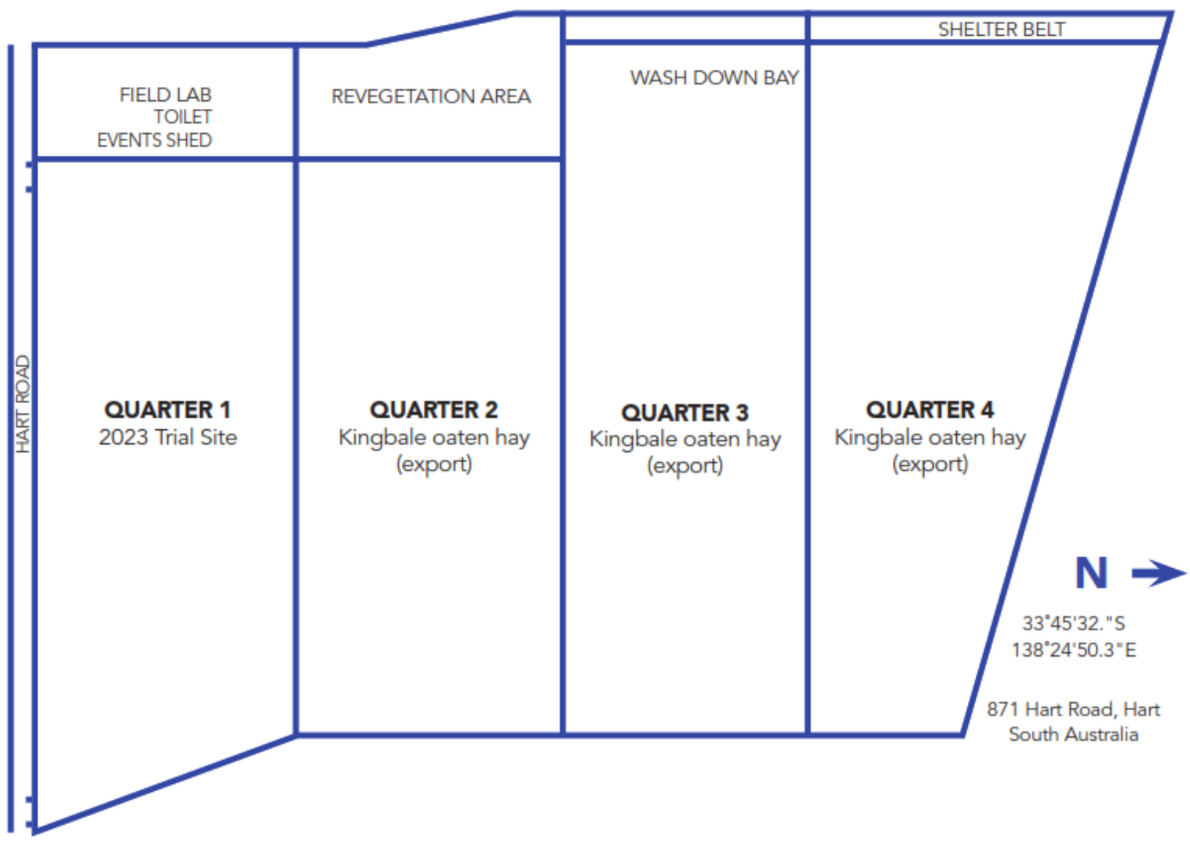

Photo. Students from St Joseph's School, Clare, visited the Hart field site on a 'Cultivating Futures' tour in October 2023.

Hart commercial crop report

Matt Dare

Commercial Crop Manager, Hart Field-Site Group

The Hart commercial crop was sown to export hay (Kingbale oats) in Quarters 2, 3 & 4, a total of 28 ha, at a rate of 110 kg/ha with 100 kg/ha of 24:16 fertiliser on June 1.

Thank you to the McPharlin family for kindly donating the seed.

A knockdown herbicide mix of 1.6 L/ha Glyphosate 540 and 30 g/ha Terrad'or was applied prior to sowing.

Moisture at sowing was good following rainfall the previous week totalling 23 mm.

Thanks to Michael Jaeschke and Rob Wandel who prickle chained and rolled the oats post-sowing.

Also, thanks to Pete McEwin for donating and spreading 50 kg/ha of urea on June 22.

This crop was sprayed for broadleaf weeds on July 20 with 25 g/ha Paradigm, 350 ml/ha MCPA LVE570, 80 ml/ha Dicamba500 and 0.5% uptake oil/ha applied.

Cutting took place on October 9 and was later than ideal due to some small weather events and availability of contacting.

Raking and baling was completed 11 days later on October 20.

Hart's 2023 commercial crop was contracted and sold to Balco Australia.

Thanks to Maitland Foods for their contracting services from cutting through to delivering the hay to Balco.

With final deliveries pending at the time of writing, hay yield is estimated as ~4.0t/ha and was graded as G4A.

Photo: Hart's commercial crop 2023.

The 2023 season at Hart

Kaidy Morgan and Rebekah Allen

Hart Field-Site Group

The Mid-North region had a dry start leading into the 2023 growing season. Below average rainfall across summer months (Figure 1) meant that stored soil moisture was low at Hart and surrounding regions (Figure 2).

Significant rainfall towards the end of April saw the start of seeding for many growers with 20 mm of rainfall received over a four-day period. Seeding at Hart commenced with canola and long coleoptile wheat trials sown on April 21.

Follow up rainfall was marginal until late May, in some cases resulting in delayed and patchy emergence of many early sown crops. As a result, most of Hart's trial program was dry sown or delayed.

Above average rainfall (68 mm) was received in June causing logistical difficulty towards the end of sowing, however all trials were sown by June 20. By this time, Hart had received 100 mm of growing season rainfall (GSR), and early sown crops were developing rapidly.

During the 2023 growing season we were met with below average rainfall for all months other than June. Despite an early break, a dry finish to the season reduced the yield potential of late sown crops and harvest commenced early across the region. Harvest commenced on October 23 with Barley and concluded with our off-site trials on November 22.

Hart received 236 mm of growing season rainfall (GSR average 300 mm), equivalent to a Decile 4 (40th percentile). Annual rainfall totalled 355 mm, below Hart's 400 mm average.

Across the site, observations showed that the early, dry sown crops outperformed later sown crops despite establishing on marginal moisture. An extended season length and access to growing season rainfall early in the year played a critical role in yield potential, with later sown crops affected by limited rainfall in the second half of the growing season.

Photo: The Hart field site just prior to the Hart Field Day (September, 2023).

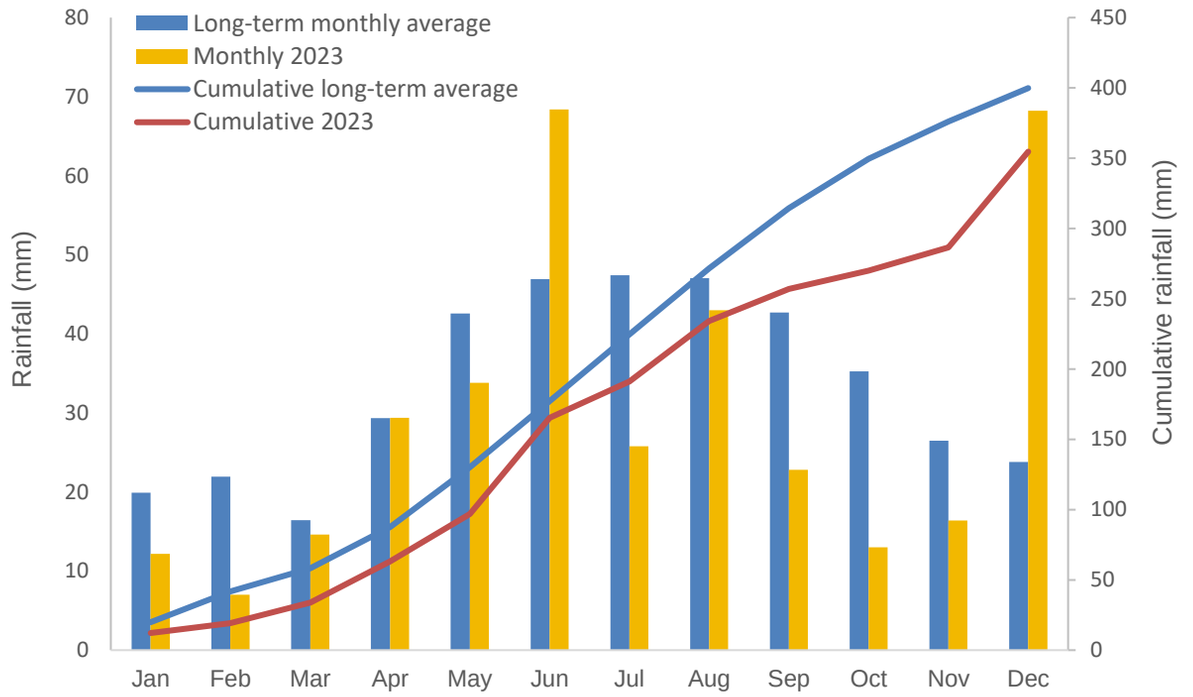

Figure 1. Hart rainfall graph for the 2023 season and long-term average. Lines are displayed to present cumulative rainfall for long-term average (blue) and 2023 (orange).

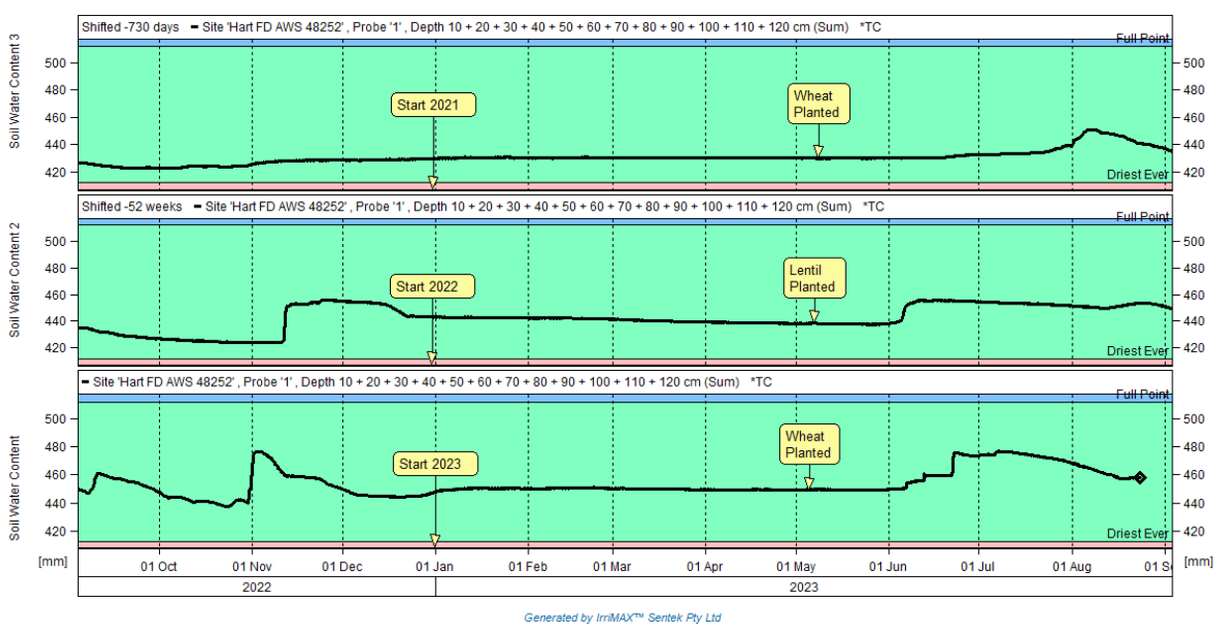

Figure 2. Soil moisture probe summed comparison (80 cm) for 2021 (top), 2022 (middle) and 2023 (bottom) at the Hart field site. Hart soil moisture data is free to view thanks to Agbyte. https://www.hartfieldsite.org.au/pages/live-weather/soil-moisture-probe.php

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Interpretation of statistical data

The results of replicated trials are presented as the average (mean) for each of the replicates within a treatment.

Authors generally use ANOVA, in which the means of more than one treatment are compared to each other. The least significant difference (LSD P≤0.05), seen at the bottom of data tables gives an indication of the treatment difference that could occur by chance. NS (not significant) indicates that there is no difference between the treatments. The size of the LSD can be used to compare treatment results and values must differ by more than this value for the difference to be statistically significant.

So, it is more likely (95%) that the differences are due to the treatments, and not by chance (5%). Of course, we may be prepared to accept a lower probability (80%) or chance that two treatments are different, and so in some cases a non-significant result may still be useful.

Interpretation of replicated results: an example

Here we use an example of a replicated wheat variety trial containing yield and grain quality data (Table 1). Statistically significant differences were found between varieties for both grain yield and protein. The LSD for grain yield of 0.40 means there must be more than 0.40 t/ha difference between yields before that variety's performance is significantly different to another. In this example Trojan is significantly different to all other varieties as it is the only variety followed by a superscript (^{a}). Scout, Mace and Cosmick are not significantly different from each other and are all followed by a superscript (^{b}) as they all yielded within 0.4 t/ha of each other.

Similarly, for grain protein a varieties performance was significant from another if there was more than 0.9% difference in protein. In the example, Arrow contained a higher protein level compared to all other varieties which were not different to one another.

Where there are no significant differences between treatments, NS (not significant) will be displayed as seen in the screenings column (Table 1).

Table 1. Wheat variety grain yield, protein and screenings from a hypothetical example to illustrate interpretation of LSD.

Variety	**Grain yield (t/ha)**	**Protein (%)**	**Screenings (%)**
Arrow	3.50^{c}	10.3^{a}	0.2
Cosmick	3.98^{b}	8.4^{b}	1.0
Mace	3.75^{bc}	9.1^{b}	0.5
Scout	4.05^{b}	8.9^{b}	0.9
Trojan	4.77^{a}	8.4^{b}	0.4
LSD (P≤0.05)	**0.40**	**0.9**	**NS**

Disclaimer

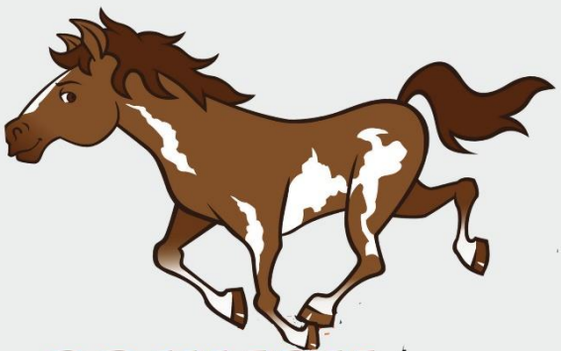
While all due care has been taken in compiling the information within this manual the Hart Field-Site Group Inc or researchers involved take no liability resulting from the interpretation or use of these results.

We do not endorse or recommend the products of any manufacturers referred to. Other products may perform as well or better than those specifically referred to.

Any research with un-registered products and rates in the manual does not constitute a recommendation for that particular use by the researchers or the Hart Field-Site Group Inc.

INTERGRAIN

NEW VARIETIES FOR 2024



BRUMBY

APW WHEAT

DOZER CL PLUS

APW WHEAT

GENIE

AH WHEAT

WALLABY

OATEN HAY

NEO CL

POTENTIAL MALT BARLEY

For more information, contact your local Territory Manager

Rehn Freebairn | 0447 711 905

rfreebairn@intergrain.com

intergrain.com

Get in touch with your local Seedclub Member or reseller to secure seed via the QR code

LongReach PLANT BREEDERS

NEW LongReach Soaker

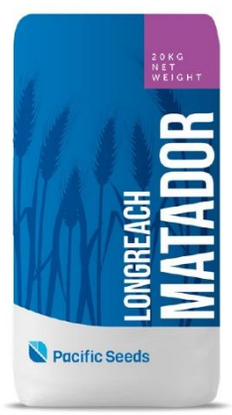
LongReach SOAKER

IMI RESIDUAL

Breaking the IMI cycle in the wheat phase

- Soaker is a NEW approach to IMI systems management in the wheat phase with APW Quality
- Soaker is a "Scepter type" with the bonus of one IMI tolerance gene to shield the crop from IMI residual carryover after IMI break crops
- Soaker has shown comparable yield to Scepter with similar mid maturity, disease, and growth habit
- Soaker is available exclusively through **AG Schilling & Co**

NEW LongReach Matador

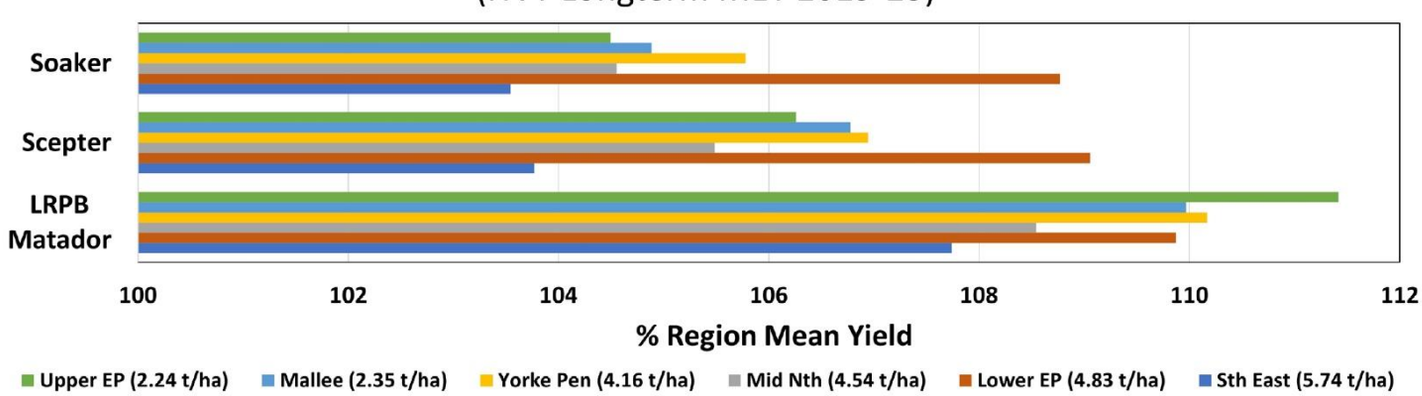


Mid Spring high yielding Scepter type with improved disease resistance.

- Mid Maturity AH wheat that has consistently out yielded Vixen and Scepter
- Broad environmental adaption like its Scepter parent
- Improved Powdery Mildew (MS) and Stripe rust resistance (MS) over Scepter adding some minor genes for both diseases
- Matador is available through the **Pacific Seeds Seed Associate Network**

Predicted yield of Soaker and LRPB Matador compared to Scepter

(NVT Longterm MET 2019-23)

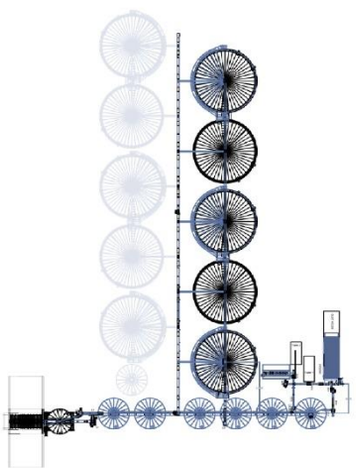


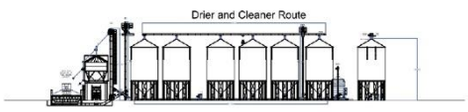
For more information catch up with the LongReach team or visit the LongReach Website

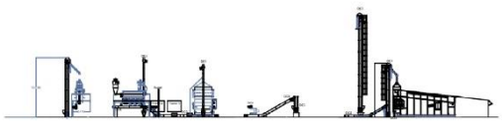
www.longreachpb.com.au

DRYING CHILLING HANDLING CLEANING

ALVAN BLANCH GRAIN DRYERS
SKANDIA ELEVATORS







DOUBLE FLOW DRYING SYSTEM

CONVEYOR DRYING SYSTEM

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Chris Swain - 0457 336 433

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