

Guar meal in Animal Feed

Guar is a well known raw material used in animal feed production, mainly cultivated in India and Pakistan with India as the world largest producer at 1.2 million tons. Guar has also been successfully grown in USA, South Africa, Brazil, Zaire and Sudan. Efforts have been made to cultivate Guar in Australia, China and Thailand. The major importing countries of guar products are the USA and Germany.

Guar can be grown for traditional purposes, such as human consumption, cattle feed, medicinal purposes, crop and soil improvement. The main purpose however of growing guar is for industrial purposes to produce guar gum. Guar gum is produced from the endosperm (35 to 42% of the seed). Guar gum is used for technical products (textile printing, paper, explosives, mining tobacco water treatment, firefighting); human food (frozen foods, bakery, dairy products, canned food); pharmaceuticals (laxative, slimming aids, diabetic treatment, tablet preparation, ointments) and cosmetics

The by-products of the guar processing is guar meal a mixture of husks and germ which is a potential source of protein and can be used in cattle and poultry feed. Like soybean meal, guar meal contains Beta mannan, saponins and natural trypsin inhibitor which makes toasting essential to enhance its nutritive value and digestibility. Feeding value can also be significantly enhanced with the use of enzymes.

Guar meal is however a significantly poorer source of protein than soybean meal.

Approximate nutrient profile

	Guar meal	Soybean meal
Crude protein (%)	41	47
NE lact (kcal)	1500	1800
ME layers (kcal)	1800	2000
DE Swine (kcal)	3100	3500
Fat (%)	5	2
Crude Fibre (%)	12	4
Lysine (%)	1,7	2,9
Total SAA (%)	1	1,3

Guar meal due to its high fibre content has limited application in poultry feeds, but could be successfully utilized in layer feed and ruminant feeds.

The processing methodology of guar would be key to its acceptability to the animal feed industry, this could pose a challenge as guar meal would be the by-product of a factory manufacturing guar gum.

Conclusion

Should guar be produced in South Africa in large quantities it would warrant investment in processing capacity. The economics of the various components of guar that could be sold in the market have not been evaluated in South Africa. The price that can be realised for guar gum will play a major role in its feasibility. Guar meal is a by-product of guar gum production.

The South African feed industry would be able to utilize correctly processed guar meal, the use of which will be restricted by the limited application of guar meal as compared to soybean meal.

The value chain of guar meal would need to be explored to ascertain its suitability as an alternative crop, it is however doubtful it has much potential to develop into a significant source of protein for the animal feed industry.