



Australian barley

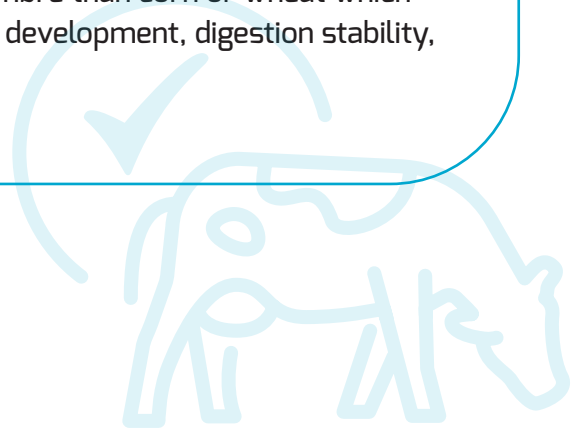
for dairy cattle

Australian barley is a proven, reliable, high-quality feed grain for cattle. It is recognised as a relatively safe grain due to its orderly fermentation rate in the rumen.



Key benefits of Australian barley for dairy cattle

- ✓ **Good starch source:** barley is well-suited to a wide range of cattle feeds and can be used as the sole source of starch or as a complement to corn, wheat, cassava and others.
- ✓ **Low mycotoxin contamination:** Australian barley is harvested dry and stored in high-quality facilities resulting in a very low incidence of mycotoxins.
- ✓ **High fibre grains:** barley is higher in fibre than corn or wheat which is considered beneficial in terms of gut development, digestion stability, regulated fermentation and gut health.





Production and export

Australian barley growers have built an international reputation for producing high-quality, clean and food safe grain which is highly sought after worldwide.

Australia is a major barley exporter, supplying **30–40%** of the world's exported malting barley and **20%** of global feed barley.

Australia produces **9–12** million metric tonnes (mmt) of barley each year.



Storage and processing

From the grower to the exporter, the **Australian barley industry is committed to the highest standard** in product performance to meet the requirements of international customers.


Australian barley has low moisture content (**8–12%**) with long storage viability and is highly regarded globally. Mycotoxin risk is low.



Nutrition

Dairy cows do not have a requirement for specific feed ingredients. Rather, they have requirements for nutrients, i.e. water, carbohydrates (sugars, starch, fibre), fats, proteins, minerals and some vitamins.

Cows are remarkably flexible animals and are able to thrive on a wide variety of feed sources (e.g. forages, grains, protein meals, legumes) that differ markedly around the world.



The objective in dairy cow feeding is to meet the cows' nutrient needs without excesses and within the cows' intake limits to achieve good feed efficiency (converting feed to milk) and optimal feed cost.





Opportunities to use barley in dairy cattle diets

The protein (amino acid) requirements of the dairy cow are supplied partly by microbial synthesis in the rumen and partly from bypass proteins.

The desired yield and subsequent utilisation of protein from the rumen is dependent on a stable fermentation pattern. This in turn needs a regulated delivery of energy substrates with a balance of rapid, moderate and slower fermentation characteristics. Barley starch can play a major role in achieving this via its high digestibility yet orderly fermentation rate, promoting a stable, healthy rumen with reduced risk of acidosis. It can be used as the primary starch source or complementary to other inputs (corn, wheat, cassava or molasses). Its fermentation characteristics can be further regulated via various processing techniques.

Beyond its role in delivering nutrients to support milk production, barley can also be employed to improve cow fertility. Research has demonstrated that feeding dairy cows a diet high in starch and low in fat post-calving can increase plasma insulin levels, which stimulates a cascade of other hormones promoting follicular development, ovulation and subsequent conception.

The typical nutrient comparison of barley relative to other dairy feed ingredients is shown in Table 1.





Things to consider

When considering dairy cow diets, key principles of ruminant nutrition must be applied, referencing off daily dry matter intake and regulating levels of NDF, physical effective NDF, starch, sugars, protein, minerals, buffers and the like.

Table 1: Typical nutrient specifications of barley vs. other dairy feed ingredients

Feed	Crude protein (% DM)	Starch (% DM)	NDF (% DM)	Metabolisable Energy (MJ ME/kg DM)
Barley	12.2	56.8	20.0	12.8
Lupins	34.5	3.1	25.9	13.8
Wheat	12.9	66.9	13.1	13.3
Corn	9.3	72.5	10.7	13.5
Dried tapioca	3.0	73.0	11.8	12.3
Soybean meal	48.0	2.7	13.4	12.1



Department of
Primary Industries and
Regional Development



AEGIC is an initiative of the Western Australian State Government and Australia's Grains Research and Development Corporation

Australian Export Grains Innovation Centre

Perth (head office)

3 Baron-Hay Court
South Perth, WA 6151, Australia
P +61 (08) 6168 9900
E admin@aegic.org.au

Sydney

1 Rivett Road, Riverside Corporate Park
North Ryde, NSW 2113, Australia
P +61 (02) 8025 3200

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.

aegic.org.au



Australian Export Grains Innovation Centre