



Australian Export Grains Innovation Centre

# Opportunities and risks for the **Australian oats industry**



Department of  
Primary Industries and  
Regional Development



AEGIC is an initiative of the Western Australian State Government  
and Grains Research & Development Corporation

OARP21010EN

Sean Cowman, Barry Cox,  
Matt Yamamoto and Ross Kingwell

All contents copyright @AEGIC. All rights reserved.

The related bodies corporate, directors and employees of AEGIC accept no liability whatsoever for any injury, loss, claim, damage, incidental or consequential damage, arising out of, or in any way connected with, the use of any information, or any error, omission or defect in the information contained in this publication. Whilst every care has been taken in the preparation of this publication AEGIC accepts no liability for the accuracy of the information supplied.

# Contents

<b>Recommendations</b>	<b>5</b>
<b>Key messages</b>	<b>6</b>
Current or emerging structural opportunities.....	6
Points of differentiation and opportunities for Australia .....	7
Risks.....	8
<b>Introduction</b>	<b>9</b>
<b>Australian oat production and use</b>	<b>9</b>
<b>Australian oat exports</b>	<b>11</b>
<b>Global production, supply and trade</b>	<b>13</b>
Production.....	13
Global oat trade.....	15
<b>Australia's major oat competitors</b>	<b>18</b>
Canada.....	18
EU and United Kingdom .....	21
Finland.....	22
Sweden.....	23
Russia.....	23
<b>Major oat importers</b>	<b>24</b>
China.....	24
Japan.....	28
Mexico.....	33
India.....	34
South Africa.....	36
Malaysia.....	37
Chile .....	38
Vietnam.....	38
<b>Conclusion</b>	<b>39</b>
<b>Acknowledgements</b>	<b>40</b>
<b>References</b>	<b>40</b>
<b>Appendix 1 — GRDC and DPIRD oat projects</b>	<b>41</b>
GRDC oat projects.....	41
DPIRD and AEGIC oat investment.....	41

# List of figures

Figure 1. Annual area sown to oats and oat production in Australia 1989–2020.....	9
Figure 2. Australian oat production by State: 1989–2020.....	9
Figure 3. Australian raw oat exports and milled oats.....	10
Figure 4. Australian raw oat exports and milled oat exports.....	11
Figure 5. Australian oat products exports by State.....	11
Figure 6. Australian oat product exports 2015–20.....	12
Figure 7. Western Australian oat exports 2016–20.....	12
Figure 8. World oat production by country 2015–20.....	13
Figure 9. World oat supplies, major producers 1987–2020.....	14
Figure 10. EU/UK oat supplies, major countries.....	14
Figure 11. North American oat area 1987–2020.....	14
Figure 12. Major oat exporters 2016–20.....	15
Figure 13. Oat mill usage – global oat markets.....	17
Figure 14. Canada oat production.....	18
Figure 15. Canada harvested oat area.....	18
Figure 16. Canada raw oat exports by market 2015–20.....	19
Figure 17. Canada raw oat exports by market, excluding USA.....	20
Figure 18. Canada oat product exports by market 2015–20.....	20
Figure 19. EU28 oat production 2012–21.....	21
Figure 20. Finland oat export volume 2015–20.....	22
Figure 21. Sweden and Finland’s share of EU oat exports.....	23
Figure 22. Aggregated ranking scores for quality parameters across interviewed Chinese oat food companies.....	25
Figure 23. Japan oat imports by country, excluding seed for sowing, 2012–19.....	28
Figure 24. Japan’s oat imports from Canada and Australia and their relative price.....	28
Figure 25. Horse numbers in Japan 1993–2018.....	29
Figure 26. Japan’s imports of oats for sowing 2012–19.....	29
Figure 27. Japan’s imports of rolled or flaked oats, by country, 2010–19.....	30
Figure 28. Granola on Japanese supermarket shelves.....	30
Figure 29. Japan’s CIF prices of rolled oats by exporting country.....	31
Figure 30. Rice ball made by mixing edamame (green soybeans) and cream cheese with rice and Super Barley (BARLEYmax™).....	32
Figure 31. Major exporters of oats to Mexico by country and volume 2015–19.....	33
Figure 32. Oat vending machine.....	35
Figure 33. Jungle Oats.....	36
Figure 34. Assorted packs of Captain Oats in the supermarket.....	37
Figure 35. Chile oat and oat product exports.....	38



# List of tables

Table 1.	World oat trade 2016–21 .....	16
Table 2.	Canada raw oat and oat product exports .....	19
Table 3.	China oat imports .....	24
Table 4.	Major exporters of oats to India, by country, 2015–19 .....	34
Table 5.	Major exporters of oats to Malaysia, by country, 2016–20 .....	37









# Recommendations

## AEGIC recommends the Australian oat industry considers the following:

- **Consolidate and grow raw oat and/or processed product opportunities** in the fast-growing Chinese market, as well as emerging markets such as India.
- **Explore additional raw oat and processed product opportunities** that allow geographic diversification and reduce concentration risk.
- **Broaden oat use and uptake through greater incorporation into lunch and dinner meals.** Increased engagement with markets to understand consumer trends, quality requirements and future needs will be advantageous. AEGIC is exploring these opportunities and will provide additional information when available.
- **Actively monitor tomorrow's oat market drivers** i.e. future rather than lagging indicators of oat opportunities. This may include monitoring capital investment in oats production and processing, and environmental and social governance (ESG) indicators in grains more generally.
- **Support the supply of and demand for Australian oats** that continue to be valued by its traditional and emerging markets through regular market visits and technical programs that provide beneficial two way and detailed information exchange.
- **Expand oats' role as a break crop component in Australian farming systems.** Oats and oaten hay regularly feature in Australian cropping systems and are supported by stable domestic markets for food and/or feed. Australian producers have the capacity to quickly expand production, depending upon export demand and price.
- **Closely watch competitors' activities.** Competitor breeding initiatives (such as increasing beta-glucan), production shifts, changes to oat market access (such as possible changes to Canadian oat access to China), and broader developments – including changing food manufacturer and consumer needs – should be monitored.
- **Support new Australian oat breeding and innovation initiatives.** The shift from public to private breeding will provide new momentum to the Australian oat industry. Several organisations (e.g. Department of Primary Industry and Regional Development in WA) are currently examining new project opportunities for increased oat innovation and increasing the value-adding of oats within Australia. Organisations including the Grains Research and Development Corporation (GRDC) and the Department of Primary Industries and Regional Development (DPIRD) have funded and are continuing to fund a wide range of oat research extending across the value chain (see examples in Appendix 1). The Australian oat industry should embrace, support, and accelerate these activities to ensure that Australia leads in these areas.

# Key messages

## Current or emerging structural opportunities

- Globally, Australia enjoys a strong reputation as a high-quality oat producer. Australian raw and processed oat exports are destined to continue to grow, with Western Australia remaining the dominant export state.
- The volume of oats required for milling within Australia is continuing to grow, providing a solid foundation for Australian oat growers.
- Once the world leader, North American oat production has declined gradually over the past 20 years with the introduction of GM soy and corn. The USA now imports most of its oats for food from Canada and this trend is expected to continue.
- Oat production in the USA and Canada will continue to be constrained by strong demand for competing rotational crops, especially soybean and canola that will service renewable fuel demands in the short to medium term.
- Australia is regularly the 2nd largest oat exporter, about 10–15 per cent of world trade, behind the behemoth of Canada (75 per cent of world oat trade). Canada exports over 80 per cent of its raw oats and oat products (combined) solely to the USA. Australia, on the other hand, regularly markets oats to multiple destinations providing greater market diversification.
- Australia is also the 4th largest global ‘oat product’ (processed oats) exporter with a market share of around 10 per cent. There appears to be substantial opportunities to grow this volume.
- China is the fastest growing oat market globally and rising in significance to Australian oat exports.
- Globally, human consumption of oats is increasing, albeit modestly in most cases. The rate of consumption growth varies substantially between countries. The global oats market is expected to grow annually by up to 5 per cent over the next five years. Recent gains in oat food and beverage consumption are expected to continue.
- The increased global prevalence of “diseases of affluence”, such as diabetes, obesity and heart disease, means that consumers may seek the health benefits of oats as an alternative to staple foods such as rice. The ability to include oats in traditional foods (e.g. noodles) or to mimic traditional foods (e.g. oaten rice) suggests ongoing value-adding opportunities for oats.



## Points of differentiation and opportunities for Australia

### Differences

- Australia's relatively dry growing conditions provide Australian oats with attractive points of differentiation. Lower moisture levels mean that Australian oats can be stored for longer with better resistance to fungal diseases and mycotoxins.
- Drier oats confer freight and moisture advantages. The low moisture content and advantage awarded by this, compared to Canadian oats, is not always reflected in the purchase price. Additional research may establish if higher value market options exist for Australia's low moisture oats.
- Australia has a strong track record in food safety within its domestic and export grains. Canadian oat farmers, Australia's largest competitor, use glyphosate for weed control and to desiccate (dry) oat crops prior to harvest. This practice is increasingly concerning to domestic and export customers with some refusing to accept crops sprayed in this manner. In 2020, Kellogg's announced it will phase out using wheat and oats treated with glyphosate as a drying agent in its supply chains by 2025.
- Australia can extract leverage from its effective funding of oat breeding. Australia's unique end point royalty system incentivises breeders to ensure the oat varieties they breed are attractive to oat producers and consumers alike. Already oat varieties developed by the Australian oat breeder South Australian Research and Development Institute (SARDI) have increased levels of beta-glucan (Leth, 2016). The entry of the commercial breeding company InterGrain into oat breeding will broaden the genetic base of Australian oats and widen their geographic applicability and appeal. By contrast, the Canadian oat breeding system is likely to remain publicly funded and therefore subject to the vagaries of that funding.

### Opportunities

- China overwhelmingly is the largest growth opportunity for Australian raw oats and oat products as its middle-class consumers seek more diverse diets to complement staple traditional foods such as rice and wheat noodles. Australia is already the main supplier of oats to this market and is working to better understand Chinese oat needs.
- Improved positioning of Australian oats could lead to increased sales, particularly in China, but also many other current or future health-conscious markets, including Japan and other Asian markets. The entry and growing interest in Australia's BARLEYmax™ — a high fibre wholegrain barley with high levels of resistant starch — within Japan is evidence of the opportunity and growing interest from consumers in maintaining good health.
- The Australian grains industry, particularly the Western Australian State Government, is continuing to examine opportunities to support oat growers, including examining the potential for undertaking value-adding activities locally.
- Australian oat millers may benefit from the increased use of oat flour by the global oat milk/beverage industry that improves the margins for oat millers. Previously, oat flour and fines were difficult to sell, often going into the feed sector at heavily discounted values.
- Whilst South East Asian (SEA) countries generally have low or negligible oat consumption, governments and peak health bodies are actively pursuing opportunities to improve dietary health. Due to the compelling health narrative associated with oat consumption, opportunities for Australia to leverage the benefits of oats to stimulate demand may increasingly arise.
- Australia's oat competitors will soon gain improved access to SEA markets through tariff reductions. Before this occurs, Australia should commence oat development and communication programs within selected target markets in SEA.

## Risks

### Competition

- The greatest challenge to growing Australian oat exports for the human consumption market remains the continued competitor threat posed by Canada and Scandinavia. While Russia is also a large producer of oats, their focus will remain on their domestic market. Also, the 'darker' colour of Russian oats makes them less desirable for food usage in most importing countries.

### Market access

- Australia is dependent on a small number of oat export markets. It is important that Australia reduces this market concentration risk by developing new markets.
- Canada cannot currently access the Chinese market due to an absence of specific phytosanitary protocols for raw oats. How long will this advantage remain is uncertain.

### Tariffs

- The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), a trade agreement between Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam, has provisions that allows Canadian oats to have the same access as Australian oats. The CPTPP will remove a 20 per cent tariff on Canadian processed oats to Vietnam during 2021 and remove a 12 per cent tariff on Canadian processed oats exported to Japan during 2024. These tariff changes expand the geographical reach of Canadian oats.

### Production

- Global oat production, at around 23mmt annually, is small compared to major cereal crops such as wheat (775mmt produced per annum). Likewise, the volume of oats traded globally annually is only around 2.5–2.6mmt. As oats for food have few direct substitutes, and because there are few suppliers of export oats for food, any marked changes to oat supply can greatly affect global oat markets to a much greater extent than occurs with other major crops. As a result, the dynamic between buyers and sellers can flip easily in response to seasonal conditions. The resultant price volatility reduces the commercial attractiveness of growing oats for many farmers and complicates establishing long term trading arrangements that need to be underpinned by a consistency of supply and pricing. Amid such price volatility, cultivating and protecting long-term, non-transactional relationships with customers is especially challenging.

### Consumer demands

- Manufacturers are responding to consumer demands regarding environmental sensitivities, such as greenhouse gas targets and the use of glyphosate, and ethical business practices. Australia needs to stay abreast of these trends to ensure continued market access.

### Environment

- Climate volatility and adverse seasonal conditions leave Australian oats vulnerable to reputational loss of supply security to export markets.



# Introduction

*In this report we present oat market insights from recent research. We also provide AEGIC's perspective on key opportunities and risks for the Australian oat industry and make recommendations.*

## Australian oat production and use

The area sown to oats and oat production in Australia can vary widely from year to year (Figure 1). The current five-year average production is around 1.4mmt.

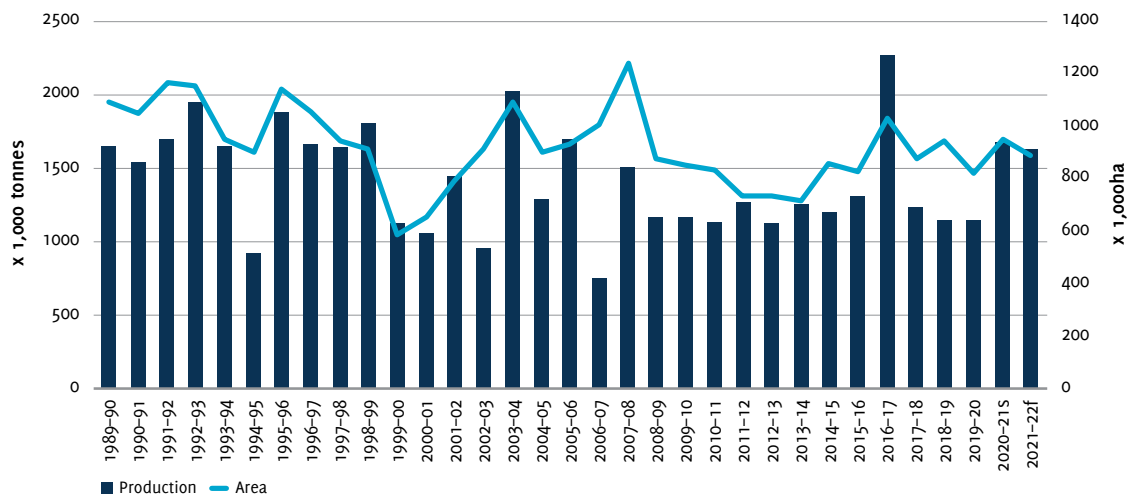


Figure 1. Annual area sown to oats and oat production in Australia 1989-2020

Source: ABARES Crop Report

Western Australia is consistently Australia's largest producer of oats (Figure 2).

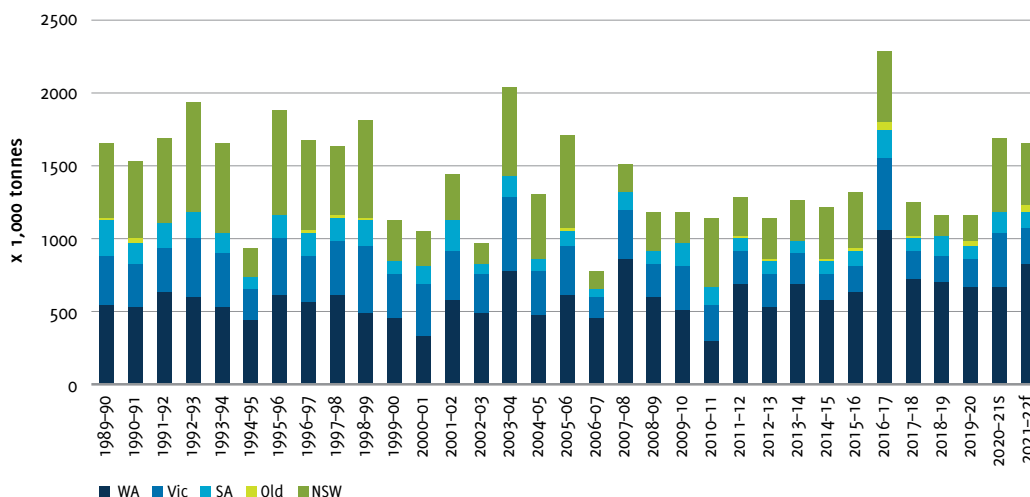


Figure 2. Australian oat production by State: 1989-2020

Source: ABARES Crop Report

Around 1–1.1mmt of oats are used annually within Australia for seed, food and feed purposes.

Australian milling of oats continues to grow. Oats milled in Australia are used to meet domestic consumption and export needs. In 2020 over 250,000 tonnes of oats were milled domestically (Figure 3). This is expected to increase to more than 300,000 tonnes in 2021 and 2022. The use of oats for milling in Australia is more stable than raw oat exports in part due to the price volatility for oat products in international markets.

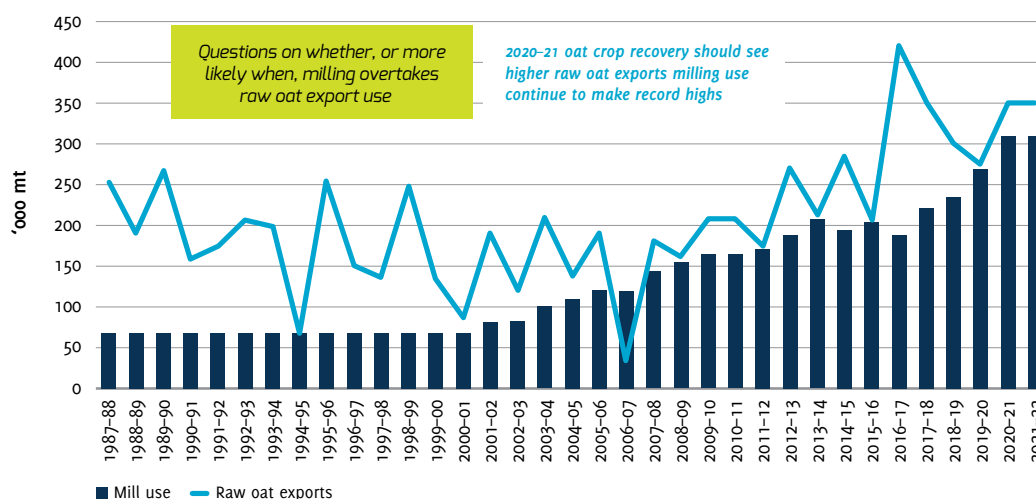


Figure 3. Australian raw oat exports and milled oats

Source: Oatinformation.com

Australian oat millers often purchase oats under contract. For example, Uncle Toby's, a subsidiary of the food giant Nestle, was reported in 2016 to be buying annually around 30,000 tonnes of Australian oats through a partnership with Australian growers in collaboration with supply chain operators. This approach delivered several benefits including a reduction in greenhouse gas emissions through greater sourcing of oats near the Uncle Toby's factory. Globally, Nestle has committed to zero net emissions by 2050 and the company already has several initiatives in place around responsible sourcing of raw materials. Increasingly, food companies will have greater involvement in the way ingredients, including oats, are produced and sourced. Oat procurement schemes increasingly will reflect those sustainability imperatives.

Oats are also retained on farm for animal feed and used in domestic production of compound animal feed.

Oats are also grown to produce hay for domestic and export animal feed markets. This versatility in end use provides some growers with the opportunity to sell their crop into either or both markets.



# Australian oat exports

Australia is the 2nd largest oat exporter, about 10 per cent of world trade, behind the behemoth of Canada (75 per cent of world oat trade). Oat exports include raw oats and processed oats. Processed oats are sometimes referred to as milled oats or oat products. Oat product terminology can vary, dependent upon the source making it difficult to get precise information on oat exports by product (e.g. oat flake, rolled oats, kiln dried hull off etc).

Over the last five years, Australian raw oats exports have ranged from a high of 550,000 tonnes in 2017 to 245,000 tonnes in 2019. China, India, Malaysia and Japan are the largest buyers (Figure 4).

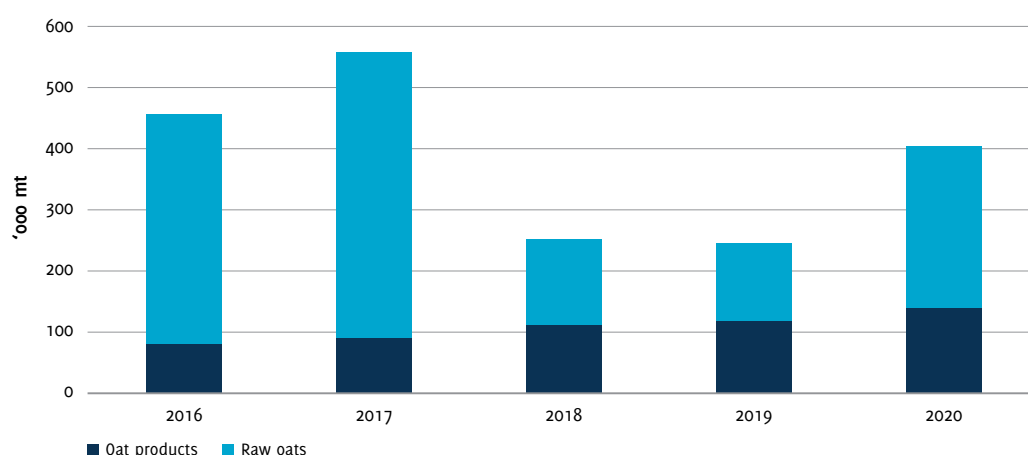


Figure 4. Australian raw oat exports and milled oat exports

Source: Oatinformation.com, ABS and AEGIC

Western Australia (WA) is the key oat exporting state in Australia, contributing 90 per cent of oat product exports and 70 per cent of raw oat exports (Figure 5). WA is likely to continue to be the major producer and exporter of both raw oats and oat products.

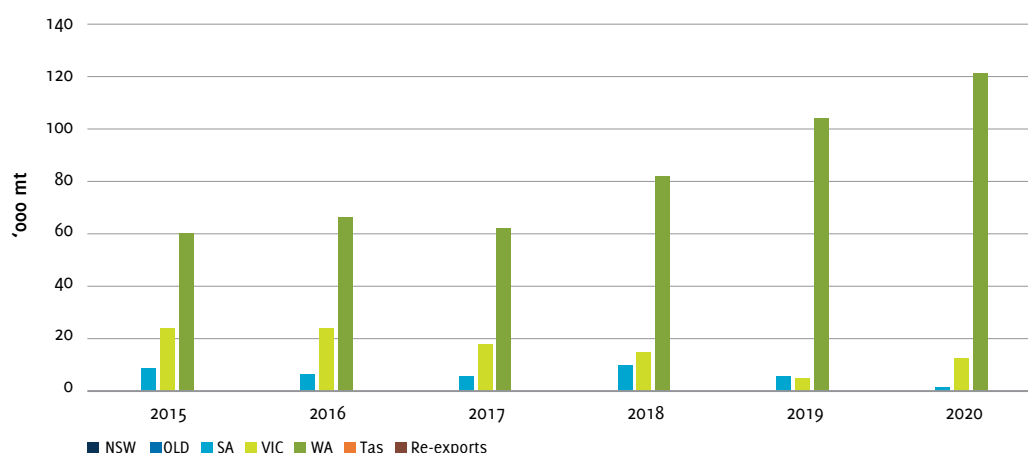


Figure 5. Australian oat products exports by State

Source: Oatinformation.com and AEGIC

Exports of oat products from Australia have increased over the last five years (Figure 6). Robust growth in 2020 was driven by significant demand from several markets. Exports to China increased by nearly 50 per cent, Malaysia and Japan were both up 22 per cent and the Philippines increased 8 per cent. In contrast, oat product exports to India reduced by 10 per cent.

Flaked oats continue to be Australia's major oat export product accounting for 80 per cent of oat product export sales, with other processed oats accounting for 20 per cent.

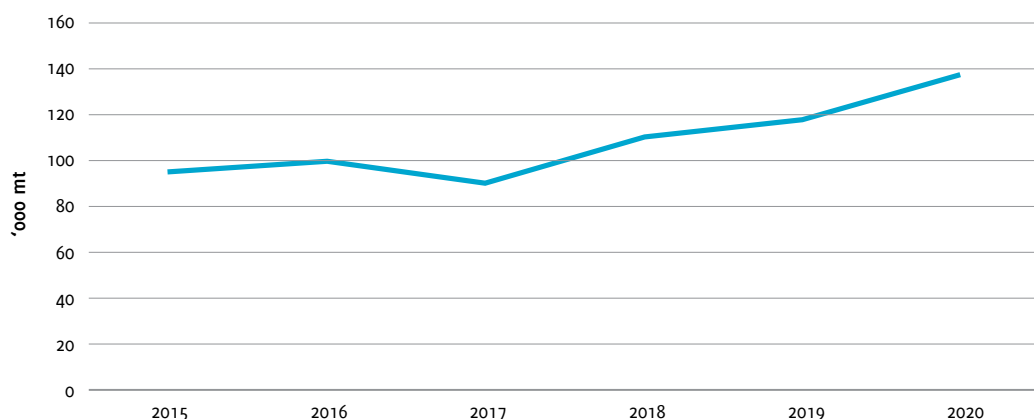


Figure 6. Australian oat product exports 2015–20

Source: Oatinformation.com and AEGIC

China was the largest market for Australian oat products in 2020. China's imports of Australian oat products have grown markedly from 2015 (Figure 7). Western Australia is the key supplier of raw oat and oat products to China.

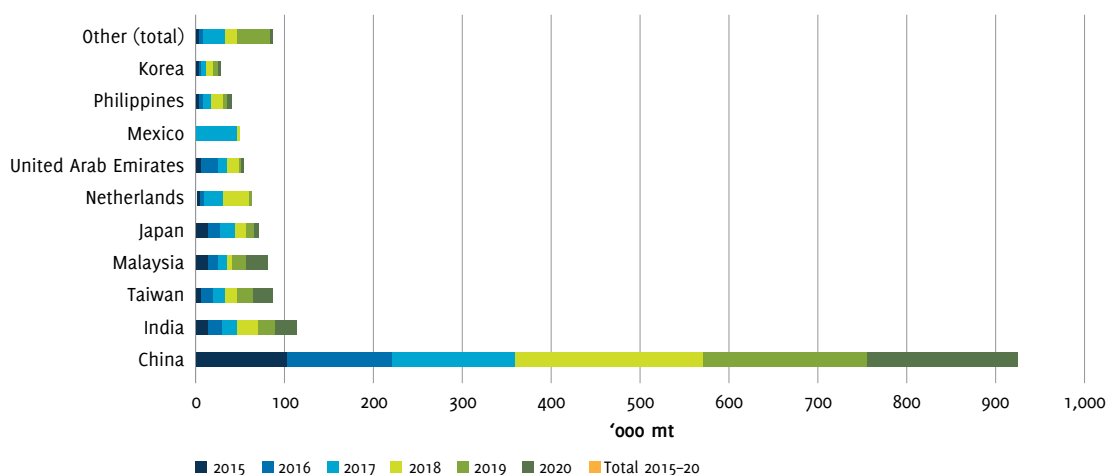


Figure 7. Western Australian oat exports 2016–20

Source: Oatinformation.com and AEGIC

Oats that are processed in Australia and exported are welcomed by buyers because of their low moisture content. If a buyer purchases a cargo of oats, high moisture content means that they are paying to ship “water”. For example, Australian oats regularly trade at 5 per cent less moisture content than Canadian oats. Using a 9 per cent to 14 per cent moisture spread, across a 30,000 tonne Handymax vessel, a buyer of Australian oats effectively receives an extra 1,500 tonnes of oats (or 75 extra 20’ containers) over a buyer of Canadian oats.



# Global production, supply and trade

## Production

Globally, the EU is the largest producer of oats followed by Russia, Canada, and Australia (Figure 8). Unlike large volume commodities such as wheat, rice and corn, world production and trade for oats is relatively small – annual wheat production is 770mmt whereas oat production is 23mmt.

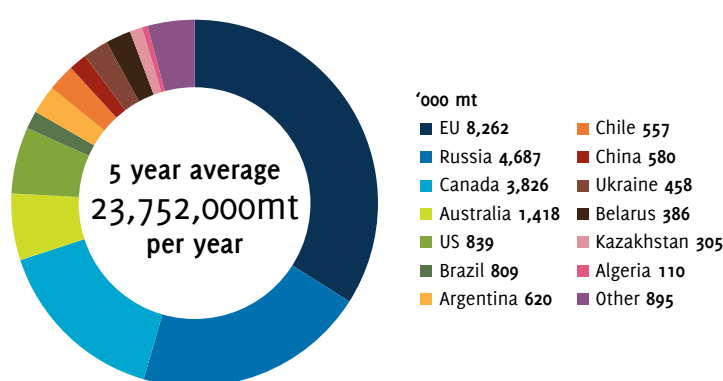


Figure 8. World oat production by country 2015–20

Source: Oatinformation.com and AEGIC

Despite global oat production trending down over the last 30–40 years (Figure 9), supply from major producers was at a twelve-year high in 2020. Oat production by producers in Poland, England, Finland, Spain, Sweden and Denmark has continued to grow, reaching twenty-year highs in 2020 (Figure 10). However, the long-term global trend is the opposite, due to an ongoing decline in oat area in the USA and to a lesser extent in Canada (Figure 11). Despite this downward commitment of land to the production of oats across North America, Canadian oat production hit a twelve year high in 2020.

A key issue for the major world oat producers, including Australia, is the lack of stability in year-to-year supply due to seasonal factors. Seasonal imbalances in supply can have a major impact on raw oat and oat product export availability and price. As an example, drought in Chile in 2020 and 2021 resulted in that country shifting from being an oat exporter to an oat importer, creating export opportunities for Australian and other origin oats.

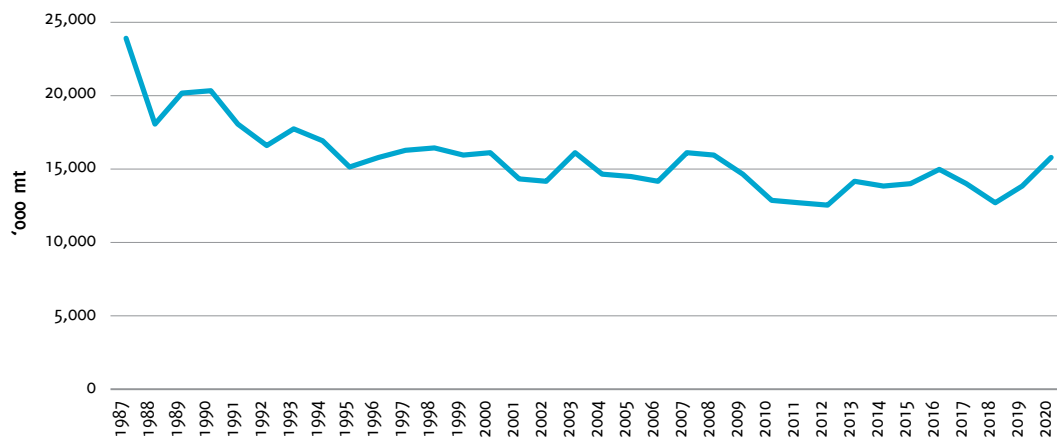


Figure 9. World oat supplies, major producers 1987-2020

Source: Oatinformation.com and AEGIC

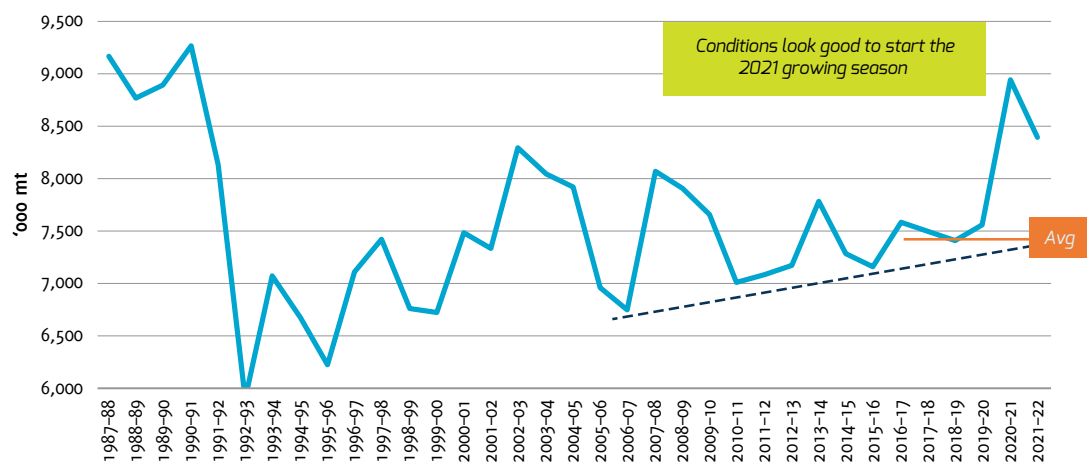


Figure 10. EU/UK oat supplies, major countries

Source: Oatinformation.com

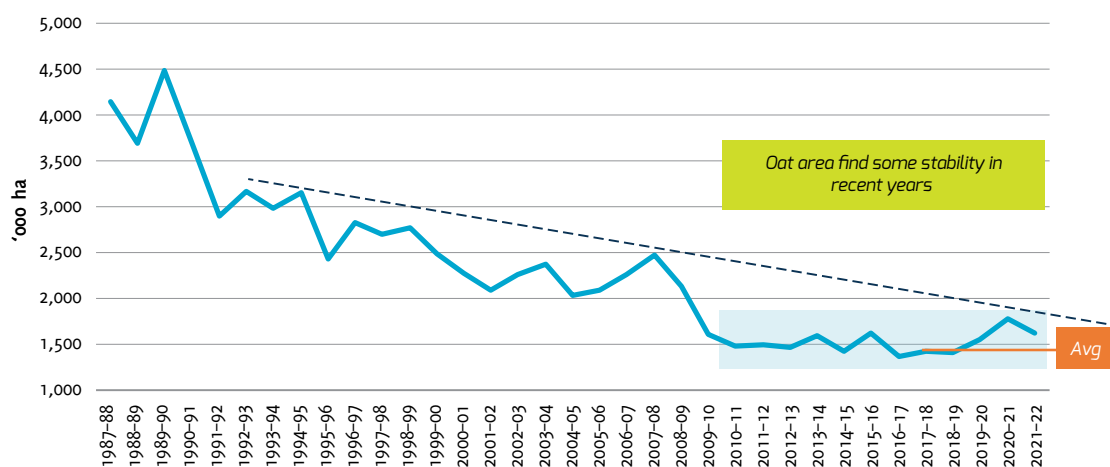


Figure 11. North American oat area 1987-2020

Source: Oatinformation.com

The switch to soybean and corn as favoured crops has all but eliminated oat production in the USA, previously the world's largest producer of oats. The increasing shift of US and Canadian government policy towards renewable energy sources, such as soybean and canola, is already having an impact in US and Canadian cropping industries. Industry analysts suggest this will put increased pressure on US and Canadian oat plantings into the future.

Explaining further, the Californian state government's Low Carbon Fuel Standard requires a 20 per cent reduction in the carbon intensity of transport fuels by 2030. Fuels with carbon intensity scores higher than the targets generate deficits, while fuels with lower scores generate credit. Adherence to this Standard and Canada's Clean Fuel Standard, scheduled to begin in 2022, will substantially grow the market for renewable fuels in the USA and Canada. The growth in renewable fuels is evidenced by a California Air Resources Board estimate that use of bio-based diesel fuel has grown from about 16 million gallons in 2011 to nearly 1 billion gallons in 2020. Renewable diesel fuel is one the fastest growing low carbon transportation fuels sold in California and adjacent west coast states. This demand is encouraging the planting of soybean and canola and will continue to squeeze the production of minor crops like oats.

## Global oat trade

Oats are mostly consumed in the country of production. Only around 10 per cent or 2.3–2.6mmt of annual global production is exported as raw oats or oat products.

Canada is the dominant oat exporter, exporting around 2–2.4mmt of raw oats/oat products annually. Australia is the second largest oat exporter, typically at volumes below 0.5mmt.

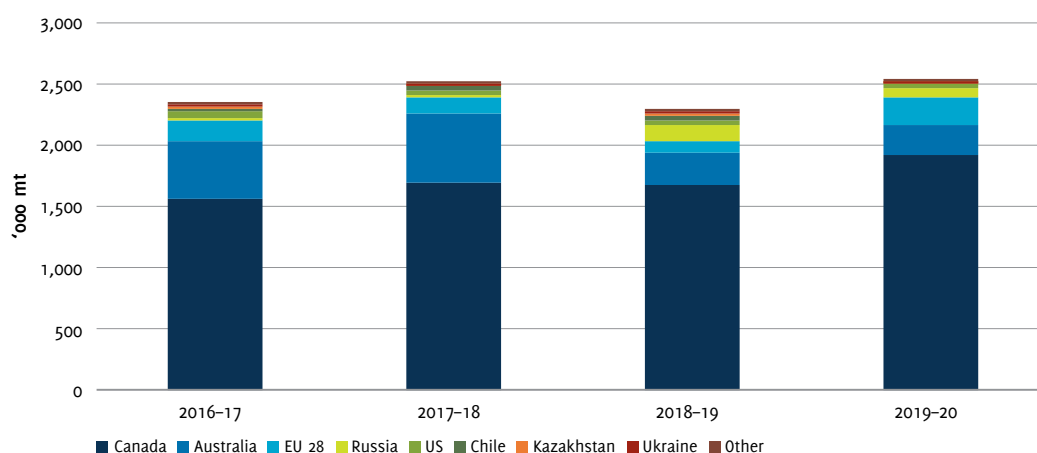


Figure 12. Major oat exporters 2016–20

Source: Oatinformation.com and AEGIC



The USA is the largest importer of raw oats, usually accounting for over 60 per cent of world oat trade (Table 1). As Canada is the major exporter of oats to the USA, North America forms a critical component of the world's oat supply and demand. Other key importing countries include China (222,000 tonnes in 2020) and Mexico (137,000 tonnes in 2020). All other importing countries typically import less than 100,000 tonnes of oats each year.

Market growth for raw oats trade in many markets is relatively modest (Table 1). India is often reported as a market that has medium term growth prospects for oats, albeit from a low base.

Table 1. World oat trade 2016–21

October/September Year, thousand metric tonnes						
	2017–18	2018–19	2019–20	2020–21	2021–22 Jun	2021–22 Jul
<b>TY exports</b>						
Australia	550	250	245	400	300	400
Canada	1,685	1,665	1,899	2,000	2,100	2,000
European Union	141	119	235	120	200	200
Kazakhstan	10	27	7	10	10	10
Russia	34	134	73	75	100	100
Ukraine	7	11	16	15	15	15
United Kingdom	26	49	112	50	115	115
Others	40	47	18	20	17	17
<b>Subtotal</b>	<b>2,493</b>	<b>2,302</b>	<b>2,605</b>	<b>2,690</b>	<b>2,857</b>	<b>2,857</b>
<b>United States</b>	<b>31</b>	<b>26</b>	<b>32</b>	<b>40</b>	<b>30</b>	<b>30</b>
<b>World total</b>	<b>2,524</b>	<b>2,328</b>	<b>2,637</b>	<b>2,730</b>	<b>2,887</b>	<b>2,887</b>
<b>TY imports</b>						
Algeria	7	1	13	20	10	10
Chile	0	14	28	200	230	230
China	389	224	222	250	300	300
Ecuador	39	16	12	30	20	20
European Union	39	58	113	50	80	80
India	19	21	25	40	25	50
Japan	44	46	47	50	50	50
Korea, South	46	31	25	25	25	25
Malaysia	23	16	29	25	25	25
Mexico	168	129	137	180	200	150
Norway	21	93	45	20	25	25
Peru	29	41	45	50	70	70
South Africa	39	23	62	25	25	50
Switzerland	49	51	56	50	50	50
United Kingdom	14	28	28	23	20	20
Others	29	54	46	34	38	38
<b>Subtotal</b>	<b>955</b>	<b>846</b>	<b>933</b>	<b>1,072</b>	<b>1,193</b>	<b>1,193</b>
<b>Unaccounted</b>	<b>26</b>	<b>85</b>	<b>113</b>	<b>128</b>	<b>94</b>	<b>144</b>
<b>United States</b>	<b>1,543</b>	<b>1,397</b>	<b>1,591</b>	<b>1,530</b>	<b>1,600</b>	<b>1,550</b>
<b>World total</b>	<b>2,524</b>	<b>2,328</b>	<b>2,637</b>	<b>2,730</b>	<b>2,887</b>	<b>2,887</b>

TY = trade year

Source: USDA May 21 Grain: World markets and trade

In contrast, a Compound Annal Growth Rate (CAGR) of over 2 per cent is forecast for major oat milling markets (forecast over the five years to 2026 (Figure 13). This increased demand is being met by domestic production in some countries such as Sweeden and Finland, which are shifting more to domestic milling than raw oat exports. In contrast, the US is importing more raw oats from Canada to meet its growing milling demand. These scenarios are likely to increase opportunities for the export of Australian oat and oat products. Growth in oat consumption comes on the back of the incidence of COVID19 boosting demand for oat foods as an affordable and easy-to-prepare, health and home food.

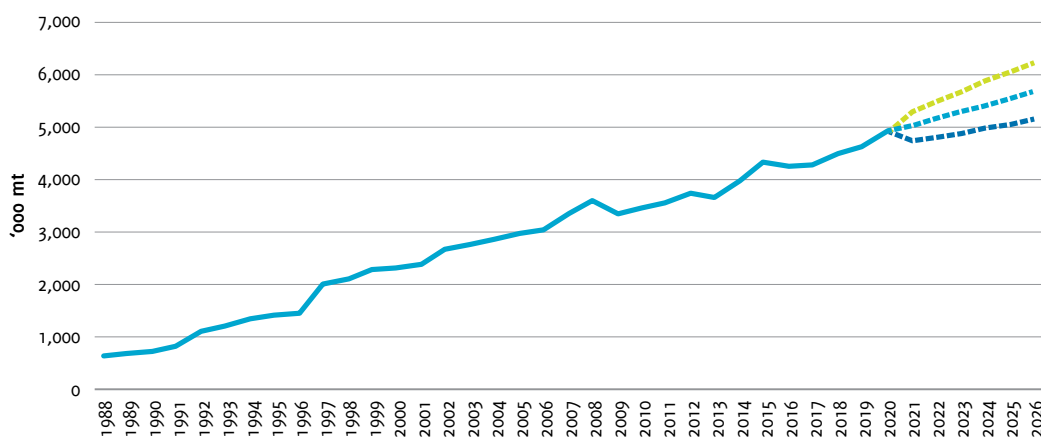


Figure 13. Oat mill usage – global oat markets

Source: *Oatinformation.com*

China overwhelming presents the largest growth opportunity for Australian raw oats and oat products as its middle-class consumers seek more diverse diets to complement their staple traditional foods of rice and wheat noodles. Australia is already the main supplier of oats to this market.

# Australia's major oat competitors

## Canada

Canada regularly produces between 3.5-4.5mmt of oats annually (Figure 14). Its five-year average production is 3.77mmt. Many Canadian growers can switch in or out of oats to wheat, barley or many other crops, dependent upon expected price and profit relativity. Oats is being displaced by more profitable crops including soybeans and yellow peas. At times, other grains such as feed barley may be easier to grow with less quality requirements than wheat or oats. Oat production over the next decade will continue to be strongly influenced by the strength of the US demand and associated export prices. After 2008, Canada's oat area declined markedly and remained low for several years. Only in the last few years has a sustained increase in the area planted to oats been observed (Figure 15). Overall production has been increasing due to better yielding varieties and agronomic practices, despite the reduction in area planted.

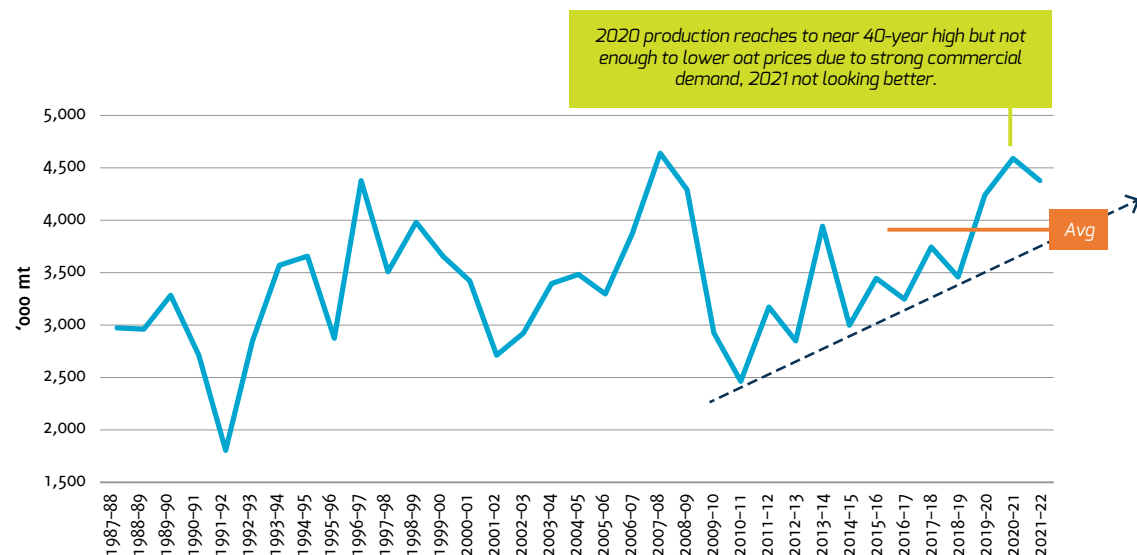


Figure 14. Canada oat production

Source: Oatinformation.com

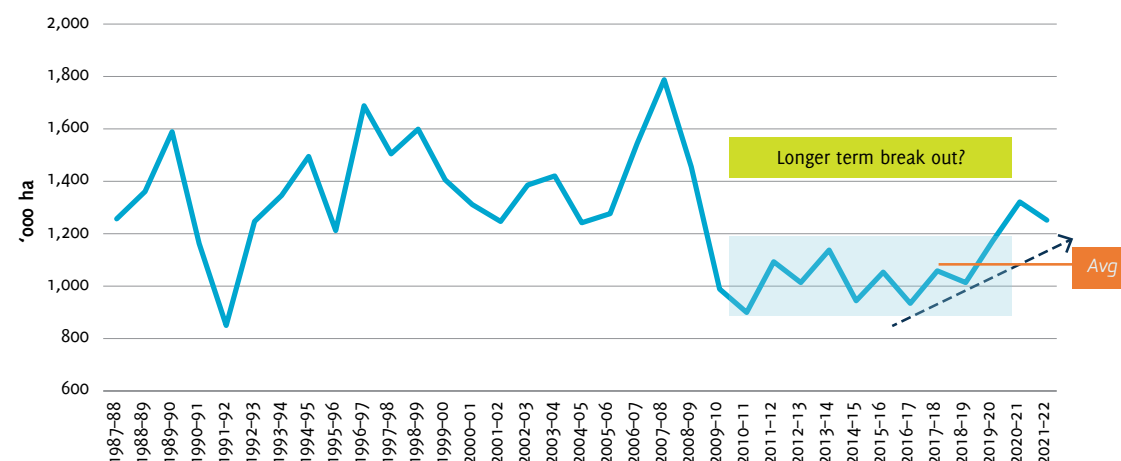


Figure 15. Canada harvested oat area

Source: Oatinformation.com



Canada exports around 2.1mmt of oats/oat products annually, of which 1.86mmt (88 per cent) flows to the USA. Raw oats account for around 1.1mmt, various oat products at 390,000 tonnes and 370,000 tonnes for the US horse industry (Table 2).

Table 2. Canada raw oat and oat product exports

Product	'000 mt				
	15-16	16-17	17-18	18-19	19-20
Oat products to the US*	357	360	398	399	444
Oat product overseas*	62	60	68	62	74
<b>Total oat products exports</b>	<b>419</b>	<b>420</b>	<b>466</b>	<b>461</b>	<b>518</b>
Raw oat US milling industry	1,147	1,255	1,198	1,013	1,028
Raw oat overseas	195	130	152	304	277
Raw oat US horse industry	228	257	282	428	486
<b>Total raw oat exports</b>	<b>1,570</b>	<b>1,642</b>	<b>1,632</b>	<b>1,745</b>	<b>1,791</b>
<b>Grand total</b>	<b>1,989</b>	<b>2,062</b>	<b>2,098</b>	<b>2,206</b>	<b>2,309</b>

\* Flakes, groats, pearled, sliced and flour

Source: Oatinformation.com and AEGIC

Canadian exports raw oats to other countries are around 211,000 tonnes (5 year average). Of note is the small volume of raw oats exported by Canada to China (Figure 16). Canada can export seed oats and processed oats to China but cannot export raw oats for human or animal consumption due to the lack of specific phytosanitary protocols. Industry sources suggest access for raw oats is not likely to be gained in the near term, despite Canada recognising the increasing oat opportunities in China.

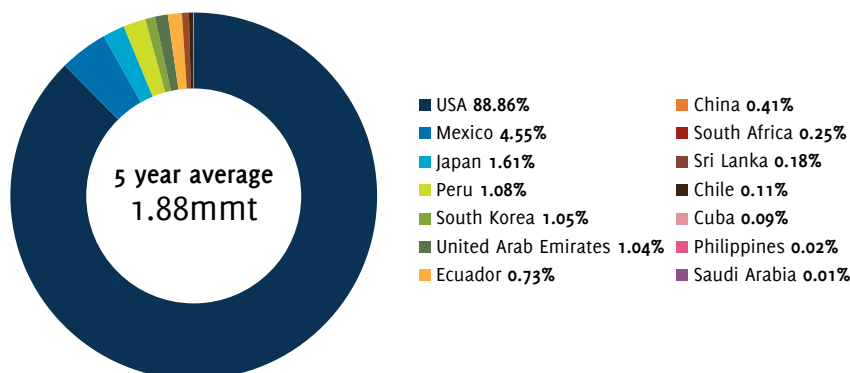


Figure 16. Canada raw oat exports by market 2015-20

Source: Oatinformation.com and AEGIC

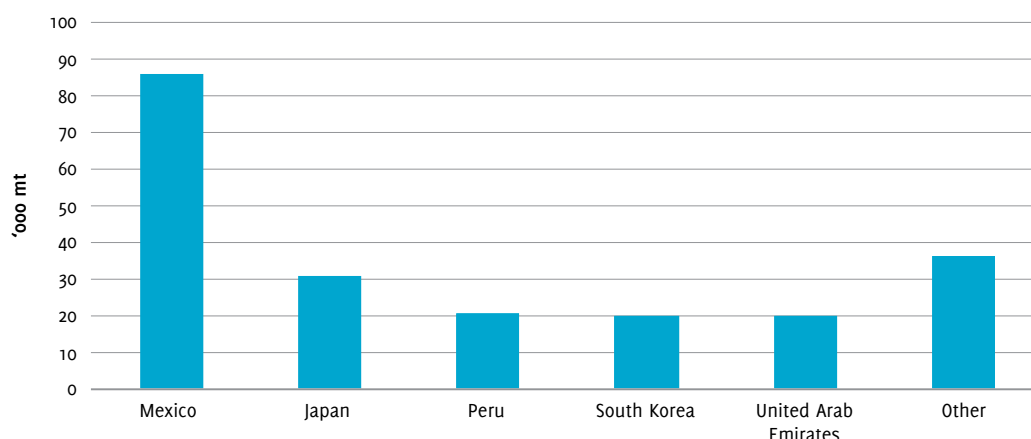


Figure 17. Canada raw oat exports by market, excluding USA

Source: Oatinformation.com and AEGIC

Canada's oat product exports including oat groats and meals, rolled or flaked grains or hulled, pearled or kibbled oats (Figures 17, 18 and 19). The USA is the major oat product export market, followed by Mexico.

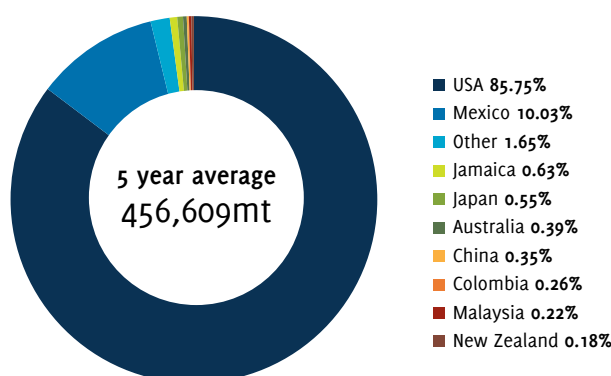


Figure 18. Canada oat product exports by market 2015-20

Source: Oatinformation.com and AEGIC

All other markets are dwarfed by the massive volume of raw oats and oat products sold to the US market each year, with the next five markets' offtake accounting for most of the remaining exports. Canada dominates supply of raw oats to Mexico and is the largest supplier of pony oats to the Japanese market.

The Canadian Prairie Growers Association see the proposed rail merger involving the Canadian Pacific Railway and the Kansas City Southern Railway to be advantageous for Canadian oat growers by providing greater supply chain services to US and Mexican markets.

As in other countries, including Australia, Canadian oat breeders are hoping to meet the growing demand for higher quality oats through the release of higher yielding, disease resistant varieties that meet the quality requirements of the food industry, such as beta-glucan targets.

Just as breeders seek to deliver high quality oat varieties, food companies continue to develop strategies that improve their positioning to meet consumer demands. Increasingly oat food manufacturers are refusing to accept Canadian oats that have been treated pre-harvest with glyphosate. Some farmers in Canada use glyphosate as a late season weed killer and as a desiccant in the event of late rains that have the potential to reduce crop quality. A desiccant product is used to dry the crop more quickly and evenly than otherwise would occur naturally.

General Mills, the US based global food giant, launched a regenerative oat pilot project in 2020 in North Dakota and the Canadian provinces of Manitoba and Saskatchewan. This is part of a broader initiative to have more than one million acres under regenerative practices in its supply chain practices by 2030. The regenerative approach focuses on improvements in economic resiliency in farming communities, soil health, water and biodiversity (Olesen, 2020).

## EU and United Kingdom

EU countries annually produce around 2.4-2.65mmt of oats (Figure 19). Key oat producing countries include Poland, Finland, Spain, Sweden, and Denmark. The United Kingdom produces around 1mmt of oats annually.

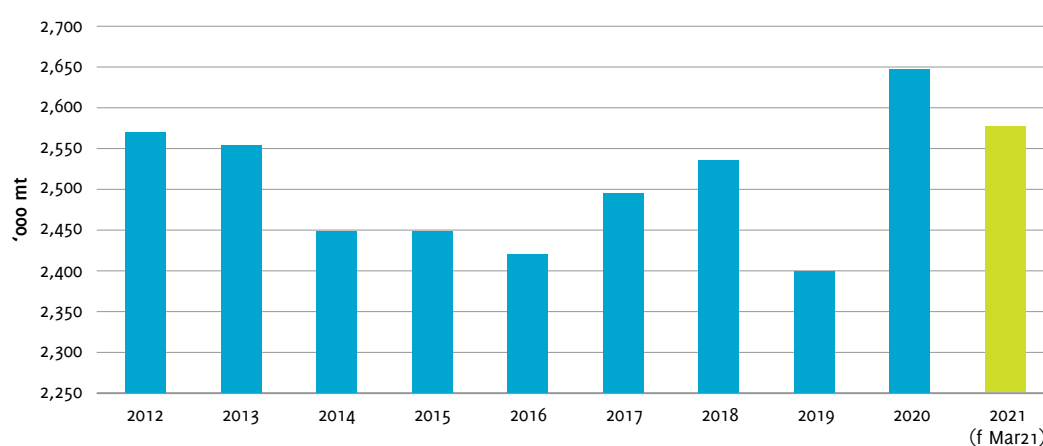


Figure 19. EU28 oat production 2012-21

Source: Oatinformation.com and AEGIC

Exports to other EU countries account for near ninety percent of EU and UK oat exports, with Germany regularly supplying fifty per cent of the export volume. Other non-EU export markets in recent years include China, Sri Lanka and the USA.



## Finland

Finland exports 300,000–400,000 tonnes of oats (raw and oat products) each year (Figure 20). Its exports in 2019–20 were at an 18-year high at 433,000 tonnes.

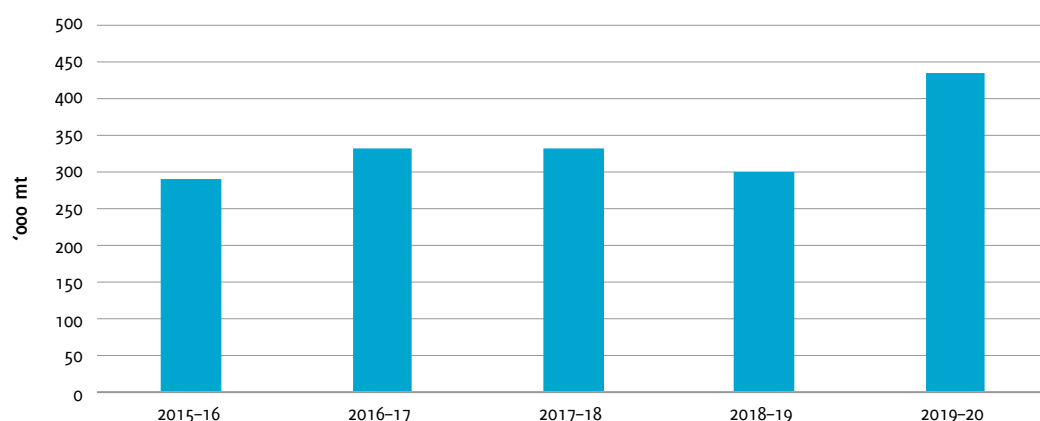


Figure 20. Finland oat export volume 2015–20

Source: Oatinformation.com and AEGIC

Finland's oat milling industry continues to have robust growth, and in 2020 it became the third largest EU/UK oat product exporter, behind the UK and Germany. Finland's oat exports compete against other producers including Poland, Sweden, Denmark, Lithuania, Estonia and Latvia. If oat quality is not to the export mill standard, the oats can be used to meet domestic feed and mill demand. Finnish oats compete with Australian oats in some markets e.g. South Africa in certain seasons.

Investment in oat processing seems to be continuing. In March 2021 Viljava announced an investment in a new oat mill, via Suomen Viljava's subsidiary. The oat mill, to be based in the port of Rauma, will have capacity to mill 110,000 tonnes of oats with products to include 80,000 tonnes of groats and flakes and 35,000 tonnes of oat husk pellets for the Baltic Rim countries and biofuel market. The investment is planned for 2022 (Suomen Viljava Oy, 2021).

## Sweden

While domestic use of oats for food in Sweden is increasing, exports can be highly variable, ranging between 100,000 and 300,000 tonnes annually. Export destinations for Swedish oats include other EU countries mostly Denmark, Belgium, Spain, Netherlands and Norway, the UK and the USA.

Sweden has long invested in oat innovation, with the country developing a wide range of oat products including oat fibre, oat bran, oat oil and oat milk to name a few. Interestingly milk consumption in Sweden is declining. Per capita milk consumption was around 126 litres in 2001 but this has now declined by around 25–30 per cent as consumer views of cow's milk health properties and environmental impact have altered. Some reports indicated that part of this fall can be attributed to the release of oat milks and advertising campaigns painting cow's milk in a poor light on health and environmental grounds.

Publicly and commercially supported oat innovation is continuing in Sweden. One example is the Swedish Foundation for Strategic Research funding of ScanOats, an Industrial Research Centre with three academic and three industrial partners. Some of its goals are to develop new oat varieties and ingredients to promote oat cultivation and double exports of oat-based products.

Sweden and Finland's dominance of EU exports has declined, as they both have become more focussed on value adding and processing of oats (Figure 21).

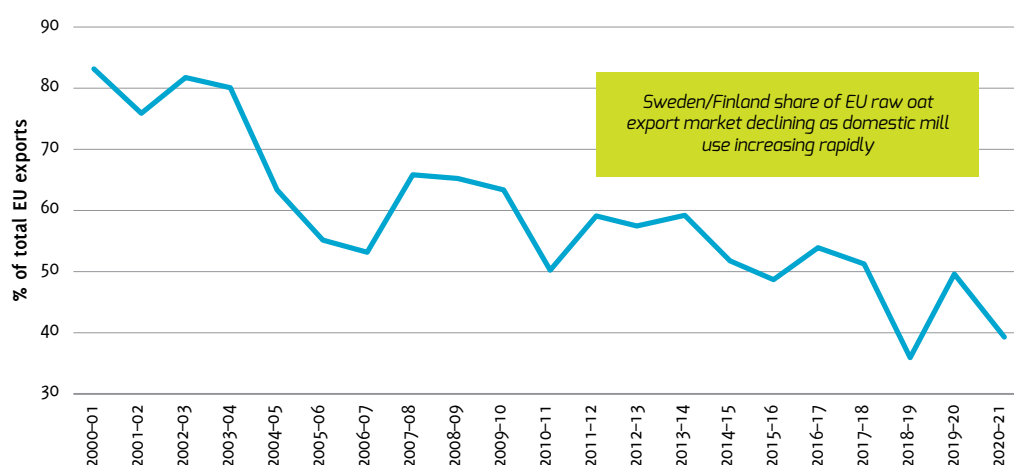


Figure 21. Sweden and Finland's share of EU oat exports

Source: Oatinformation.com

## Russia

Although Russia is ranked as the second largest producer of oats after the EU, the country's oat production has declined markedly over the last three decades. Production has fell from around 10mmt per annum in the early nineties to 4–5mmt in recent years.

Oats are grown primarily for fodder or feed and are consumed domestically. Domestic food, seed and industrial use is only 20–25 per cent of total annual production. Oats have long been used in Russia to make staple foods including porridge and gruels and many other foods.

Annual oat exports in recent years have ranged from 14,000 to 134,000 tonnes. The quality of Russian oats for food usage in international trade is considered inferior to Australian or EU oats, with reports of Russian oats containing dark coloured grains and high levels of admixture. Oat imports into Russia are negligible and often only a few thousand tonnes.

# Major oat importers

## China

China's annual oat production is around 600,000–700,000 tonnes. Oats grown are mostly hull-less, or naked, varieties. Naked oats have some shortcomings — they can be used in noodles and dumplings, where the oat is ground to flour, but their texture as flakes collapses in porridge.

Expanding interest in a wide range of oat foods, increasing awareness of the nutritional and health benefits of oats, and the need for conventional oats to improve quality of some foods, has resulted in increased oat consumption in China. This in turn is increasing oat imports, mostly from Australia (Table 3).

Table 3. China oat imports

Exporters	Imported quantity (tonnes)				
	2016	2017	2018	2019	2020
World	192,454	394,310	272,570	220,417	213,490
Australia	182,632	384,455	267,171	181,955	167,678
Russian Federation	–	562	1,410	33,340	37,641
Canada	1,619	5,824	3,550	3,543	5,700
United States of America	2,089	3,386	438	1,581	2,471
Finland	5,856	56	–	–	–
United Kingdom	259	28	–	–	–

Source: Trade Map

Consumers in northern China prefer noodles, while consumers in southern China favour rice-based foods. The inclusion of oats in these and other products provides increasing opportunity for Australian oat growers. Australian oats are already widely used for oat porridge, providing a healthy alternative to traditional rice porridge for breakfast. In addition to oat rice and oat noodles, oat beverage (oat milk) and oat porridge consumption in China are also predicted to increase.

As oat consumption grows, so does Chinese oat processing capacity, reported to be in excess of 700,000 tonnes per annum. Oat processing in China is concentrated in two regions, each with a different oat processing and oat end use focus:

- Northern China — a traditional oat growing and consuming region concentrated around Zhangjiakou, Hohhot and Datong. Most Chinese oat consumption is in this region, where domestic oats are typically milled into flour and used in noodles, dumplings and similar products.
- Eastern China — located around the hubs of Hefei, Shanghai, Guilin and Shantou. Imported oats are mostly processed in these areas, with flaked oats the dominant product.



Approximately 50 per cent of Chinese oat consumption is based on milled oat flour which is used in traditional dumplings and extruded pasta-like noodles (Ren, 2016). Sheeted wheat noodles which contain some oat flour, are not traditional but are beginning to appear in the market, particularly in northern China. Both domestic and imported oats are used for these products.

Fifteen per cent of China's oat consumption is in the form of oat rice with 40 factories producing 100,000 tonnes annually, mainly centred in Hebei Province and Inner Mongolia Ren (2016). Oat rice is often consumed as a blend of oat rice with rice in a 20:80 ratio prior to cooking, particularly in the traditional rice-eating areas of southern China. Processors in China have mixed views about the market potential for oat rice. Some companies are optimistic for substantial growth, based on several factors: (i) its compatibility with the flavour and texture of rice, (ii) the current low per-capita consumption of oats (i.e. a low base), and (iii) the strong and well-received health message for oats.

Market share of commercial packaged oat beverages is growing in China and Taiwan with several large oat companies being active in this segment. Market trends strongly favouring convenience are supporting growth in the oat milk sector, with marketing channels through online stores, convenience stores, supermarkets and corporate gifts occurring, especially during festivals. There are two distinct oat beverage categories, dairy milk-based drinks which are fortified with oats in the form of flakes or flour, and drinks with oats and water as the only ingredients (except in examples which may be fortified, say with oligosaccharides). These products fill the premium space in the oat drink market. Sophisticated television marketing advertisements using celebrities to promote a positive and healthy image for oat milk drinks are used. Some companies obtain regular consumer sensory feedback on oat milk product quality.

### Chinese oat requirements

In recent years AEGIC, assisted by GRDC funding, has conducted interviews with Chinese oat processing companies and Chinese oat researchers to determine key oat quality and functionality characteristics sought by the Chinese market. In a simple, non-quantitative, survey process, respondents were asked to rate on a scale of 1 to 10 the relative importance of 22 oat qualities (Figure 22). Six of the seven most highly ranked quality parameters were: reliability of supply, price, foreign material, moisture content, soundness and test weight, marked in yellow.

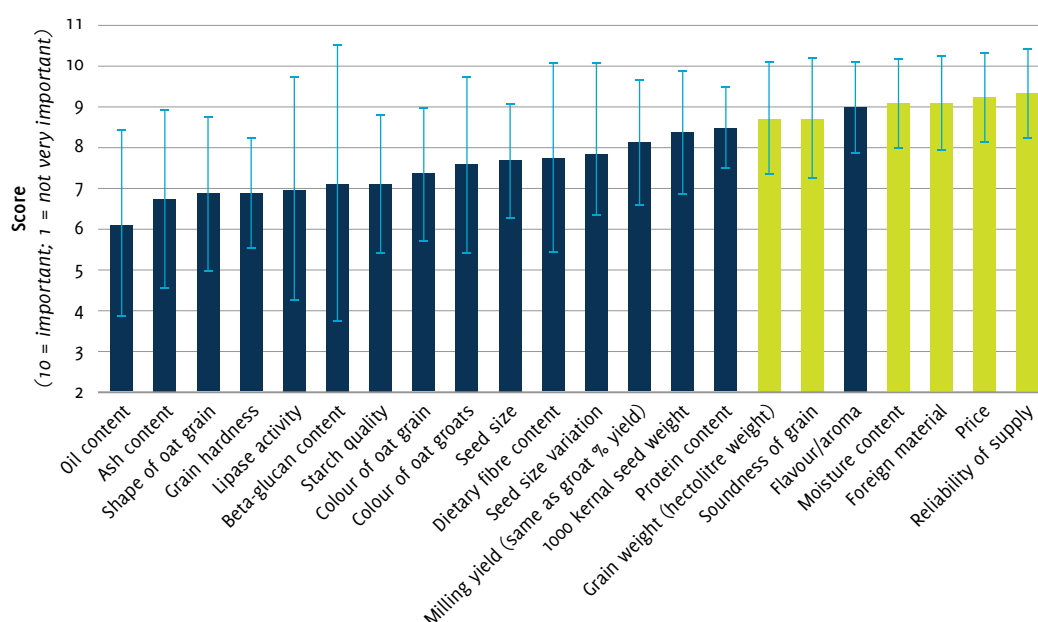


Figure 22. Aggregated ranking scores for quality parameters across interviewed Chinese oat food companies

Note: The thin lines show the standard deviation

Source: AEGIC survey results 2016–18

Respondents ranked physical grain quality parameters highly. Six of the seven most highly ranked quality parameters were: reliability of supply, price, foreign material, moisture content, soundness and test weight (Figure 23, marked in lime green). Standard deviations for these parameters were low, indicating a strong consensus among respondents in ranking their most important quality attributes.

Beyond quality parameters typically specified in grain trading contracts, there was greater variation expressed between Chinese oat processors in their rankings for other oat qualities which might impact food end-product qualities e.g. beta-glucan and lipase activity. For example, even between large processors, variation was relatively high in the importance placed on beta-glucan with some processors specifying to suppliers' minimum requirements, and others having no beta-glucan specification. Generally, larger standard deviations for parameters show greater variance among respondents. This reflects the diversity within China of oat processing companies and a variable, yet continuously developing, technical sophistication in Chinese oat processing companies.

### **Other factors**

Other factors that were important to Chinese companies, purchasing or milling oats are described below:

- Ease in removing the hull of oats was important to Chinese oat processors; with some manufacturers seeking greater consistency in the size of oats and a preference for large oats, explaining that variation in size is a major production problem.
- Flavour and aroma are a key quality focus for Chinese oat processors. Oat flavour is influenced by a range of factors including:
  - i. the intrinsic flavour of oat varieties, and
  - ii. positive and negative flavours attributable to processing, in particular heat-treatment.
- Food safety is of high importance with monitoring of total plate counts, aflatoxin, *E. coli*, heavy metals and purity regularly conducted. Accreditations to quality standards such as ISO22000, HACCP, GMP, Green Food, China Organic Food Certification, the 'Hyde of Deer' logo indicating food products are natural food (with minimal additives) are often prominent. Some companies, particularly oat milk manufacturers, have registered patents for their processes. They have invested in sophisticated production facilities and undertaken onerous FDA food safety approvals as a prerequisite to exporting to US markets.
- Glyphosate residues were specifically mentioned by several companies. Australian oats were particularly praised as a preferred source. Glyphosate residue status is a marketing advantage for Australian oats which is generally acknowledged at the processor level.
- Beta-glucan is emerging as a selling point for Taiwanese and Chinese oat milk manufacturers, with some citing beta-glucan as a technical specification which influences their raw material purchasing decisions.
- Chinese oat milk processors seem to have a good understanding of technical requirements for beta-glucan, focusing not only on its quantity in oats but also on its molecular weight, driven by their understanding that their domestic and export markets have different product viscosity preferences. Chinese oat milk manufacturers are likely to lead growing Chinese market awareness and demand for beta-glucan in the next 5–10 years. While these manufacturers did focus on oat beta-glucan, other oat qualities of interest to them were grain physical characteristics: test weight, moisture content, impurities, and mould.



### Opportunities

There are numerous opportunities to assist growth of oat consumption in China, particularly as whole oatmeal, instant oat, quick oat and muesli have high consumer acceptance. Target areas and considerations could include:

- Stable supply of large and short, round kernel shape; light and golden in colour; shallow ventral furrow; low hull percentage; good flavour and high beta-glucan content.
- Close attention to food safety.
- Development of a standardised national beta-glucan determination method.
- Oat processors are bullish about growth in oat consumption, driven by the strong and well-received health message for oats, China's 200 million diabetics and China's current low per capita oat consumption. Food safety is a key market driver. Australia's reputation is a strength here. The market has cautions against glyphosate residues and GMO grain which favour use of Australian oats. The connection of beta-glucan to health benefits are not well understood by consumers but this should improve in the next 5 to 10 years.
- As in all countries, oat companies in China have varying levels of technical expertise and access to resources. Research and development capacity in intensive processing technology was variable among companies. Targeted and variable technical exchange programs (i.e. catering to the capacity of the business) may be needed.
- The oats processing sector in China could benefit from new and improved oat product offerings and marketing stories that describe **"what's special about Australian oats"**.



## Japan

Japan does not produce any oats domestically. It is reliant upon imports and has been a long-standing market for Australian oats. Australia's market share however continues to erode with Canadian oats replacing Australian oats.

Japan annually imports around 40,000–50,000 tonnes of oats (Figure 23). In the early 2000's Australia's market share of Japan's oat imports was well over 50 per cent, whereas Australia's average market share for the last five years has dropped to around 30 per cent.

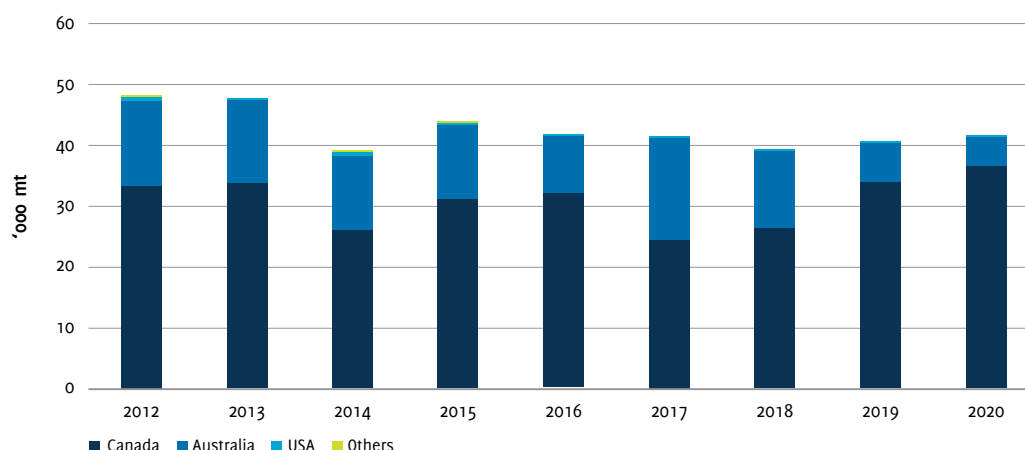


Figure 23. Japan oat imports by country, excluding seed for sowing, 2012–19

Source: ITC

Since 2007 Australian oats have often been imported at a higher price than Canadian oats (Figure 24).

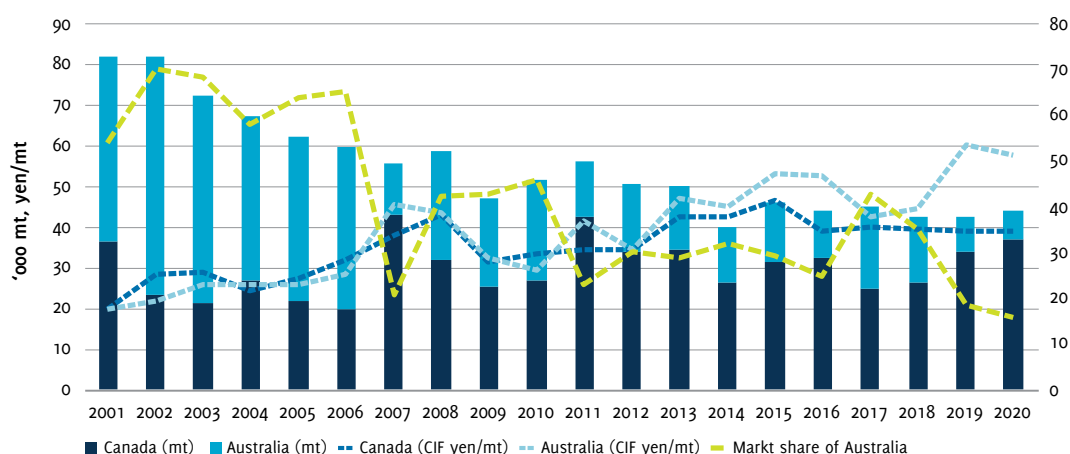


Figure 24. Japan's oat imports from Canada and Australia and their relative price

Source: ITC

While a small portion of imported oats are used for human consumption, most oats imported into Japan, around 40,000 tonnes, are fed to horses. Oats are a popular feed for racehorses because they are a traditional horse feed, are easily digested and the horses maintain good health even through feeding of unprocessed oat grain. Oats are a safe grain for horses because they contain less starch and more fibre and lipid compared to other grains. Australian oats are reported to have more fibre and lipid than Canadian oats, while Canadian oats have high palatability because of their thinner husk.

Traditionally most oats for racehorses were fed as flaked oats – the whole oat is pre-processed by steaming and rolling before being fed directly to the horse. Over the last decade, grain-based feeds have been decreasing and more compound feeds are being used by the racehorse industry. Compound feeds are often a mix of oats and baled hay and vitamins. Around 6,000 tonnes per year of oats are now used as an ingredient in compound feed. In recent years, corn and barley, beet pulp pellets and vegetable inclusion in compound feed has increased, to the detriment of oats. Declining horse numbers (Figure 25) over the last two decades have also contributed to the downturn in imports. From the early 2000's many racehorse tracks were abolished because of declining profits. Now, with horse numbers seeming to have stabilized, the volume of oats required for racehorses may remain stable over the next decade.

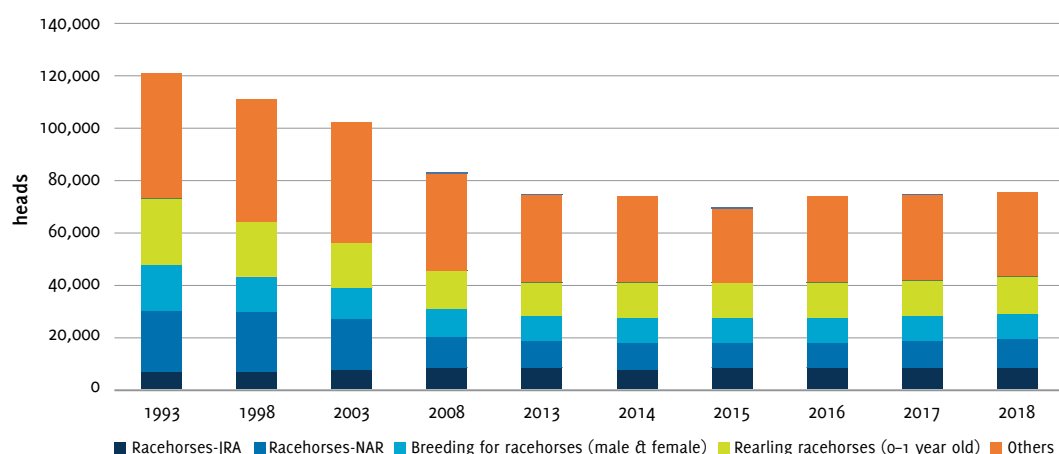


Figure 25. Horse numbers in Japan 1993–2018

Source: MAFF

In addition to oats for racehorses, Japan consistently imports about 5,500 to 6,000 tonnes of oats for sowing, with Australia recently supplying about 50 per cent of this volume (Figure 26). Sowing oats are used for pasture grass and green manure. Before reaching maturity, the oats are ploughed into the soil as a fertiliser.

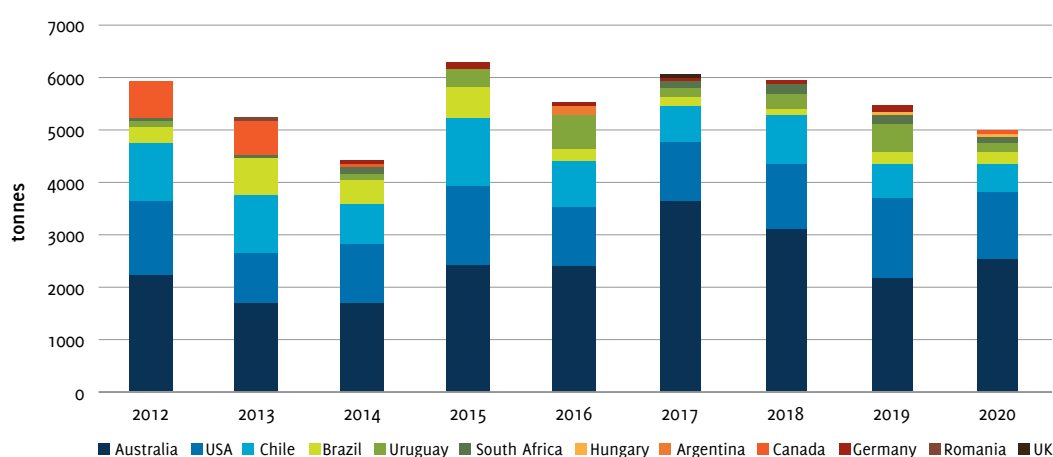


Figure 26. Japan's imports of oats for sowing 2012–19

Source: ITC



Currently processed Canadian oats are subject a higher import tariff than Australian oats (Canada 6 per cent, Australia 1.5 per cent in early 2021). From April 2023 the tariff rate on Canadian rolled and flaked oats will be reduced to zero, matching the Australian position. This may stimulate some renewed interest from Japan in Canadian oats. Australian oats are likely to be preferred due to their high quality and favourable colour.

Japan's import of rolled or flaked oats increased markedly in 2012, a direct response to rapid expansion in granola sales (Figure 27). Granola, a breakfast and snack food, is becoming increasingly popular in Japan. Granola typically consists of rolled oats, nuts (a source of polyphenol), dried fruit (a source of vitamins and minerals), and honey or other sweeteners. Granola, rated highly because of health and convenience factors, is now the third most popular breakfast in supermarkets, after rice and bread (Figure 28).

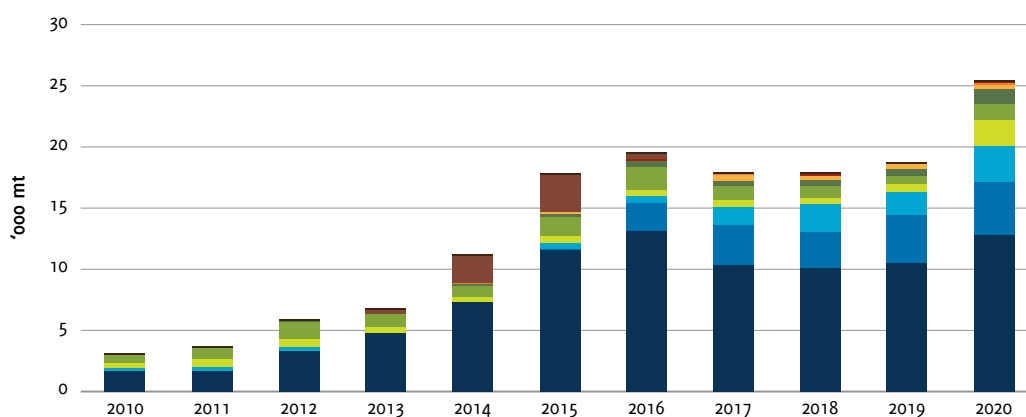


Figure 27. Japan's imports of rolled or flaked oats, by country, 2010–19

Source: ITC



Figure 28. Granola on Japanese supermarket shelves

Australia has dominated the rolled/flaked oat market, exporting an average of 11,155 tonnes of rolled or flaked oats over the last five years, around 61 per cent market share. The import quantity of rolled or flaked oats from Australia, used to make foods such as granola, has remained around 10,000 tonnes for the last three years, after peaking at 13,000 tonnes in 2016. In 2020, COVID-19 increased the number of people working and eating at home. Processed oat imports increased as a result with a leading importer of rolled or flaked oats observing that granola's popularity has contributed to most of the increase.

Australia's competitiveness in rolled oat supply to Japan is in part due its geographic proximity and price compared to other suppliers (Figure 29).

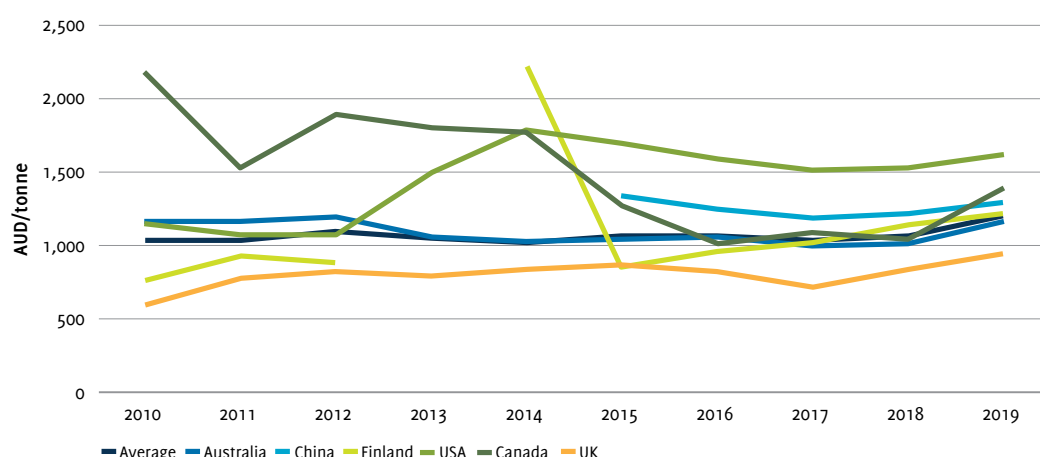


Figure 29. Japan's CIF prices of rolled oats by exporting country

Source: ITC

In addition to its competitive price, Australia is also advantaged through its orientation and interest in the export of oats, compared with the domestic supply focus of Canada and the USA. Both these countries have a large domestic oat market and are less reliant on export markets.

While leading importers expect Australia will continue to be a major supplier of processed oats, some companies have been importing and testing rolled oats from other countries to diversify markets and reduce supply risk in the event of an Australian drought.

COVID19 has also impacted oats in other ways – accessing YouTube and internet articles on oatmeal have increased. Oatmeal has been introduced as a diet food by many youtubers who are keen to exercise and diet. Body builders, athletes and people dieting are also becoming regular consumers of oatmeal. Even so, many Japanese people are not familiar with oats, and that constrains sales growth. For example, Starbucks café had a trial sale of oat milk latte and almond milk latte for a limited time. Oat milk latte is not yet on the regular menu even though oat milk is a suitable substitute for cow's milk.

Another interesting recent development in the Japanese food space, that may have parallels and learnings for future oat product development and marketing, is the growing demand for BARLEYmax™, a high fibre wholegrain (barley) with high levels of resistant starch. BARLEYmax™ was developed in Australia by the Commonwealth Scientific and Industrial Research Organisation (CSIRO). In June 2019, Teijin Limited, a Japanese based global healthcare business reached an agreement to acquire the exclusive sales rights in Asia to BARLEYmax™ from the Healthy Grain Pty Ltd, a CSIRO spin off company. The company had been working with Healthy Grain to develop BARLEYmax™ since 2015 and has expanded domestic sales, conducted clinical trials, developed products by leveraging the special characteristics of various ingredients and implemented marketing to improve recognition (Teijin, 2019).

BARLEYmax™ is now an ingredient for 'onigiri', a very popular rice ball food in Japan (Figure 30). Onigiri is sold in convenience store chains allowing mass distribution, as these stores are located on every corner of Japan and many of them are open 24/7.

Factors likely to have contributed to the success of BARLEYmax™ in Japan include comparison of its dietary fibre content with traditional consumed foods (e.g. barley, burdock and brown rice), collaborative medical research between Australia and Japan evidencing its properties and benefits, highly effective marketing and consideration of the palate of Japanese people.

Japan presents a smaller, but ongoing opportunity, for Australian oats in both feed and food applications.



Figure 30. Rice ball made by mixing edamame (green soybeans) and cream cheese with rice and Super Barley (BARLEYmax™)

## Mexico

Over the past five years Mexico has imported an annual average of 132,000 tonnes of oats, with 2020 being a record import year — over 176,000 tonnes. Canada is the major and most consistent supplier of oats to Mexico. Mexico is Canada's second largest export market (after the USA). Mexico imports smaller volumes of oats from the USA, Australia and Chile (Figure 31).

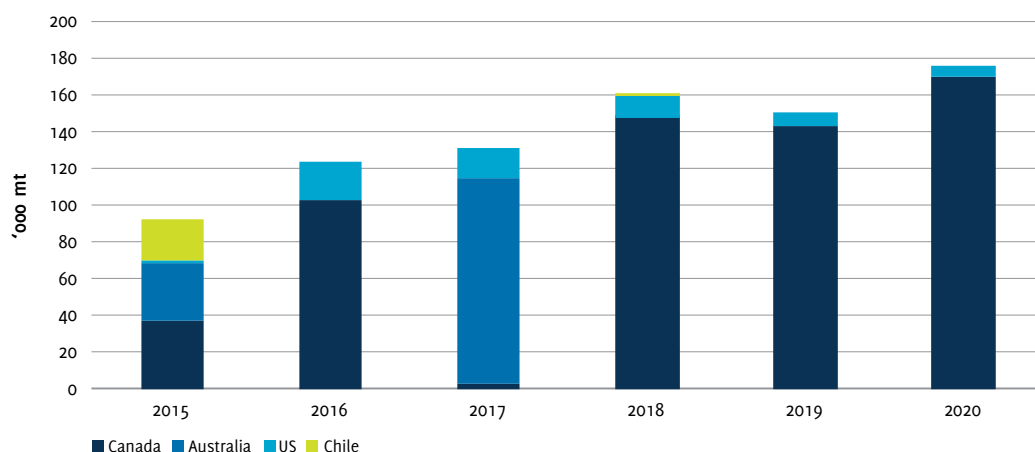


Figure 31. Major exporters of oats to Mexico by country and volume 2015–19

Source: Oatinformation.com and AEGIC

The Prairie Oats Growers Association attribute part of the success for growth in exports of Canadian oats to Mexico to a market development campaign launched in 2015, when Canadian exports to Mexico were around 40,000 tonnes. The campaign, in part, focussed on social media campaigns and cooking contests using oats in Mexican foods (Prairie Oats Growers Association, 2020).

Grupo Vida, Mexico's largest oat manufacturer, has continuously encouraged Canadian farmers to increase oat production and to develop crops that fit current and future consumer trends. The company has strongly advocated against the use of glyphosate and other products that affect consumers' health (White, 2020). Grupo Vida produces oat flakes, cereals, granola, granola bars and oatmeal, and is the market leader of oats packed in bags and granola in Mexico.

With the changing supply dynamics, Australia is currently a spot supplier to the Mexican market, exporting when sufficient volumes are available and when Australia can compete with the closer and more freight cost efficient North American origins. Australia previously supplied Mexico with a significant volume of oats in 2017 when Australia had a high volume of oat production.

Australian oats are likely to be exported to Mexico in 2021. The market remains open to Australia and may warrant more technical engagement to ensure Australia maximises this opportunity.

## India

India produces a small amount of oats and accurate information on oat production in India is not available. India's breeding emphasis is mostly on fodder or feed oats.

Food grade oats are sourced mostly from Australia and to a lesser degree from Ukraine. India's import volumes of oats over the last five years have ranged from 17,500 to 28,500 tonnes (Table 4).

Table 4. Major exporters of oats to India, by country, 2015–19

Exporters	Imported quantity (tonnes)				
	2015	2016	2017	2018	2019
World	17,545	28,436	24,776	19,447	25,898
Australia	12,943	11,162	23,182	17,332	18,549
Ukraine	3,977	17,067	1,594	2,115	6,322
Chile	492	–	–	–	1,026
Canada	133	133	–	–	–

Source: Trade Map

While traditional breakfasts remain favoured, oat food consumption in India is increasing on the back of the expanding breakfast cereal market which has grown at an annual rate of around 18 per cent over the last five years. Cereals, including ready to eat cold cereals such as corn flakes and hot cereals including oats, rolled oats and porridge, offer scope for consumers to change their daily meals away from rice, and in the case of oats, still have a hot breakfast. Oats can also be easily incorporated into muesli and granola with these slowly displacing some fried savoury foods. Functional and digestive biscuits are also popular in India with oats promoted as an ingredient in some digestive biscuit products, albeit oat inclusion is often low.

Entry of multinational oat food manufacturers, domestic oat food production and increased consumer interest in health and food convenience in India, has accelerated oat consumption. Today, the range of whole or partial oat-based products available in India is extensive and includes but is not limited to plain oats, flavoured oats, porridge, granola, muesli, snack bars and biscuits. PepsiCo (Quakers), Nestle, Kellogg's, and many local manufacturers such as Bagrry's and Marico compete for market share.





Oat product manufacturers have developed a range of oat products with flavours and products suited to regional preferences (e.g. masala curry oats) with delivery through improved marketing and distribution systems. For example, Marico Limited, one of India's leading consumer goods companies, offers a diverse range of flavoured oat foods under its Saffola Masala Oats brand, appealing to the Indian consumers' interest in local and international flavours and natural, wholegrain healthy products high in fibre and protein. The oats are often combined with spices and vegetables such as onions, carrots, and greens. Marico Limited has developed an oat vending machine concept so healthy snacks can be available during working hours (Figure 32). The company is also improving the quality of oats through new processing technology for the treatment of oats flakes.



Figure 32. Oat vending machine

Source: Marico Limited Annual Report 2019-20

Indian oat food manufacturers often focus their marketing and promotion activities to Tier 1 cities, cities that are densely populated and that have higher living expenses such as Bengaluru, Chennai, Delhi. After Tier 1 cities, they target Tier 2 cities or regions such as Southern India, where there is a large market for oat products and increasing interest and awareness of healthy diets.

Although the uptake of Australian oats in India has been less than anticipated, India could eventually provide an attractive and large opportunity for Australian oats.

In late 2019 Indian authorities updated their list of prohibited weed seeds for plants and plant products. Australian exporters advise measures in attempts to reach new compliance adds cost and risk to raw oat exports. Most Indian mills can process both raw oats and kiln dried hull off oats.

## South Africa

Although South African oat production averages around 40,000 tonnes annually, production varies upon weather and prices of competing crops, producing 52,000 tonnes in 2020. Around 90 per cent of oats are grown in the Western Cape with most domestic production used for food purposes, with up to 20 per cent being used for feed/seed. The food use of oats is wide with oats used predominantly as a breakfast food, oatmeal for porridge, muesli, granola and a range of snack foods and milks.

Domestic demand for food oats is 50,000–70,000 tonnes annually, making the country a regular but highly variable importer of up to 30,000 tonnes of oats per annum. Most imported oats originate from the EU or Australia, depending on supply and price. Oats are imported tariff free.

Tiger Foods have been a leading supplier of oat products for over a century with their Jungle brand a market leader (Figure 33).



Figure 33. Jungle Oats

Source: [www.jungleoats.co.za](http://www.jungleoats.co.za)

Food start-ups are now marketing oat milk with some companies having a strong focus on sustainability in their advertising.

South Africa exports small quantities of oats, usually up to 2,500 tonnes, mainly within Africa and smaller amounts to Asia.

## Malaysia

Malaysia sources almost all its imported oats from Australia, with imports ranging from 16,000 to 27,000 tonnes in 2016–20 (Table 5).

Table 5. Major exporters of oats to Malaysia, by country, 2016–20

Exporters	Imported quantity (tonnes)				
	2016	2017	2018	2019	2020
World	18,334	27,311	22,450	15,903	25,286
Australia	18,173	27,269	22,391	15,817	25,116
Canada	112		44	82	113

Source: ITC calculations based on Department of Statistics Malaysia.

Federal Oat Mills in Penang, a long-term buyer of Australian oats, market Captain™ Oats (Figure 34) as “sourced from natural premium Australian Oats” and feature an Australian map and the words “100 per cent Australian oats” on their instant oatmeal product packaging.

Quaker Oats have been enlisting celebrity chefs and nutritionists to promote the incorporation of oats in Malaysian-based foods (e.g. oat rice) through TV segments targeted at appealing to Malaysian housewives.



Figure 34. Assorted packs of Captain Oats in the supermarket

## Chile

Oat production in Chile has varied from 385,000 tonnes to more than 700,000 tonnes in recent years. Drought and poor seasonal conditions have impacted the country's 2020 and 2021 oats crops, necessitating imports. Canada supplied Chile with a record high of 150,000 tonnes of oats in 2020, with Chile expected to import a similar or higher volume of oats in 2021, with Canada, Europe and Australia being the likely suppliers.

Chile is the second largest exporter of oat products, after Canada, so its actions influence the global oat complex. Despite its recent need to import raw oats, Chile's export of oat products increased in 2020, reaching record highs of 220,000 tonnes of processed oats, mostly as flakes and oatmeal (Figure 35). Exports are almost exclusively to South American countries including Colombia, Peru, Guatemala and Mexico. Chile has also been increasing exports to several other destinations in recent years, including small volumes of oat products to India, Taiwan, China and Japan.

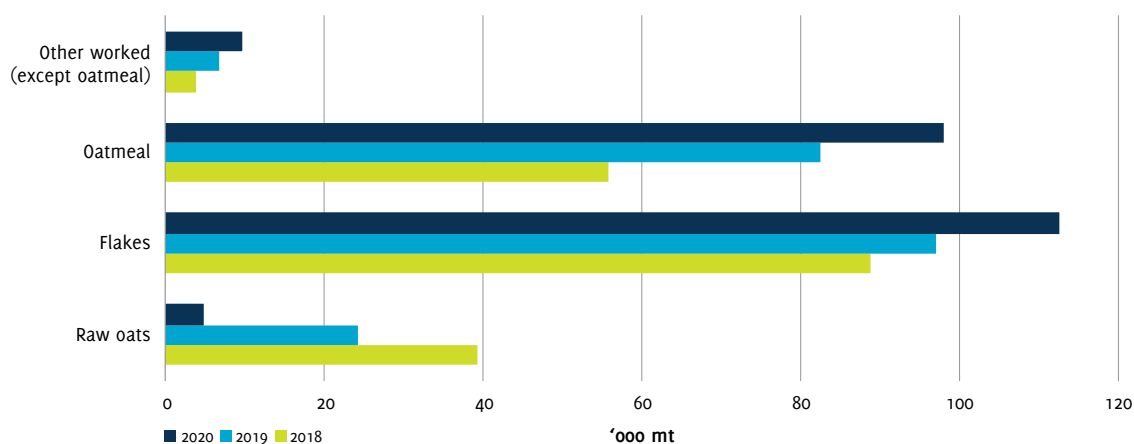


Figure 35. Chile oat and oat product exports

Source: *Oatinformation.com*

Chilean oat breeders, seeking to provide growers with new higher quality oat varieties that meet the international standards for healthy food products, released a higher protein and higher beta-glucan content variety in 2016. Previously one oat variety occupied around 80 per cent of the oat area.

In the longer-term Chile's oat product export growth is expected to remain strong, supported by South American oat product demand.

## Vietnam

Oats are mainly used as a breakfast food for children, a diet product or as a cattle feed in Northern Vietnam. Interest and use of oats in biscuits and oat milk is growing.

Vietnam imports less than 1,000 tonnes of oats annually. Most oats are imported as processed oats as cereal grains, oat milk, oat biscuits, rolled oats, oats flake, etc. The main suppliers include Malaysia, Australia, USA and Canada.

While Vietnamese consumers are often aware of the health benefits of oats, this has not yet resulted in substantial consumption growth.

# Conclusion

The outlook for Australian oats is positive. The future is buoyed by multiple factors including Australia's ability to produce exportable volumes of high-quality oats produced in a dry and natural environment. Australia is likely to remain a key global supplier, with a sound reputation across many export markets. Australian oat producers rely on practices that deliver bright-coloured oats with low moisture, low chemical residues, and freedom from adverse levels of biological contaminants. These same producers are supported by an end point royalty system that incentivises oat breeders to deliver new varieties that are commercially attractive to farmers and favoured by end users.

Heightened health concerns and consumer preferences for natural foods in traditional and emerging oat-consuming countries, will help underpin growth in future demand for oats. Manufacturers of oat products are also likely to increasingly focus on the environmental impacts of oat production and associated supply chains. Australian oat producers, supply chain operators and manufacturers of oaten products are well-placed to address these environmental concerns.

Australia's domestic milling and feed markets are strong and growing and are an additional source of demand for Australian oats. Supporting and developing novel foods based on oats is another opportunity Australia can embrace, as a means of adding value to an already preferred raw material.

The size and nature of the Chinese oat market provides a near term, and at best enduring, opportunity for Australian oat exports. However, lessons from recent agricultural trade experiences with China suggest a diversity of markets should be established by Australia's oat industry, rather than mostly being reliant on Chinese demand.

Australia's major oat competitor Canada will or could soon have improved access to some of Australia's primary oat markets. In the interim, Australia has a window of opportunity to cement its place as a preferred supplier in several existing and potential markets. Australia will benefit from a co-ordinated and well-planned industry approach that makes this happen.



# Acknowledgements

The authors thank Dr Sabori Mitra, Mr Mark Tucek and Dr Nabeen Dulal in AEGIC for their valuable contribution particularly for the Chinese component of this report.

# References

- ABS Australian Bureau of Statistics. See [www.abs.gov.au](http://www.abs.gov.au)
- Hu, X. (2018). Presentation at Shaanxi Normal University.
- Leth, M. (2016). Uncle Toby's — Sustainable Oat Production in Rural Australia.  
See <https://sharedvalue.org.au/wp-content/uploads/2016/01/Nestle-Australia-SVI-CaseStudy-Uncle-Tobys.pdf>
- Marico Limited Website and Annual Reports.  
See <https://marico.com/india/brands/saffola/masala-oats>  
<https://marico.com/page/DigitalReport2019-2020/pdf/Marico%20IR.pdf>
- Media Specialist Association, Malaysia (2014).  
See <http://mma.mymysa.org/?p=2348>
- Oatinformation. See <https://oatinformation.com/>
- Oleson, C. (2020). Spotlight: General Mill's approach to regenerative agriculture.  
See [www.climatecollaborative.com/spotlight\\_gm\\_2020](http://www.climatecollaborative.com/spotlight_gm_2020)
- Prairie Oats Growers Association (2012).  
See <https://poga.ca/news/458-market-development-work-pays-off-for-oats-in-mexico>
- Ren, C. (2016). China Oat & Buckwheat Industry R&D Report (2011–15).
- ScanOat. See <https://scanoats.se>
- Suomen Viljava Oy (2021).  
See [www.suomenviljava.fi/en/blog/2021/03/19/investment-in-oat-mill-in-rauma-will-add-value-for-finnish-oats](http://www.suomenviljava.fi/en/blog/2021/03/19/investment-in-oat-mill-in-rauma-will-add-value-for-finnish-oats)
- Teijin Limited (2019).  
See [www.teijin.com/news/2019/20190613\\_3022.html](http://www.teijin.com/news/2019/20190613_3022.html)
- Trade Map. See [www.trademap.org/Index.aspx](http://www.trademap.org/Index.aspx)
- USDA Foreign Agricultural Service. See [www.fas.usda.gov/data/grain-world-markets-and-trade](http://www.fas.usda.gov/data/grain-world-markets-and-trade)
- White, E. (2020). The Western Producer.  
See [www.producer.com/news/mexican-oat-buyer-has-strict-demands](http://www.producer.com/news/mexican-oat-buyer-has-strict-demands)

# Appendix 1 — GRDC and DPIRD oat projects

## GRDC oat projects

Contract title	Commencement date	Completion date
AEGo0007 — Increasing the competitiveness of oats for export	01/07/2015	31/12/2018
TFCo0002 — Assessment of the value proposition for barley, sorghum and oats Australian growers	06/05/2017	30/06/2018
SBMo0009 — Western GrowNotes for Oats and Barley	12/08/2017	30/10/2017
GLP residue study — Trifluralin residues in oats	28/04/2018	30/06/2020
Agvet R2#010 Grant Agreement — Oats x Grasses and broadleaf weeds — Priority Use	01/07/2017	30/06/2022
SBMo0013-J Wild Oats Tips and Tactics	25/05/2018	31/08/2018
Investigating phenology diversity in germplasm to optimise profitability from April sown oats	01/01/2019	31/03/2021
National Milling Oats Breeding Program	01/03/2021	30/03/2026
Optimising genetic control of oat phenology for Australia	01/07/2020	30/06/2023
Program 1: Identification of novel sources of resistance to Septoria Leaf Blotch and understanding of evolution and virulence of the pathogen	01/07/2020	30/06/2023
Oat genomic resources for breeders and pre-breeders	02/03/2020	30/06/2022

*For further information on these investments please contact*

**Dr Brett Ford, GRDC:**

**Dr Brett Ford**

Manager, Barley and Coarse Grains

Email: [brett.ford@grdc.com.au](mailto:brett.ford@grdc.com.au)

Website: [www.grdc.com.au](http://www.grdc.com.au)

## DPIRD and AEGIC oat investment

DPIRD has recently provided two years of funding to AEGIC for a project titled *Growing opportunities for Western Australian oats*. This project aims to develop a path to market for new oat-based foods; deliver industry relevant new product development (NPD) and provide technical support to help commercialise new oat-based food products. This will be achieved by forming technical collaborations with interested food processing companies and assisting them to successfully commercialise new oat food products by sharing our know-how on oat rice and oat noodles.



## Perth

3 Baron-Hay Court  
South Perth  
Western Australia 6151  
P: +61 (08) 6168 9900  
E: [admin@aegic.org.au](mailto:admin@aegic.org.au)

## Sydney

1 Rivett Road  
Riverside Corporate Park  
North Ryde  
New South Wales 2113  
PO Box 711  
North Ryde  
NSW 1670, Australia  
P: +61 (02) 8025 3200

## [aegic.org.au](http://aegic.org.au)

 AEGIC  
 [Australianexportgrains  
innovationcentre](https://www.facebook.com/Australianexportgrainsinnovationcentre)

All contents copyright ©AEGIC. All rights reserved.

The related bodies corporate, directors and employees of AEGIC accept no liability whatsoever for any injury, loss, claim, damage, incidental or consequential damage, arising out of, or in any way connected with, the use of any information, or any, error, omission or defect in the information contained in this publication. Whilst every care has been taken in the preparation of this publication AEGIC accepts no liability for the accuracy of the information supplied.

Version: Revised October 2021



AEGIC is an initiative of the Western Australian State Government  
and Grains Research & Development Corporation

