



# Australian sorghum

for broiler poultry

Australian sorghum is a proven, reliable, high-quality feed grain. Australian feed sorghum is suitable for all classes of poultry.

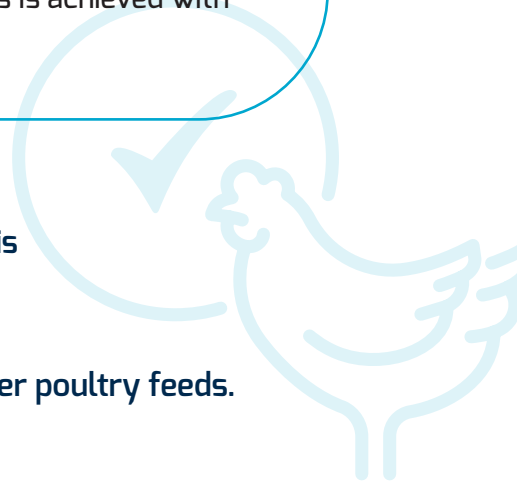


# Key benefits of Australian sorghum for broiler poultry

- ✓ Australian sorghum is nutritionally similar to corn, but higher in protein and without yellow pigment.
- ✓ Australian sorghum is suitable for all classes of poultry, and with its low mycotoxin contamination may be less risky than corn.
- ✓ Australian broiler performance is world-class and this is achieved with sorghum. Corn is not needed for high performance.

Australian sorghum is well suited for animal feed, including all types of poultry. Australian feed sorghum is low in mycotoxin contamination with good nutritional attributes and energy content.

Australian sorghum is worth considering for Asian broiler poultry feeds.





## Production and export

Most of the world's sorghum grain is fed to animals, including poultry, and it is also used for food (Africa) and alcohol (ethanol, beer in Africa and baijiu in China).

Australian sorghum production averages around **1–1.5** million metric tonnes. Australian sorghum is mostly used for animal feed within Australia.

Australian sorghum is also exported, with most demand coming from China. Australian sorghum in China is mostly used for animal feed, and is also used in the baijiu distilling industry.

Other export markets include Philippines, New Zealand, Taiwan and Japan.



## Storage and processing

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

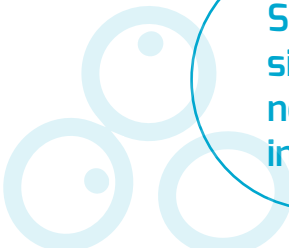
Australian sorghum has **low moisture content, with low mycotoxin contamination and long storage viability.**



## Nutrition

Starch is the main component of, and contributor to, metabolisable energy (ME) in all grain types. Sorghum starch content is typically slightly lower than corn but higher than wheat or barley, commonly around 62% as fed.

The nutrient composition and energy value of Australian sorghum is generally less variable than that of other grains. Starch digestibility is lower for sorghum than corn: e.g. it has ideal starch digestibility of 88 % compared to 94% for corn. Phenols (in the pigmented seed coat), kafirin (the protein matrix encapsulating the starch granules), and phytate may all contribute to this lower starch digestibility.



**Sorghum is classified as a non-viscous grain similar to corn due to its low content of soluble non-starch polysaccharides (NSP). It is also lower in insoluble NSP than other major grains.**

The ME value of Australian sorghum is commonly of the order of 3300 Kcals/kg as fed (12% moisture basis), similar to corn.

At typical crude protein levels sorghum contains similar standardised ileal digestible essential amino acid (SID-EAA) content to corn, but less than wheat or barley.



The oil and linoleic acid content of sorghum are higher than barley and wheat but lower than corn.

In high sorghum broiler feeds, linoleic acid would be above 1%, sufficient to meet requirements.

Table 1: SID-EAA composition of sorghum, corn, barley and wheat with typical crude protein content

	Sorghum	Corn	Barley	Wheat
Crude protein (%)	10	8	10	11
Lys	0.20	0.22	0.31	0.27
Met	0.16	0.16	0.15	0.16
Cys	0.14	0.16	0.19	0.23
M + C	0.30	0.32	0.35	0.39
Thr	0.28	0.25	0.25	0.27
Try	0.12	0.05	0.09	0.12
Arg	0.34	0.33	0.40	0.46
Ile	0.35	0.27	0.29	0.35
Leu	1.10	0.89	0.57	0.66
Val	0.44	0.35	0.40	0.43

Source: Evonik AminoDat 5.0



## Opportunities to use sorghum in broiler diets

Australian sorghum is a proven, reliable grain for commercial broiler feeds. It is nutritionally similar to corn but without the yellow pigments.

In Australia, sorghum is commonly included at above 50% in commercial broiler feeds, sometimes as the only grain, though many nutritionists prefer to use a mixture of grains.

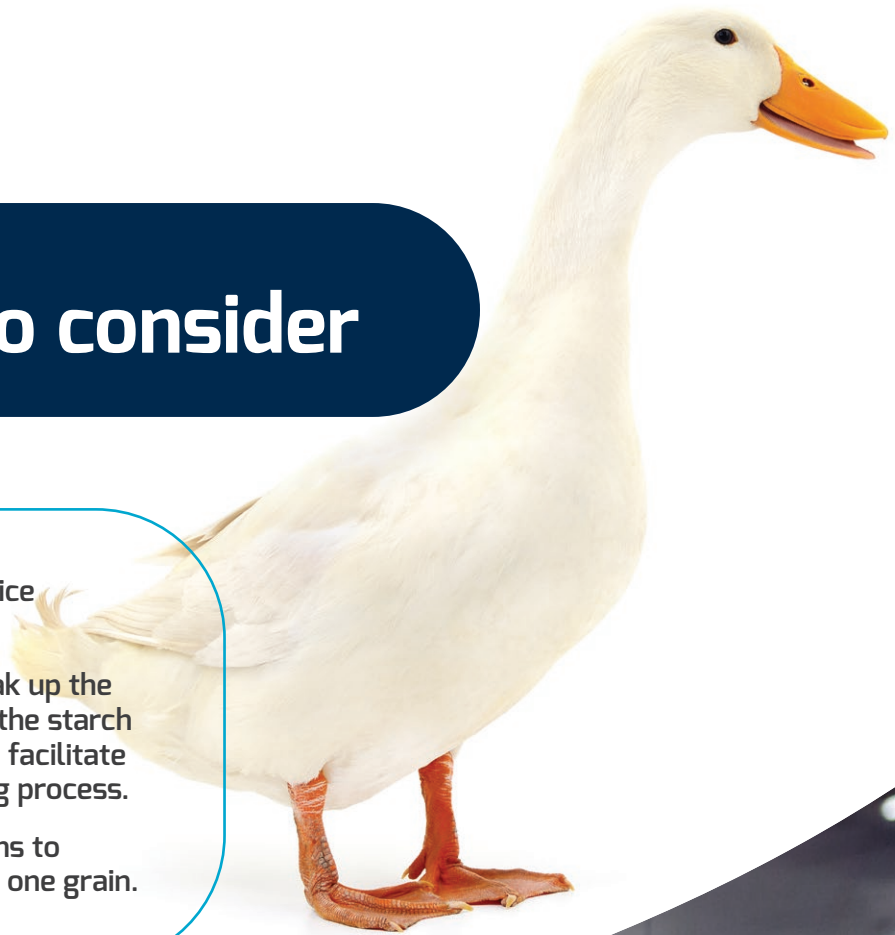
Sorghum can be difficult to pellet and is often complemented with wheat to improve this aspect. Phytase inclusion is standard in sorghum-based broiler diets and there is some use of xylanases and proteases.

Reducing agents can help to solubilise proteins by cleaving disulphide bonds in cystine. Australian research has found including the reducing agent sodium metabisulphite at 0.15% increases the ME of sorghum-based broiler feed by as much as 90 Kcals/kg.



## Things to consider

- ✓ Use sorghum when it is price competitive.
- ✓ Fine-grinding helps to break up the kafirin matrix and expose the starch to enzyme hydrolyses and facilitate gelatination in the pelleting process.
- ✓ Consider a mixture of grains to spread the reliance on any one grain.



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