

Dr Rossita showing the prototype seaweed aquaculture feed.



UMS scientists develop sustainable fish feed

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KOTA KINABALU: Universiti Malaysia Sabah (UMS) scientists have developed prototype aquaculture feeds as alternative feed ingredients in order to sustain the industry.

Aquaculture has been identified as a National Key Economic Area (NKEA) and the government has set a production target of over 700,000 metric tonnes under the 10th Malaysia Plan (RMK10).

Since capture fisheries production is declining, aquaculture is the only option available to meet the fish demand.

Sabah, being the most diverse in marine resources, should lead in aquaculture research, especially the high-value marine species.

At present, the industry is relying on the unsustainable approach, which is using trash fish and expensive formulated feed.

Trash fish has been traditionally used as the main feed source for culture marine fish, which was preferred by most farmers due to its availability, compared to high price and limited supply of pelleted feed.

The low usage of pelleted feed is also due to inadequate information on the use of the feeds and limited supply of weaned stock.

But, in order to sustain the industry, efforts must be done to reduce the cost of aquaculture feed and the dependency of the industry on fish-based feeds.

As such, Deputy Director (Research and Innovation) of Borneo Marine Research Institute (IPMB), Universiti Malaysia Sabah (UMS), Assoc. Prof. Dr Rossita Shapawi, along with other post-doctoral, postgraduate and undergraduate students were conducting a research on fish nutrition and feed development with focus on finding suitable alternative feed ingredients.

As a result, Dr Rossita has developed several prototype aquaculture feeds that are ready to be marketed with the concept of using reduced amount of fish-based ingredients, locally available and

halal ingredients i.e. poultry by-product based feeds for groupers namely Garoupa-1TM and Garoupa-2TM and seaweed-based feed called KAPPA-PELLETTM for sea bass.

The Garoupa products won the Silver medal award in UMS Pereka Competition 2009.

The KAPPA-PELLETTM is an innovative feed formula using seaweed meal (*kappaphycus alvarezii*) as a source of protein, vitamins and minerals.

The seaweed used is an antioxidant rich in essential nutrients such as fatty acids and contains carrageenan which can serve as binder and available locally.

The KAPPA-PELLETTM won the gold medal award at UMS Pereka Competition 2013 and Silver medal at the national level BioInnovation Award 2013.

She disclosed that feed was the most expensive component in any aquaculture farm, where it involved more than 60 per cent of the production cost.

The research is done at IPMB where it currently has two on-campus hatcheries, namely the Fish Hatchery and Crustacean Hatchery.

Dr Rossita hoped to be able to collaborate with aquafeed companies to commercialise the research products.

More investigations will be done on the potential of locally available ingredients to reduce our dependency on imported products.

To date, she said Sabah does not have any aquafeed plant and we currently depend on feed imported from either the Peninsular Malaysia or other countries.

She also hoped that collaboration between the university, and industry could be strengthened to realise the aim of making Sabah as a hub for the aquaculture industry in Malaysia.

The research received several grants such as from the Ministry of Education Malaysia and the Ministry of Science and Technology, to carry out these researches in the field of aquaculture nutrition and feed development.