

Growing More Grain: Impacts & Opportunities for Dairy Farmers

New Zealand's livestock sectors are reliant on imported grain and PKE. Recently completed research asks whether growing more grain in New Zealand is a viable approach for farmers.



Weather Impacts
Climate change impacting grain production



Geopolitical Instability
Unpredictable supply shocks



Bioethanol Production
6x higher than in 2000



National Stockpiling
70% of global maize held in China



Shipping & Logistics
Shipping price increases



PKE Supply
Stable, but impacted by palm oil demand

New Zealand imports nearly twice as much livestock feed as we grow domestically and recent record prices for imported feed have put this reliance on imported grain and PKE under the microscope.

[Recently completed research](#) shows that growing more grain domestically is a viable option to reduce risk associated with reliance on imported grain, and comes with wider benefits to farming systems.

The comprehensive [report from AgFirst](#) modelled a range of scenarios with different yield, cost, livestock, and supply situations to review the effects of converting a proportion of pasture into supplementary feed grain crops. They found potential positive impacts for farm profitability, greenhouse gas emissions and nitrogen leaching.

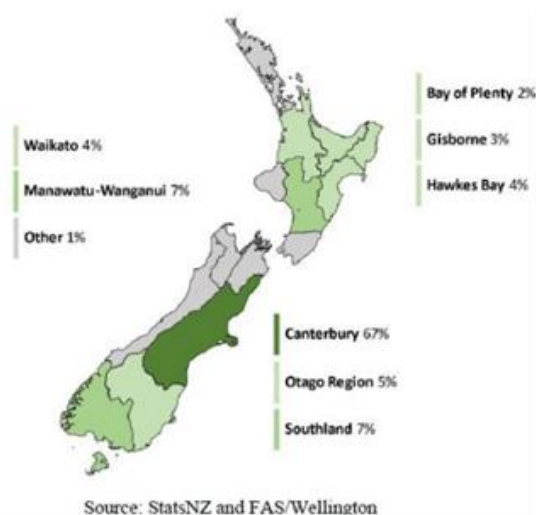
"We ran multiple scenarios with imported, local, and a mix of imported and local feed. When compared to the base model, reducing stocking rate and growing all feed on-farm resulted in substantially lower feed costs and 5%–14% lower milk production. Farm profit was higher in the three North Island regions, the same in Canterbury and lower in our Southland scenario," says report co-author Raewyn Densley.

Capacity for growth

There is also capacity to grow yields. While local grain yields are high, there is a significant gap between top and average producers and it is likely that growers could increase yields by fine-tuning their management practices. Aotearoa has an abundance of land suitable for growing grain and existing infrastructure for processing that grain.

"Right now, importers told us that it is cheaper to move grain from Australia to New Zealand than to move it from the South Island to the North Island. As we increase our national grain production, we would expect to also grow investment in grain processing and infrastructure," says Densley.

Grain production by region in New Zealand, 2022



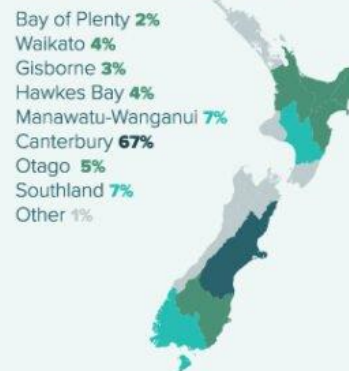
New Zealand is Reliant on Imported Feed

Aotearoa's livestock sectors are dependent on imported grain & PKE

Who uses the imported feed?



Grain production by region



PKE in Dairy Systems



Predicted demand



STATE OF GRAIN

Opportunity for whenua Māori

Aligned with the strong North Island demand, growing more grain, coupled with a vertically integrated animal feed business presents a particularly attractive opportunity for underutilised whenua in Māori ownership.

Of 1.47 million hectares of Māori freehold land in New Zealand, 61% do not have a management structure and are frequently leased out for farming, bringing minimal returns to Māori landowners.

“We worked with representatives from four Māori land blocks in Waikato/King Country. There was a lot of interest in how growing grain for local markets aligns with the values of te ao Māori,” says Densley.

“Modelling for these four blocks showed growing maize rather than leasing land out to third-party farmers increased net profit for landowners by 67–212%, representing a transformational opportunity for these hapū.”

Why do we need to act?

The report presents an in-depth analysis of the current global market for grain, predicted trends, and the implications for the dairy and poultry sectors.

"Globally, grain stocks are under pressure. Demand is high, particularly from China and for non-feed uses such as ethanol, and we've seen the supply of grain badly affected by weather events, ongoing shipping constraints, and geopolitical issues," Densley says.

PKE, which represents 8% of total dairy feed (including pasture) in New Zealand, is relatively stable but changing demand for palm oil and adverse weather could also result in reductions in supply, with significant implications.

Six Risk Factors for the Supply of Imported Feed

Six potential risks to supply have serious implications for farmers using imported feed in the future



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“The risk for farmers is two-fold. First, we’re expecting higher imported feed prices which will reduce profitability, and second, we currently import enough PKE to meet the total feed requirement of around 8% of the nation’s dairy cows and grain for a large proportion of poultry. A shortage could ultimately mean farmers would need to destock,” says Densley.

The risk won’t go away any time soon. New Zealand’s demand for feed is predicted to continue to grow, especially given the new winter grazing regulations and nitrogen cap. Growing more feed domestically is a viable option for reducing this reliance.

Implications for NZ's Livestock Farmers

1. Impact of Supply Shortages

Feed importers are confident of future supplies, but the implications of unexpected shortages are severe



Supply constraints would cause high prices



Poultry is critically exposed
Shortages would severely curtail production



Dairy cows would be culled
If no imported feed is available up to 11% of the national herd would need to be culled

2. Impact of Cost Increases

Supplementary feed can increase yields and returns, but if prices increase, importing feed may be less viable

Example:

Supplementary feed to milk solids conversion = 100 g MS/kg DM fed
Milk solids price (payout to farmers) = \$7/kg
Return generated on each kg of supplementary feed = \$0.70

Imported Concentrate Cost	Return after feed cost
\$0.50/kg DM (\$500/tDM)	\$0.20
\$0.60/kg DM (\$600/tDM)	\$0.10



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Where to next?

To increase our resilience to global grain market price and supply challenges, Aotearoa New Zealand needs to encourage the transition of suitable land into grain production, and to promote the economic and environmental advantage of growing grain to targeted landowners. In particular, there is a significant opportunity to support Māori landowners to identify the opportunity to grow grain on their whenua.

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Additional information:

- [Impact of Imported Feed Shortages](#) project page
- [State of Grain: Impacts & risks for dairy farmers](#) infographic
- [Implications of global price and supply of supplementary feeds on the New Zealand agricultural sector](#) report

Date: 13 February 2024

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