



Japan - oats for hay

A report to the Processed Oats Partnership (POP) Program

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Executive summary

Japan is an important market for Australian and Western Australian oat producers. In addition to buying Australian oats for food and racehorse feed, the country annually buys around 500,000 tonnes of oaten hay from Australia. The hay is used in the dairy and beef cattle industries.

Japan's baled hay imports have increased over time, in part, due to global improvements in baling technology, lower container freight costs and favourable exchange rates resulting in logistical and price efficiencies; also, on the back of growing use within the Japanese feed industry.

While Japan purchases most of its hay requirements from the USA and Canada, Australian oaten hay is competitive in price and well regarded in quality over US and Canadian Timothy Hay and US Sudan Grass. Japan also imports a variety of roughage products, such as beet pulp pellets and baled straw.

The Japanese feed industry is faced with numerous challenges which will impact Australian oaten hay exports over time. Government policy and social changes, including a declining population, may result in less demand for oaten hay over time.

Considerations for POP

Oaten hay is an important part of the Australian and Western Australian oat industry. This report is provided to highlight part of the existing market opportunity, using Japan as a major importer. The extent of further work in this area through the POP needs discussion.

Key findings

- Japan imports baled hay, including oaten hay from Australia and a wide range of “roughage” products for use in animal feeds.
- Today baled hay imports are relatively stable at around 2 million tonnes per annum.
- Australian hay imports into Japan (most of the imports are oaten hay) increased on the back of growth in the baled hay market. In 2022, Australian oaten hay exports to Japan exceeded 500,000 tonnes with a market share of over 25%.
- The versatility and value of Australian oat hay is well regarded in Japan.
- The Australian oaten hay industry has, however, been impacted by a decline in baled hay imports to Japan from January 2023 to date.
- Feed manufacturers and cattle producers are continuously impacted by external influences, including government and social factors requiring new thinking within the industry (e.g. reducing milk production and examining new ways of delivering feed to Japan's farmers considering an expected shortage of truck drivers in the feed industry).

Introduction

To support the growth of the oat industry in Western Australia, both in value and volume, over the next 20 years, the State Government is providing \$10.12m to the Western Australian Agricultural Authority (WAAA) to manage the industry-led Processed Oats Partnership (POP) Program.

This report is provided as a component of Output 2 of the AEGIC based POP activities within the project titled "Economic lens to capture increased market value for oats through industry innovation and better targeted industry investment". The purpose of the project is to provide the POP and in turn Western Australian industry with a better understanding of the rates of growth in demand for oats and oat products in key and emerging markets. This knowledge will give useful market intelligence to oat marketers, oat producers, and oat processors to aid their strategic decision-making.

Baled hay and roughage imports

Japan imports baled hay and a variety of "roughage" products for animal feed. The roughage products include baled straw, alfalfa hay cubes, alfalfa pellets, beet pulp pellets and cotton seed. Baled hay imports have stabilised around 2 million tonnes with roughage imports around 3 million tonnes (Figures 1 and 2).

Japan's baled hay imports increased markedly from the 1980s due to a growing feed industry, lower container ocean freight pricing and impact and improvements in packing (e.g. the advent of double compressing machines allowed containers to be packed with a greater volume of hay).

Another factor influencing the rapid import growth was a sharp appreciation of the Japanese yen from the mid-1980s. Big farmers/farming enterprises expanded their size/cattle numbers with dairy and beef industries becoming more reliant on purchased feeds. It was more convenient to purchase imported baled hay rather than producing self-supplied feed/roughage.

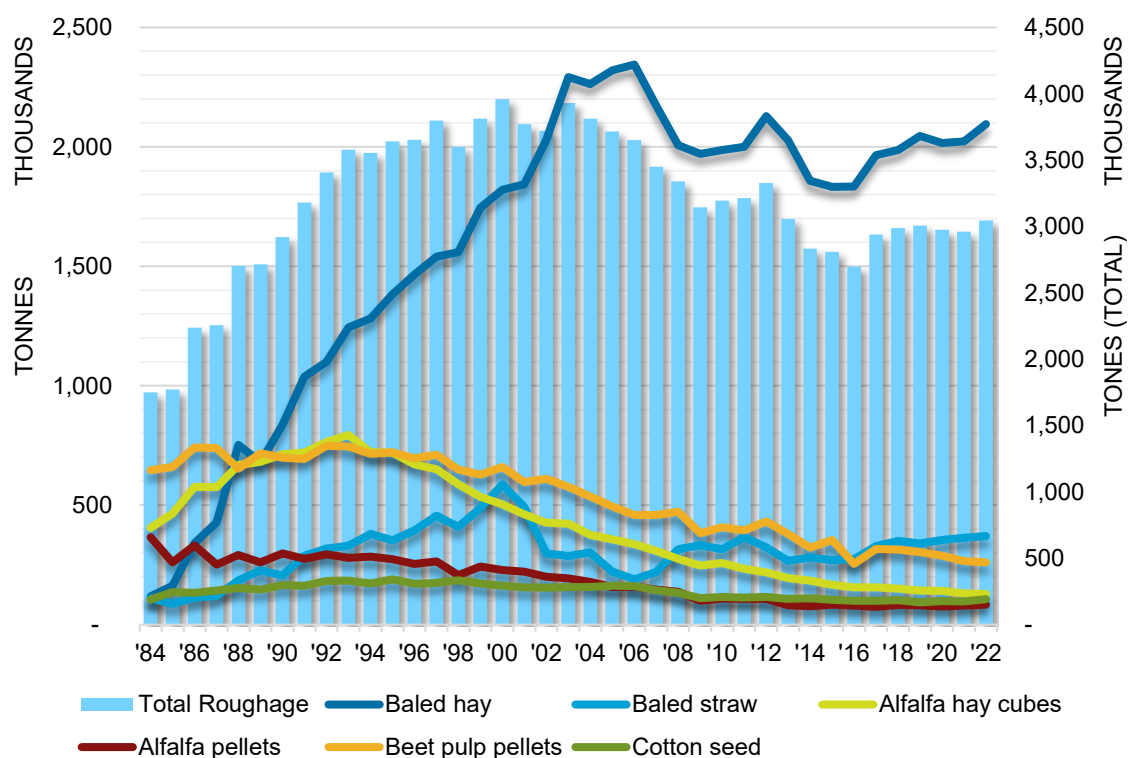


Figure 1: Japan's hay and roughage imports by type 1984-2022 (tonnes)

Source: Industry source

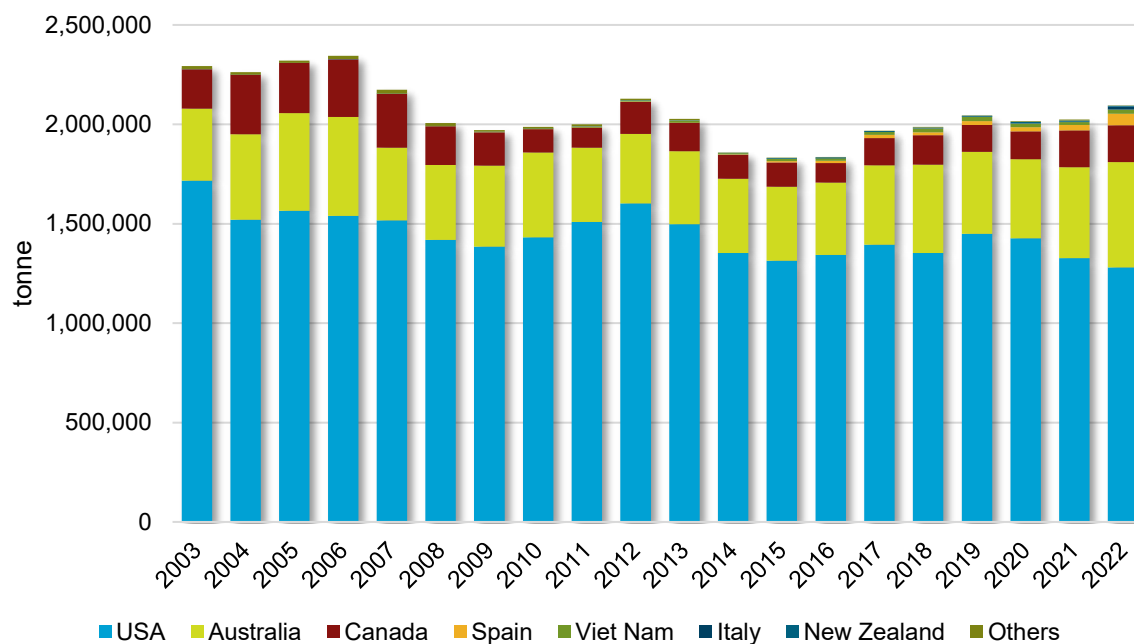


Figure 2: Japan's hay imports by country 2003-2022 (tonnes)

Source: International Trade Centre (ITC)

Australian share of hay imports

Japan imports a wide range of hay and grasses, mostly from the USA and Canada (Figure 3). Hay imports from Australia are mostly oaten hay. In 2022, Australian oaten hay exports to Japan exceeded 500,000 tonnes with a market share of over 25% of total hay imports.

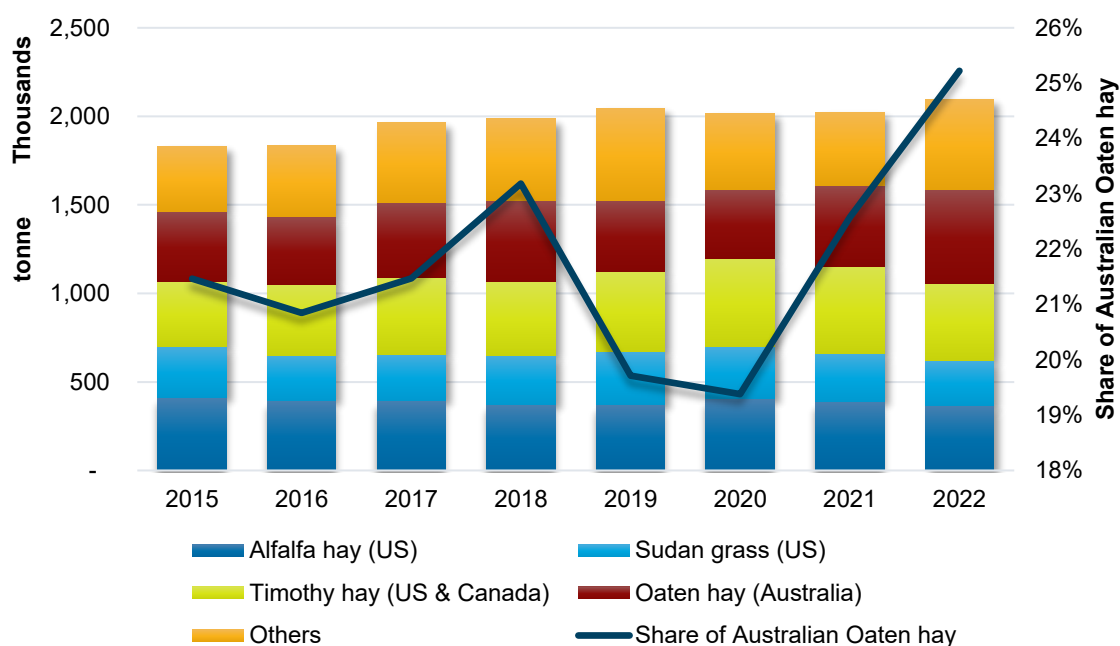


Figure 3: Japan's hay imports by type 2015-2022 (tonnes)

Source: Total: ITC calculations based on Japanese Ministry of Finance statistics (HS Code: 121490090). Hay imports by type: Plant Protection Station, MAFF

As evident in Figure 4 below Japan remains a major target for Australian oaten hay exports. South Korea and China are also key Australian markets.

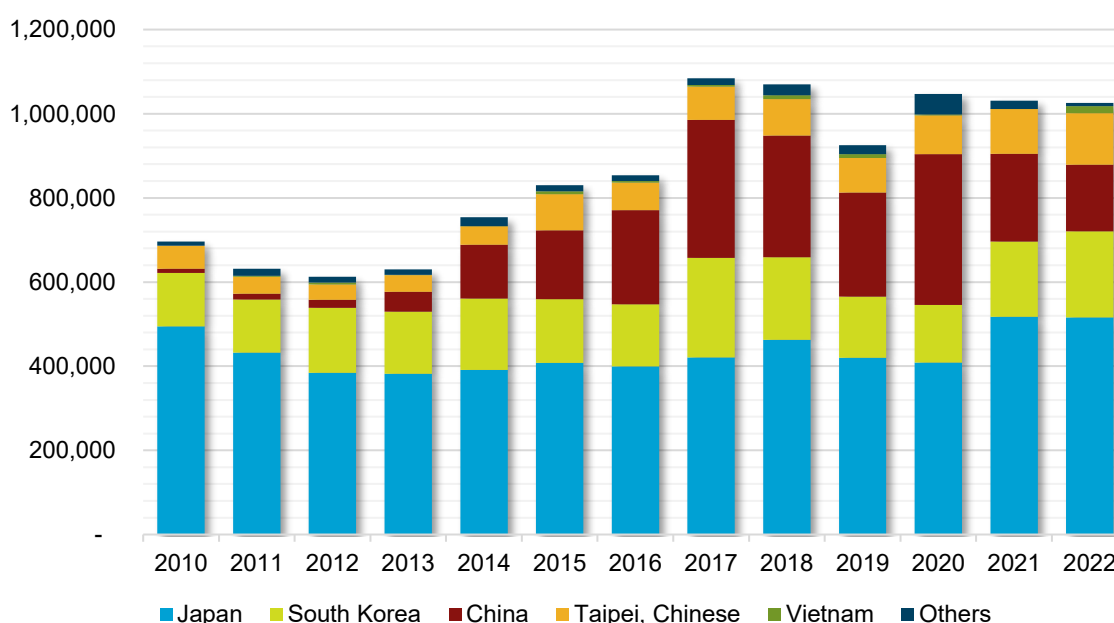


Figure 4: Australian hay and chaff exports (excluding lucerne) 2010-2022 (tonnes)

Source: ITC (HS Code:12149019)

Total baled hay imports during the first seven months of 2023 has declined by approximately 30% compared with the corresponding period a year earlier because of the following events:

- US baled hay prices skyrocketed based on grain price hikes resulting from the Russian invasion of Ukraine and also a strong domestic milk price and consumer demand in the United States. US timothy hay price increased by US\$100-120/tonne in 2022 crop from 2020 prices. The prices for Sudan and Bermuda grass soared more than US timothy hay price (jumped up more than US\$150).
- In 2021-2022 there was huge logistical disruption on container vessel Pacific westbound route from North America to North Asia which caused enormous trouble in the shipments of baled hay from North America.
- The exchange rate, which was around 108 Japanese yen in July 2020 had fallen to around 140 Japanese yen by July 2022, so Japanese farmers naturally gave up on purchasing expensive imported hay. The decrease in imported baled hay has been partially replaced by compound feed, which is subsidised by the government.

Certainly, the first two things helped Australian oaten hay increase the market share for the last couple of years, but the shrink of the total baled hay market has also affected this year's exports from Australia and oaten hay exports to Japan for January to July 2023 were down by 20% (Table 1).

Table 1: Japan's baled hay imports (Jan to July 2023)

	For January to July		
	2023	2022	YoY (%)
Alfalfa Hay	145,594	256,617	56.7%
Sudan Grass	102,268	170,554	60.0%
Timothy Hay / Canadian	73,303	102,084	71.8%
Timothy Hay / US	131,950	183,600	71.9%
Ryegrass Straw	91,249	113,387	80.5%
Fescue Straw	32,111	40,560	79.2%
Bermuda Grass / Straw	29,589	58,973	50.2%
Oaten Hay / Australia	261,981	324,706	80.7%
Others (Klein Grass)	35,874	58,085	61.8%
G. TTL	903,919	1,308,566	69.1%

- The exchange rate, which was around 108 Japanese yen in July 2020 had fallen to around 140 Japanese yen by July 2022, so Japanese farmers naturally gave up on purchasing expensive imported hay. The decrease in imported baled hay has been partially replaced by compound feed, which is subsidised by the government.
- A major hay importer predicted the current import pace/volume will be maintained or the imports might decrease for the rest of this year in a pessimistic scenario. If the current exchange rate of 140 to 150 yen/US dollar is maintained total imports of baled hay in 2023 might be 1.3 to 1.5 million tonnes.
- It is also believed that most of the roughage requirements have been replaced by domestically produced hay, rice straw, feed rice, corn silage, eco-feed and other local products. The cultivation of rice for feed has been subsidised for some time, but from the fiscal year of 2022 the subsidies to cover the logistics transportation costs of domestically produced feed have been included in the budget with a support program implemented. The Ministry of Agriculture, Forestry and Fisheries (MAFF), Japan is aiming for 100% self-sufficiency in domestic roughage. It is expected that the

government will continue to provide growers with generous support for increasing domestic roughage production.

- Over time Japan's baled hay imports are expected to decline gradually because of a decreasing birthrate and aging of the population. The population is forecast to decline from 120.7 million persons in 2015 to 119.0 million persons in 2040.

Australian oaten hay competitive position

The yield of oaten hay in Australia is around 5 to 7 tonnes per hectare compared to oat grain at around 1.5-2.0 tonnes/ha. Harvest and windrow/baling of oaten hay typically occurs late September to December depending on location and weather. Although the possibility of rain damage in oaten hay is higher than in oat production it remains a good option for some growers. A grower in York, WA advised the price of hay to the grower, if rain damaged, can be reduced to A\$80-280 per tonne.

Major Japanese importers of Australian oaten hay speak favourably of its quality and the broader Australian association but also offer some words of caution, as documented below.

- Australian oaten hay is competitive in price and quality over US and Canadian Timothy Hay and US Sudan Grass.
- Versatility, palatability, and price stability have helped oaten hay significantly increase its market share over the past three years.
- No fumigation is required when Australian oaten hay is imported into Japan.
- Australia has an oaten hay grading standard based on analytical values, which is unique in the hay industry. Japanese importers appreciate the system advising that regardless of the region (WA, SA or VIC), in which the oaten hay is produced, the difference in the quality is small. Although the analytical test results and the appearance in the quality of Australian oat hay do not necessarily match, the analysis contributes to the overall quality judgement. The system is trustworthy and an achievement for the Australian oaten hay industry. As farms become larger the use of mixers at farm site will be more common and the feed value will be evaluated precisely, more emphasis will be placed on the analysis of respective hay and its nutritious value.
- Apart from a good appearance, two of the best features of Australian oaten hay are its high palatability based on its high sugar content and its fast digestion rate. Australian oaten hay is graded on (1) "sugar content" and (2) "softness of leaves and stems based on ADF and NDF which are edibility = fibre analysis values" - the more edible and sweeter hay, the higher rank in the quality classification.
- Oaten hay is versatile. It can meet a wide range of feeding requirements, such as bulk feeding for dairy cow, fibre source for beef cattle and calves. In contrast alfalfa and sudan grass are almost exclusively used for dairy cow. Rice straw and straw-based products can be fed to beef cattle and calves as a fibre source, but there isn't much point in feeding them to dairy cows. Oaten hay will become more convenient for use as roughage particularly as the feed supply labour force decreases over time.

- At times, the fast digestion rate of oaten hay necessitates feeding with other roughage. If it were possible for oaten hay to maintain the rumen retention for a little longer without losing palatability or softness, there wouldn't be a need to mix oaten hay with other roughage, which may help in light of the future work force shortage.
- Australia has more stones contamination in the harvested bales of oaten hay than in other regions. Every year, Australian oaten hay causes damage to machines that cut the hay before feeding and also the mixers that mix the hay with other feed at farm level. As larger cattle producers in Japan use a shovel car to place feeds, including oaten hay, into their mixers, contaminations with stones can be a big issue.
- At times container freight rates from eastern Australian ports are more competitive than Western Australia. Container freight rates in the westbound route used for exports of baled hay produced from North American Pacific Southwest (Los Angeles/Long Beach to Japan Port) have returned to pre-COVID19 levels and are now down to around US\$200 (A\$320) per 40-foot container.

Oaten hay end use and cattle production

- Oaten hay is used for beef and dairy cattle. Oaten hay and other types of hay are widely used in Kyushu Island, a major production base for beef cattle. In other areas, including Hokkaido, oaten hay is mostly used for dairy cow.
- While the number of dairy and beef cattle raised in Japan has stabilised at around 1.3 million heads for dairy and 2.5 million heads for beef for over a decade, the number of farms in both industries has been declining at an annual rate of 3-5% for the last 10 years. Small and medium-sized farmers are expanding farm size. A rapid change in the numbers of both beef and dairy cow in Japan is in part due to government policy protecting Japanese domestic agriculture and food security.
- The business environment for dairy and livestock farming is increasingly challenged by the availability and price of feed, farmer exits, successor issue/aging of the labour force, labour shortage, expansion of business loan from banks and environmental issues (e.g. treatment of livestock excreta) and other factors described below.
- Over time, a reduction in the labour force population (15 to 60 years old) will decrease food and feed demand. A foreseeable shortage of truck drivers who play an important role in the feed distribution to each grower could also present problems. The feed industry, including the compound feed and roughage industry, are considering how they should transform their business in response to social changes in 2030 and beyond.
- Dairy farming has long suffered from oversupply of raw milk exacerbated by the drop in demand of milk and dairy products due to a sluggish food service industry in Japan. Domestic dairy products such as skim milk powder are not internationally competitive, with inventory at record high levels. This imbalance creates a gap between the demand/consumption situation and the national program aimed at strengthening the livestock industry - the livestock farming cluster program promoting expansion of business size*. As a result, policies are currently being adopted to limit raw milk production. Dairy farmers recently decided on a 3% reduction with each

dairy farmer requested to reduce milk production. This production adjustment is pouring salt on a wound for dairy farmers. The domestic milk price has been supported by milk consumption in a school lunch program - this will reduce over time as there are fewer children.

Farmers perspectives

The Japan Dairy Council conducted a survey on dairy farm management across 157 dairy farmers in Japan with results published March 2022 (Figures 5 and 6). Business conditions deteriorated due to increases in feed prices, fuel costs, and utility costs as well as a decline in calf sales prices, with 84.7% of dairy farms losing money. With no prospects for improvement many farmers are considering quitting farming, but they continue to operate to maintain livelihoods, repay loans, and maintain Japan's food base.

Q. What are the factors that are hurting your dairy farm management? (multiple choice)

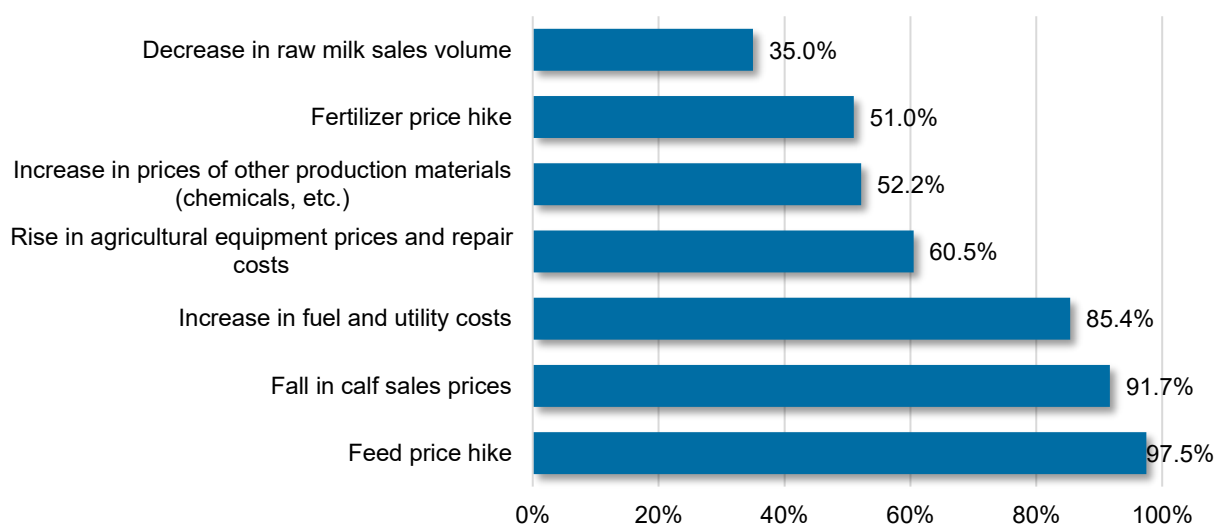


Figure 5: Japan dairy council survey result, March 2022

Source: Japan Dairy Council

Q. Do you ever think about quitting farming while continuing to manage your dairy farm?
(Consider quitting farming: 58.0%)

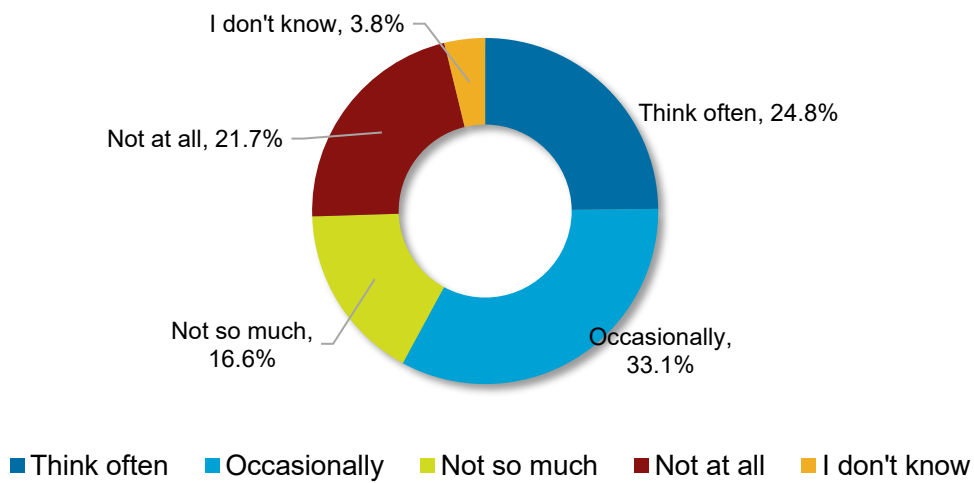


Figure 6: Japan dairy council survey result, March 2022

Source: Japan Dairy Council

*The livestock farming cluster program: A livestock cluster program is a system in which livestock farmers and related businesses in the region cooperate and gather to realise highly profitable livestock farming throughout the region. Governments are promoting the construction of this livestock cluster nationwide.

Appendix 1: Japan's baled imports

	For January to July							
	2023	2022	2021	5 Yr Ave to 2022	YoY Change	Comparison to the past 5 Yr Ave	YoY: 2023/2022 (%)	Comparison to the past 5 Yr Ave (%)
	a	b	c	d	e=a-b	f=a-d	g=a/b	h=a/d
Alfalfa Hay	145,594	256,617	257,513	252,835	-111,023	-107,240	56.7%	57.6%
Sudan Grass	102,268	170,554	183,683	175,736	-68,286	-73,468	60.0%	58.2%
Timothy Hay / Canadian	73,303	102,084	100,593	86,436	-28,781	-13,133	71.8%	84.8%
Timothy Hay / US	131,950	183,600	214,998	202,948	-51,650	-70,997	71.9%	65.0%
Ryegrass Straw	91,249	113,387	103,482	105,087	-22,138	-13,838	80.5%	86.8%
Fescue Straw	32,111	40,560	31,516	32,681	-8,449	-570	79.2%	98.3%
Bermuda Grass / Straw	29,589	58,973	52,014	52,674	-29,384	-23,085	50.2%	56.2%
Oaten Hay / Australia	261,981	324,706	275,286	273,967	-62,725	-11,986	80.7%	95.6%
Others (Klein Grass)	35,874	58,085	42,470	45,062	-22,211	-9,188	61.8%	79.6%
G. TTL	903,919	1,308,566	1,261,554	1,227,427	-404,647	-323,508	69.1%	73.6%