

EXPANDING MILLING WHEAT PRODUCTION IN NZ

Increasing the area of milling wheat production in Aotearoa, New Zealand has a number of potential benefits, including food security and reduced methane and nitrous oxide emissions from growing wheat on land currently exclusively used for livestock production. However, the devil is, as they say, in the detail.

This summary document covers the key, high-level findings of “**Market forces or market failure? An analysis into the opportunity for expanded milling wheat production in New Zealand**”, one of a series of reports prepared for the New Zealand Agricultural Greenhouse Gas Research Centre (NZAGRC).

These reports examine potentially viable diverse land uses in New Zealand that could provide alternatives to the largely monoculture and ruminant-dominated pastoral agriculture systems across our landscapes at a more expansive farm systems perspective.

How much milling wheat does NZ produce?

Currently New Zealand produces approximately 400,000 tonnes of wheat, of which on average 100,000 tonne is milling wheat.

Despite our growing conditions being highly suited for wheat, New Zealand imports approximately 70% (270,000 tonnes) of its grain requirements from Australia.

Domestic consumption of bread and other wheat products in New Zealand could be met by domestic wheat production, but reliable supply of and demand for domestic grain in the market drives industry success.

Most milling wheat is currently grown in Canterbury but the Wairarapa, Manawatū-Whanganui and Hawkes Bay are also suitable for milling wheat production and could support an expansion of milling wheat planting.

Benefits for growing milling wheat

An arable crop such as milling wheat readily fits a rotational pasture-crop cycle and can be integrated into farm systems for pasture renovation, decreasing methane production and provide an alternative income stream.

Diversification of farm systems reduces financial risk, with additional ecosystem and environmental benefits. There are clear opportunities to incorporate milling wheat into other existing farm systems. By-products such as straw provide additional feed source or biofuel possibilities.

What's stopping us producing more?

Most often arable crops are outcompeted for land use based on profitability, and milling wheat is no exception.

There are several challenges associated with expanding the volume of milling wheat grown in New Zealand.

To support expanded domestic production the farm gate price needs to be:

- sufficiently high for the milling wheat to compete with alternative land uses under the yield expectations of the location and account for the integration of this crop into existing farm systems.
- sufficiently low to allow domestic supply to be competitive with (or the preferred option over) imported Australian grain for the domestic mills.
- sufficiently stable to justify the scale required and capital investment a farmer needs to make into the plant and equipment necessary to support production

There are numerous factors that influence these three key pillars, but two appear the most significant, depending on the location of the potential domestic production.

Competing with Australian imports

The yield potential and existing harvest and storage infrastructure in the South Island make this area the logical location in which to expand production, but the cost of transporting grain to the North Island appears to have been prohibitive.

Despite this, in the current environment the price to transport grain from Christchurch to Auckland at \$105/t is sufficient to make South Island wheat at a \$550/t farm gate price competitive with that from Australia. However, at the price level that had prevailed in earlier years for imported grain (say \$450/t), South Island produced grain would still not have been competitive with these imports even if transport was free.

While there is work being undertaken on examining the opportunities to extract efficiencies within the domestic transport network, a sustained increase in global (and therefore Australian) grain prices is ultimately required to create the market environment where mills will commit to contracts with South Island growers that work for both parties after accounting for domestic freight.

Competing financially with other land uses

While there is likely to be suitable areas to grow milling wheat in the North Island, the lower expected average yields (8 t/ha) relative to the South Island (10 t/ha) significantly reduce the expected profitability of this enterprise, even with a premium for their closer location to their customer mills. As a result, growing milling wheat in the North Island struggles to be competitive with the livestock enterprises it might supplant or the alternative arable crops that could be used to diversify exclusively livestock systems (such as growing maize for silage).

Even when considering the expected financial impact of pricing methane (and nitrous oxide) emissions at the farm level, milling wheat in the North Island seems unable to outperform the lamb or bull beef finishing enterprises it could replace at grain yields less than 10 t/ha and is not even close to being competitive with pastoral dairying.

Unless North Island grain yields could reliably achieve 10 t/ha, the investment in post-harvest infrastructure required to support expansion of the industry into the North Island is a moot issue and it seems unlikely that significant areas of milling wheat would be grown in the North Island.

From a true food [nutrition] security point of view, New Zealand would seem to have an annual deficit of as much as 30,000 ha of milling wheat. While wheat from Australia remains available to import, the farm gate price for milling wheat in the South Island only needs to be \$110/t lower than the landed price of wheat from Australia (based on current domestic freight prices) to be competitive at the mill. Whether this price is sufficiently high enough to deliver the volumes required by the mills is not clear. This pre-condition is more or less met by current market conditions, but domestic production in 2022 is still only going to deliver 30% of expected annual requirements.

This suggests a much higher price, potentially accompanied by more favourable contract terms, would be required to encourage more area to be planted. This situation would also be supportive of North Island expansion, but the improvement in grain yields under North Island conditions is the primary precursor of this occurring.

Summary

The observed limits in the expansion in the quantity of milling wheat grown in New Zealand seem to be evidence of market forces working as they should, at least from the perspective of delivering cost effective milling wheat to New Zealand domestic consumers.

The current situation seems unlikely to change until a combination of the following make the domestic production of milling wheat a substantively more profitable land use than its current alternatives:

- improved yield potential in the North Island.
- a structural reduction in access to Australian grain.
- increases in the efficiency of the domestic internal transport networks.
- a significant imposition from the cost of climate change externalities on pastoral farming.

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