

# Lupin products for pigs and poultry

From the feed, aquaculture and food markets of Europe and Australia to expanding markets throughout Asia, Australian Sweet Lupins (*Lupinus angustifolius*) are developing a reputation as a high quality and versatile source of protein, energy and fibre.



Lupins have been included in both commercial pig and poultry rations in Western Australia for over 30 years, with subsequent benefits being realised in both feed costs and performance.

Lupins are recognised as an excellent nutritional ingredient for stock and aqua feed and are rapidly gaining a reputation as a nutritious product suitable for human consumption.

Grown by grain farmers in the southern regions of Australia, lupins are a non-genetically modified plant source of concentrated protein that is low in anti-nutritional factors.

The unique nutritional composition of lupin seed can be optimised through a mechanical hulling and cleaning process to remove the outer seed coat. The resultant lupin kernel is double ground to produce a premium product of smaller particle size, high kernel purity and no admixture. Compared with lupin meal, the kernel product is easier to transport and produces less dust.

The pig and poultry industries recognise lupin kernels as an attractive, alternative protein source that is competitively priced and nutritionally sound.

## Typical Lupin Composition Analysis (% as received)

Composition Analysis	Whole Lupin	Lupin Kernel
Crude Protein	32	39
Crude Fat	5	7
Crude Fibre	15	3.4
NFE	36	38.9
Ash	2.8	3.0
Calcium	0.22	0.13
Phosphorus	0.30	0.39

Grain Pool is a leading international grain company and the largest marketer of Australian Sweet Lupins. For the pig and poultry industries, Grain Pool offers a range of lupin products from the Australasian Lupin Processing Company which operates the newest and largest lupin processing plant in the world. With a strong focus on superior customer service, Grain Pool aims to provide its customers with the highest quality grain products to meet their individual requirements.





## Benefits of Lupins for Monogastric Animals

- ✓ Nutritionally sound
- ✓ Higher in energy digestibility and utilisation
- ✓ Competitively priced

Research conducted by the Pig and Poultry Production Institute in South Australia shows that lupins are a valuable alternative source of protein and energy for use in pig and poultry diets.

Inclusion of lupins for growing and finishing broiler diets of 10% and for layer diets of 10-15% is common. The use of lupins in duck rations at 20% is typical for some Asian customers.

Lupins have been successfully used by commercial pig growers in pig rations at inclusion rates of up to 30%.

Lupins are lower in anti-nutritional factors than many vegetable protein sources and do not require pre-heating before being used in feeds for monogastric animals.

Processing of lupins to remove the seed coat produces a kernel with significantly increased nutritional value and minimal admixture. Dehulling the lupin seed increases the protein level and reduces hull fibre content which offers improved energy digestibility and utilisation by both pigs and poultry.

## Energy Content of Lupin Kernel Compared with Soybean Meal (as feed basis)

Livestock Type	Lupin Kernel	Soybean Meal
Pigs (DE MJ/kg)	15.7	14.5
Poultry (ME MJ/kg)	10.0	9.2

The nutritive content of lupin kernels such as protein, energy and fibre levels are very consistent and therefore make inclusion rate calculations simple for ration formulations.



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