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"Never tell people how to do things. Tell them what to do and they will surprise you with their ingenuity " - George Patton

President's Column

Innovation, strategy and leadership are closely interrelated and to succeed you need all those three. Innovation is the production or implementation of an idea. If you have ideas, but don't act on them, you are imaginative but not creative.

Innovation is the engine of growth in today's marketplace. The pressures to innovate are unrelenting and the contribution to total sales revenue derived from new products will increase significantly over the next decade. This of course is driving the need for organizations to develop strong innovation strategies and to budget for adequate Research & Design (R&D) spending. Companies face the choice of working within the existing processes to gain incremental improvements, or, to restructure the organization and invest in new products and services. For the survival of many organizations' it is becoming crucial to break through this tension, because without sound innovation strategies in place many organizations' are doomed to decay.

On the other hand, challenging economic times should not be seen as a constraint on innovation. Research has indicated that the management of the new product development and innovation process is perceived by senior managers as critical to long term success (however that is defined). In today's markets, with increased access to information and rapidly decreasing product lifecycles, the management, development and marketing of a company's product is even more critical.

Sergio F. Nates, Ph.D.

Country Focus (Malaysia) – Sergio Nates

Livestock Production

Malaysia's livestock industry is dominated by the poultry industry, which reported 83% of industry sales in 2007. Total industry sales in 2007 were valued at C$ 930 million. The pig and cattle farming industries are much smaller with shares of around 9% and 2%, respectively, in that year. The poultry industry includes large integrated corporate farms producing both poultry meat and eggs. Some of these businesses are large sized public companies that are listed on Malaysia's stock exchange. In contrast, the pig and cattle industries are small because they are mainly comprised of small and medium sized businesses, most of which are family owned and operated.

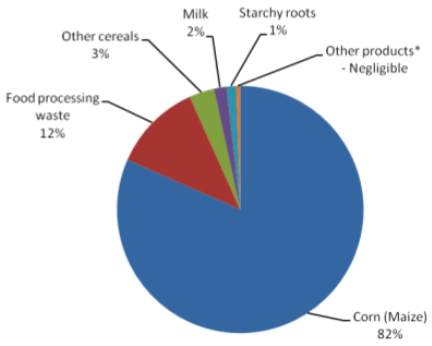
The cattle farming industry has considerable weaknesses because it was originally established as a sideline business by Malaysia's small-holder farmers. In 2005, the industry comprises 80 farming businesses employing about 500 persons, with annual sales valued at just C$ 19 million.

The pig farming industry is highly fragmented. It comprises over 800 family owned and operated farms that tend to supply highly localized markets. The industry currently works with a standing inventory of around 1.7 million pigs and is the third largest livestock industry, after poultry meat and eggs.

Feed Industry

Malaysia uses more than 3 million tones of animal feed materials, including locally available agricultural products and related waste materials (Figure 2).

Figure 2. Animal feed ingredienst in Malaysia



Malaysia has a sizeable and highly competitive animal feed industry. The industry comprises about 70 firms, which employ about 4,000 people.

About 40 of the businesses are categorized as medium to large sized operations. Malaysia has a number of large multinational, international and local animal feed suppliers, which include Cargill Feed, Chareon Pokphand Feed Mills, the Malayan Flour Mills group feed companies, Federal Flour Mills group, Gold Coin Malaysia, Sabah Flour and Feed mills, Sin Heng Chan, Sinmah Multifeed and the Soon Soon Group.

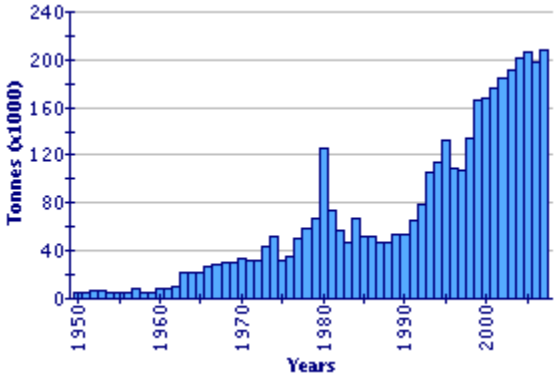
Aquaculture Industry

Given the long coastline of about 4 780 km, brackish water aquaculture dominates the aquaculture industry in Malaysia. The fisheries sector in Malaysia contributed 1.42 million tons of seafood valued at RM 5.3 billion (USD 1 = RM 3.4) in 2007.

It can be divided into two main categories, namely the marine capture fisheries industry and the aquaculture industry. The aquaculture industry contributed 268,500 tons (about 16%) of seafood supply valued at about RM 1.3 billion and has great potential for further expansion due to favorable government policies. This sector has been recording annual growth rates of about 10% from 1993 to 2007. The presence of vast bodies of inland freshwaters and the long coastline in Peninsular Malaysia, Sabah and Sarawak also augments well for future aquaculture development. Malaysia is also a major global supplier of ornamental fish and aquatic plants.

According to the Third National Agricultural Policy (NAP3), aquaculture is projected to contribute about 600,000 tons of farmed aquatic products. This anticipated rapid expansion of the local aquaculture industry must be supported by a corresponding increase in the production of formulated feeds and feed inputs for the cultured aquatic animals.

Figure 3. Aquaculture Production in Malaysia



R&D Update (Progress report)

08B-2 **Potential, Implications and Solutions Regarding the Use of Rendered Animal Fats in Aquafeeds**

The summary below is an excerpt from a Peer Reviewed article by Dr. J.T. Trushenski and Dr. R. T. Lochmann, Southern Illinois University Carbondale. The article has been accepted for publication in the American Journal of Animal and Veterinary Sciences.

Abstract: Background: *In the past, aquafeeds were comprised largely of fish meal and fish oil derived from marine reduction fisheries. In addition to being highly palatable and readily digested by cultured fishes, these feedstuffs were historically inexpensive sources of protein, energy and essential nutrients. However, increasing cost and concerns over safety and sustainability have greatly incentivized the transition from fish meal and oil to alternative sources of protein and lipid for aquafeed formulation. Fish oil replacement is proving more difficult than originally anticipated, particularly for marine carnivorous species.*

Objective: *If complete fish oil replacement is not a viable goal for fish nutritionists and aquafeed manufacturers, at a minimum, we must strive for judicious use of limited marine-derived resources.*

Methodology: *In the present review, we explore the opportunities of using rendered fats as alternatives to marine-derived fish oils in aquaculture feeds, beginning with a discussion of the products themselves before reviewing the most recent literature and concluding with a discussion of the future of these products in aquafeed formulations.*

Results: *Rendered fats have not been as intensively evaluated in aquaculture nutrition as grain and oilseed-derived lipids, although a number of recent publications on the subject suggest increasing interest in the use of rendered products in aquafeeds.*

Conclusion: *Poultry fat, beef tallow, pork lard and to a lesser extent, yellow/restaurant grease and catfish oil, have been investigated individually or in combination with other lipids in feeds for a broad range of cultured taxa with generally acceptable results.*

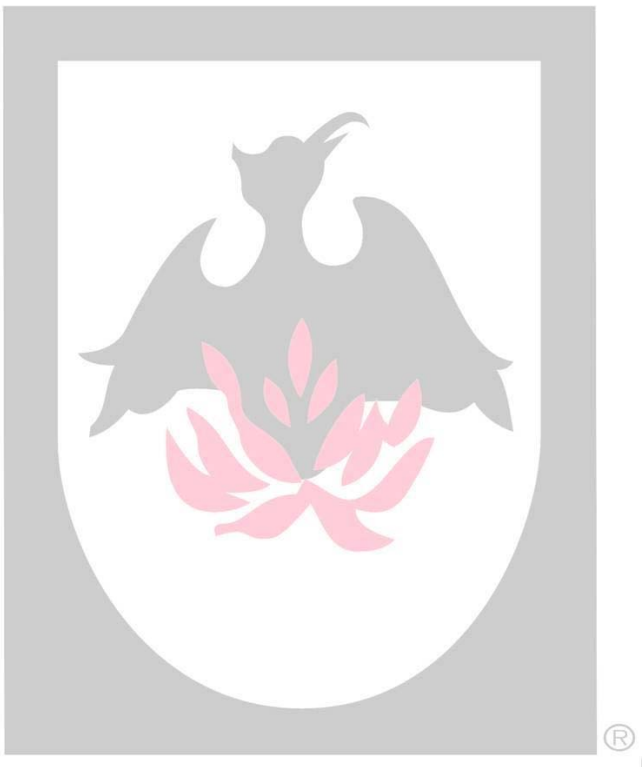
Key words: aquaculture; fish oil; alternative lipid; rendering; fatty acid; fish nutrition

Noteworthy Article

Piazza G.J. and R. A. Garcia (2010) Meat & bone meal extract and gelatin as renewable flocculants. Bioresource Technology 101(2): 781-7.

Readily available proteins were tested as renewable flocculants, and their actions were compared to that of anionic PAM, a common, commercial flocculant that requires the coaddition of a calcium ion source. Two soy proteins, a whey fraction, a porcine gelatin, and a meat & bone meal (MBM) extract were used in the flocculation test. It was found that MBM extract

complete by 24h with or without the addition of calcium chloride. The other tested proteins did not promote clay flocculation, but all of the proteins were found to be adsorbed to clay. The protein adsorptions were well described by the Langmuir model, and gelatin and MBM extract had higher maximum adsorption capacities than the other proteins. Zwitterionic buffer solutions at pH 5.5, 7.0, and 10.0 were tested in the flocculation experiments. Addition of the pH 5.5 buffer caused the two soy proteins to become clay flocculants and lowered the concentration of gelatin and MBM extract necessary to promote complete flocculation by 24h. Calcium chloride was not required for flocculation. Under optimal testing conditions, the dried weight of gelatin or MBM extract was 2.6 and 17 times higher, respectively, than the weight of anionic PAM required for complete flocculation at 24h.



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