



Sowing future seeds

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A close-up, low-angle shot of vibrant green grass blades in the foreground, with a range of mountains visible in the background under a clear blue sky.

# SCIENCE PERFORMS

Helping farmers address climate change

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For more information  
[germinal.co.nz](http://germinal.co.nz)

**New Zealand farmers are facing their biggest challenge yet – to continue farming efficiently and profitably, while simultaneously increasing their sustainability and reducing their environmental impact.**

During the last two decades the productivity of agriculture in New Zealand has increased significantly. This has put considerable pressure on fresh water, the most valuable of our natural resources and a national taonga.

Increasing concern at the state of water in New Zealand has led to significant changes through the National Policy Statement for Freshwater Management. The Te Mana o te Wai framework has also been strengthened with a specific hierarchy of obligations.

Alongside these changes, New Zealand is faced with the continuing challenge of producing agricultural goods for domestic consumption and exports at scale, while finding ways to both mitigate and adapt to the significant effects of climate change.



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# REDUCING EMISSIONS FROM AGRICULTURAL PRODUCTION

As the New Zealand government is well aware, half our emissions come from agriculture and livestock. The main agricultural greenhouse gases are methane and nitrous oxide. Methane is produced by ruminants (e.g. cows and sheep) by naturally present microbes that live in the rumen (stomach) of the animal. Nitrous oxide is emitted when urine, faeces and fertilisers are broken down in the soil.

**Put simply, grazing animals are highly inefficient when it comes to converting plant protein into milk or meat. Only about 25% of plant protein is turned into animal protein, with the rest not just wasted, but excreted as harmful components such as ammonia and methane.**

**"Such a considerable challenge calls for uniting the best in New Zealand and international expertise and experience."**

To enable better capture of plant protein, the microbes in the stomach of a ruminant animal must work harder, and to do this they need an energy source – sugar.

High Sugar (soluble carbohydrate) Grasses (exclusive to Germinal) are a means of providing that sugar in synchrony with the plant protein. Numerous trials show Germinal's 'Aber' brand of High Sugar Grasses always produce an increase in protein capture and a reduction in ammonia emissions. Animal performance also improves, with higher milk productivity and significant liveweight gains over that seen from standard pastures.

Germinal seeks to mitigate the environmental impact of grazing animal farming through its exclusive research and seed breeding partnership with the Institute of Biological, Environmental and Rural Sciences (IBERS), based in Wales, UK.

**"This collaboration has led to ground-breaking research and world leading advances in plant science."**

It supports farmers to sustainably balance increasing productivity and profitability, while reducing their environmental impact.

Germinal's unique High Sugar Grasses are one of the most significant introductions in agricultural plant breeding in recent years. By increasing the level of soluble carbohydrate we have increased animal production from grass and at the same time reduced emissions from grazing animals.

**"This breakthrough has created a win-win solution for farmers, New Zealand's economy and the environment."**



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# SUCCESSFUL COLLABORATION YIELDS GREAT RESULTS

The first of these grasses was named AberDart and was introduced in 1999 as the world's first High Sugar Grass. Since then, more advanced varieties of Germinal's High Sugar Grasses and clovers have been developed in our relationship with IBERS, delivering superior pasture quality, persistence and digestibility in New Zealand and around the world.

Our High Sugar Grasses have been recognised with several international awards, including the UK Biotechnology and Biological Sciences Research Council (BBRSC) Excellence with Impact Award, and the Times Higher Education Award, based on the breeding and development of High Sugar Grasses.

"Together we've also produced the world's first successful cross of white and Caucasian clovers called AberLasting. This provides New Zealand farmers with a more resilient and drought tolerant clover that allows them to fix nitrogen naturally in a wider range of conditions and significantly reduces reliance on synthetic nitrogen fertilisers."

Germinal is more committed than ever to the New Zealand market, to our environment, and to our food producers.



# ABOUT GERMINAL

Founded in Belfast, Northern Ireland, as a general merchant in 1825, Germinal is a seventh-generation family business with a proud heritage. We are seed specialists, and our success is built on the strength of our expertise and people. Germinal have been active in the New Zealand wholesale seed market for more than 15 years.



We are committed to New Zealand, backed by a wealth of international knowledge and experience, and we are dedicated to making a real difference to the long-term sustainability and profitability of New Zealand farmers. By sharing our knowledge, engaging with our stakeholders, and innovating to create ground-breaking products, we will make a real difference to our world.

**Germinal is developing more unique and game-changing products that will make a real difference to the sustainability and profitability of New Zealand farmers.**

These includes clovers with high phosphorus use efficiency, which will again reduce the reliance of farmers on synthetic fertilisers and improve water quality.

Importantly, these products have been developed through conventional plant breeding, without the need for any genetic modification.

For more information on our research projects, please contact

**Sarah Gard**  
General Manager,  
Germinal New Zealand  
[sarah.gard@germinal.com](mailto:sarah.gard@germinal.com)  
0275777034





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**Germinal New Zealand Limited**

144 Tancred Street,  
Ashburton 7700, New Zealand

0800 171 825  
[enquiries@germinal.co.nz](mailto:enquiries@germinal.co.nz)  
[germinal.co.nz](http://germinal.co.nz)



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