



## CLIMA Media Release

May 12, 2005

### **LUPIN GROWERS ENGAGED IN A FISHY AFFAIR**

WA lupin growers could find themselves engaged in a fishy affair with the aquafeeds industry with a research program aiming to deliver lupins as a unique niche feed source.

A Centre for Legumes in Mediterranean Agriculture (CLIMA) co-ordinated program with the WA Departments of Fisheries and Agriculture, the Chemistry Centre and the Grains Research and Development Corporation (GRDC) is researching value-added lupin protein feed products.

Program leader Brett Glencross of the Department of Fisheries said the opportunity for such lupin products was not high-volume and therefore better targeted at niche markets where value was derived from points of difference with traditional feed sources such as soybean meal.

“Lupins possess an array of valuable components, with oil, energy and protein levels all playing an important role in aquafeeds,” Dr Glencross said.

Primary studies investigating processing of lupins for fish diets using extrusion technology have produced pellets with greater durability and improved oil absorption.

“These two features alone make lupins superior to many other feed ingredients, such as soybean meal, when used in modern fish diets.”

The Fisheries Research and Development Corporation has also invested through the UWA-based CLIMA, extending the original rainbow trout program to evaluate prawns, through CSIRO, and Atlantic salmon, through the University of Tasmania.

Additional work on Atlantic salmon, being done by AKVAFORSK in Norway, where most of the world’s salmon is produced, is supported directly by CLIMA and GRDC.

“The salmon and prawn industries annually use 3.6 million tonnes of feed globally, which could be a lucrative market for Australian lupin growers,” Dr Glencross said.

“These species need a high protein, very energy dense feed product and there is some evidence lupin-based feed can not only provide a nutritionally sound ingredient, but could also have improved ingredient functionality.”

About 35,000 tonnes of Australian lupin kernel meal was used in aquafeeds last year.

“A higher protein lupin grain would enhance kernel meal value, so we’re considering options for growers to produce higher protein narrow leafed lupin crops,” Dr Glencross said.

CLIMA associate and Department of Agriculture (DAWA) grain legume agronomist Bob French found it was not possible to manipulate grain protein by agronomics or farming practices, although lupins grown in low rainfall areas often had higher protein.

Row spacing did not affect protein levels and while protein can be improved by grading out small, low protein seed, the cost of grading cancels out economic benefits for growers.

According to Dr French, the most practical option is for growers to choose an appropriate cultivar.

A new cultivar to be released by DAWA in 2006 has consistently higher protein than those currently available.

CLIMA findings indicate lupin’s protein component will also increase with reduced hull thickness, which is currently about 24 per cent. Hull thickness of 18 per cent is worth, in terms of protein, about an extra \$13 per tonne.

According to Dr Glencross, less common lupin species, such as yellow, albus and pearl, have some of these useful properties and could be valuable feed sources if agronomic constraints were overcome.

“Yellow lupin, for example, has protein between 38 and 42 per cent and the lowest proportion of non-starch polysaccharides, which interfere in digestibility,” he said.

“There are no long-term palatability issues with protein concentrates from either narrow leafed or yellow lupin.”

The aquaculture ‘boom’ is also attracting corporates, with Skretting, George Weston Foods and Co-operative Bulk Handling (CBH) investing in the program.

Construction of a de-hulling plant, funded by George Weston Foods and CBH, is underway, with the higher protein de-hulled product more valuable and practical.

The program’s third year sees the large multi-disciplinary team moving to understand and characterise the variability of lupin feed products.

**[www.clima.uwa.edu.au](http://www.clima.uwa.edu.au)**

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*Photo caption: Dr Brett Glencross of Fisheries WA with lupins and lupin products. He is investigating lupins as a unique niche feed source in aquaculture.*