

THE OAT GRAIN QUALITY CONSORTIUM FACT SHEET



GRDC
GRAINS RESEARCH
& DEVELOPMENT
CORPORATION

NATIONAL
JUNE 2024

Research and innovation to deliver high-quality, value-added oat products for Australian and international markets

About the Oat Grain Quality Consortium

The Oat Grain Quality Consortium (OGQC) is a collaborative Grains Research and Development Corporation (GRDC) investment aimed at addressing the crucial need for innovation in oat quality research, informing oat quality classification and market positioning.

This research initiative will see more than \$12 million invested in oats over five years – \$5.75 million from GRDC complemented by \$6.7 million from research and industry partners.

Led by InterGrain and the South Australian Research and Development Institute (SARDI, the research division of the Department of Primary Industries and Regions SA), the consortium will bring together a diverse group of organisations spanning the research, production, processing, and food and beverage manufacturing sectors.

The opportunity

With global demand rising for nutritious, oat-based foods and beverages, the consortium aims to capitalise on this growing market opportunity through targeted research and innovation.

Achieving this growth will require Australia to reliably supply oats of consistent quality. Our national oat industry must provide target markets with high-quality information on the flavour and aroma characteristics, and



Photo: AEGIC

Oat grains and flour can be used to create diverse food products, including noodles and 'rice'.

beta-glucan and oil content of Australian oat varieties. This information, along with cost-effective methods to measure quality characteristics, will also support improved oat classifications through the development of grades related to specific uses.

Further, Australian oat researchers and breeders require accurate and efficient methods to quantify quality traits and knowledge of how to influence such traits.



“The global demand for diverse and nutritious oat-based products is on the rise and there is a clear opportunity for Australian agriculture to lead the way in quality and sustainability – this is why GRDC has initiated and invested in this consortium on behalf of Australian growers.”

NIGEL HART,
GRDC MANAGING DIRECTOR

Vision and mission

The OGQC aims to transform Australian oat quality and production research to benefit the entire oat supply chain.

Its mission is threefold:

- **Innovation:** To spearhead pre-breeding research, understanding the molecular and biochemical foundations of key oat qualities.
- **Collaboration:** Working together with oat millers and food and beverage processors to set new industry standards, inform oat quality classification and enhance market positioning.
- **Transformation:** To supply breeders with traits matching market demands, facilitating the development of new, high-value oat varieties.

Research focus

The OGQC is designed to capitalise on international demand in oats for food and beverage applications via targeted pre-breeding through three programs of activity, each supporting Australian oat pre-breeding research to understand key oat quality traits.

PROGRAM 1

Accelerating the development of an accurate and cost-effective high-throughput measurement method for key oat quality characteristics

- **Lead research partner:** InterGrain
- **Collaborating research partner:** WA State Government Processed Oat Partnership program (co-funder)

Aim: Develop an accurate, rapid and cost-effective method for measuring oat quality characteristics such as beta-glucan, protein and oil content to accelerate the breeding process and ensure faster access to superior oat varieties.

Program 1 contact:
Dr Dini Ganesalingam, InterGrain:
dganesalingam@intergrain.com

PROGRAM 2

Discovery of desirable aroma, flavour and texture compounds for oat food/beverage application

- **Lead research partner:** InterGrain
- **Collaborating research partners:** Curtin University, Murdoch University, Edith Cowan University, Agriculture Victoria, Shaanxi Normal University
- **Industry partners:** Unigrain, Wide Open Agriculture, Fancy Plants, Oatly, Sanitarium, Uncle Tobys, Blue Lake Milling, Quaker, Noumi, Seamild and the Australian Export Grains Innovation Centre (AEGIC)

Aim: Differentiate Australian oats in the market by providing breeders with actionable information on the genetic variation of 'taste' compounds, and support breeding efforts to enhance the sensory appeal of Australian oats for existing and new oat products.

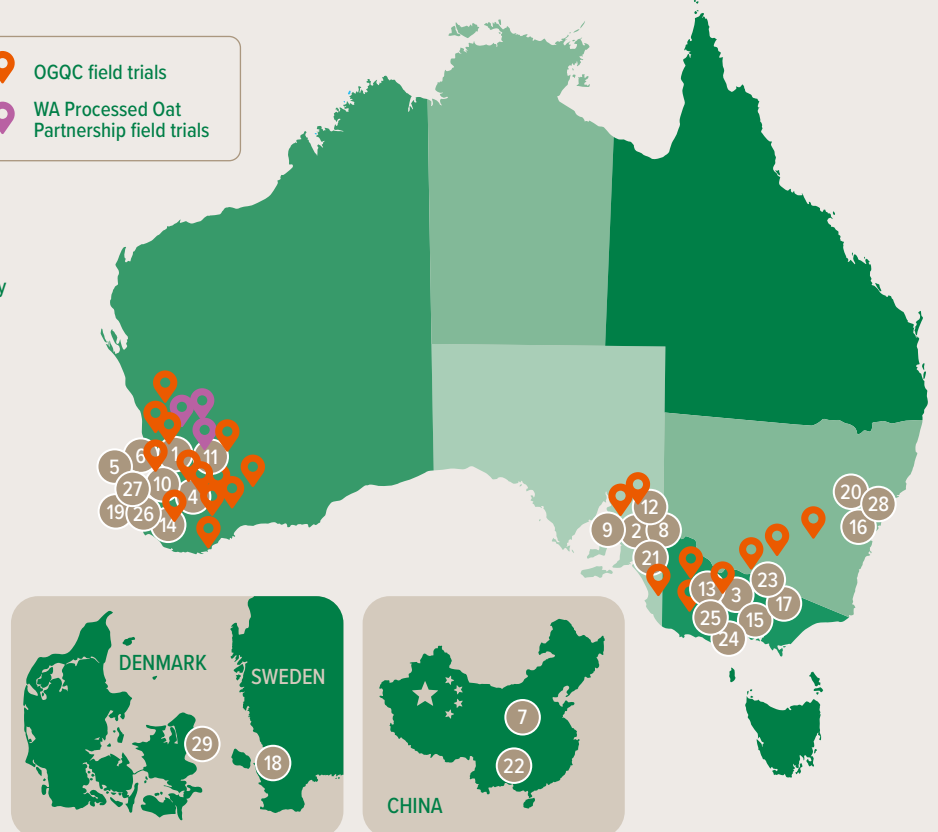
Program 2 contact:
Dr Haelee Fenton, InterGrain:
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Figure 1: OGQC partner and supporting organisations

1. InterGrain
2. SARDI
3. Agriculture Victoria
4. Curtin University
5. Edith Cowan University
6. Murdoch University
7. Shaanxi Normal University
8. The University of Adelaide
9. University of South Australia
10. WA Processed Oat Partnership (Department of Primary Industries and Regional Development & Grain Industry Association of Western Australia)
11. AEGIC
12. Blue Lake Milling (Bordertown)
13. Blue Lake Milling (Dimboola)
14. Blue Lake Milling (Forrestfield)
15. Fancy Plants
16. Noumi (headquarters)
17. Noumi (Shepparton)
18. Oatly
19. Quaker Oats (PepsiCo)
20. Sanitarium Health Food Company
21. Alternative Dairy Co (Sanitarium)
22. Seamild
23. Uncle Tobys (Nestlé)
24. Unigrain (Geelong)
25. Unigrain (Smeaton Mill)
26. Unigrain (Wagin)
27. Wide Open Agriculture
28. Grains Australia
29. Traitomic

OGQC field trials

WA Processed Oat Partnership field trials



PROGRAM 3



Modulating grain oil content of oats to improve suitability for milling and food/beverage ingredient development

- **Lead research partner:** South Australian Research and Development Institute (SARDI)
- **Collaborating research partners:** The University of Adelaide, University of South Australia, InterGrain
- **Industry partners:** Unigrain, AEGIC

Aim: Establish industry-relevant oil thresholds for specific milling applications, understand the genetics and biochemical pathways determining oat grain oil content, and deliver to breeding programs novel low-oil oat lines with improved suitability for milling.

To accelerate the discovery and development of new oat varieties with improved quality traits, OGQC researchers will access novel oat genetic resources through the new GRDC-Traitomic partnership (TRA2309-001SAX) and oat pangenome project (UMU2003-002RTX).

Program 3 contact:

Dr Janine Croser, SARDI:
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Photo: Evan Collis/InterGrain



The OGQC addresses the need for innovation in oat quality research to capitalise on growing domestic and global market opportunities.



Photo: Evan Collis/GRDC

Oat noodles are an example of the grain's versatility.

Industry and consumer benefits

The OGQC will benefit the entire Australian oat supply chain by providing breeders with new traits that align with market demands, improving efficiency and reducing costs for processors, and expanding the range of oat-based products that manufacturers can offer consumers globally.

Consortium researchers will work with:

- oat millers and food and beverage processors to develop thresholds for traits such as flavour and aroma, groat oil, beta-glucan and protein; and
- breeding programs to identify and provide germplasm and molecular tools to rapidly develop new oat varieties suited to high-value end-use market requirements.

The research will provide benefits to:

- **Breeders** – access to new traits that align with market demands;
- **Growers** – new oat varieties with improved quality traits aligned with market demands;
- **Processors** – increased efficiency and reduced costs through optimised milling processes;
- **Food and beverage manufacturers** – expanded possibilities for diverse and innovative oat products; and
- **Consumers** – greater choice and availability of high-quality, nutritious oat-based foods and beverages.



Photo: Evan Collis/GRDC

An innovative twist on a popular drink, these oat pearls make for a healthier bubble tea.

Industry impacts

Food and beverage manufacturing

- Support an expanded range of oat-based products that manufacturers can offer consumers globally
- Trait selection intelligence for aroma and flavour compounds in oat foods and beverages

Market positioning

- Australian oats as the go-to-product for consumers, both domestically and overseas, which will have significant flow-on benefits for our growers
- Enhanced shelf life and milling efficiency to open new avenues for Australian oats in global markets

Oat classification

- Quantify oat quality traits for industry classification
- Inform decisions by Grains Australia's Oat Council and its new oat variety classification framework

The consortium will lay the foundations of a prosperous future for the Australian oat industry and contribute to increased choice and quality for consumers.

PROGRAM 1



PROGRAM 2



PROGRAM 3



Government of South Australia
Department of Primary Industries and Regions

SARDI



THE UNIVERSITY of ADELAIDE



University of South Australia



SUPPORTING ORGANISATIONS



GRDC CODES

Program 1: IGP2305-002RTX

Program 2: IGP2401-001RTX

Program 3: UOA2401-006RTX

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