Aquaculture, the world’s fastest growing livestock production industry, is assessing how to fulfil its growing feed requirements, as WA lupin growers prepare to reap rewards from the $743 million boom industry.

With such a high industry growth rate -- 10 per cent a year over 10 years and now producing more than 40 million tonnes of fish annually -- there is increasing pressure to reduce aquaculture’s reliance on fish and meat meal-based feed sources.

A Centre for Legumes in Mediterranean Agriculture (CLIMA) co-ordinated project, with partners WA Departments of Fisheries and Agriculture and Chemistry Centre and Grains Research and Development Corporation (GRDC) funding, is researching value-added plant protein products for the aquaculture feeds sector.

The Fisheries Research and Development Corporation also recently agreed to invest with the University of WA based CLIMA, extending the current program to evaluate prawns, through CSIRO and Atlantic salmon, through the University of Tasmania.

Additional work on Atlantic salmon is being done in Norway, the world’s largest salmon producer. This component is supported directly by CLIMA and GRDC.

The aquaculture boom is also attracting corporate investors to CLIMA, with Skretting, George Weston Foods and Co-operative Bulk Handling (CBH) recently agreeing to invest in the program.

In sourcing a viable grain-based protein product, concerns over supply, quality and cost must be addressed.

Project supervisor Brett Glencross, of the WA Department of Fisheries, said the project represented one of the highest research priorities for aquaculture and provided an economic way to meet industry needs.

“While lupins are generally favoured by fish feed manufacturers for their excellent nutritional characteristics, more can be done to make a good product into a great product. The grain product also assists feed manufacturers in making a better pellet.
“We need to look at the amount of nutrients and energy a fish can derive and utilise from the specific ingredient, along with its palatability,” Dr Glencross explained.

Research would identify production aspects that were not only nutritionally effective, but also practical and economically viable.

“Nutritional evaluation with key aquaculture species, such as rainbow trout, Atlantic salmon and prawns, will demonstrate the potential advantages and possible uses and value of specific lupin products,” Dr Glencross said.

“Commercial transfer of intellectual property for quality assurance and new product development will provide direct extension of the research phase to the commercial.

“This will assess and assist market awareness of the new products and the transfer of processing and application knowledge to the manufacturing and end-use sectors.”

CLIMA Director Kadambot Siddique said the project had the potential to further develop a protein premium payment system for lupin growers.

“With WA lupin growers producing 700,000 tonnes of grain in 03/04, the majority of Australia’s lupin production, any price premium would help improve the economic viability of a legume which has a very significant role in WA cropping rotations.

“There is also potential for developing WA industries to process the lupins,” Professor Siddique noted.

The CBH/George Weston Foods joint venture lupin de-hulling plant, set to commence operating next year at the Metro Grain Centre, Forrestfield, was one example.

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Attached Pic caption (‘withtrout.jpg’): Best of friends: Dr Brett Glencross, WA Department of Fisheries, and trout.