Bright Prospects for the Biotech Products Industry

The Biotechnology industry is expanding at an exciting and brisk pace. Like no other industry today, biotechnology offers the market potential for highly attractive products that have economic as well as environmental benefits. Biotechnology is poised to reduce the use of pesticides, increase farmers' revenues, and improve the nutritional quality of food.

The term "biotechnology" refers to the use of living organisms or their products to modify human health and the human environment. We can combine the genetic elements of two or more living cells by using the techniques of gene splicing and recombinant DNA technology. Functioning lengths of DNA can be taken from one organism and placed into the cells of another organism. As a result, we can cause bacterial cells to produce human molecules. Cows, for example, can produce more milk for the same amount of feed. In addition, we can synthesize therapeutic molecules that have never before existed.

Food biotechnology is relatively new in Malaysia, although food and food ingredients produced by traditional biotechnology, like fermentation technology, has brought to market products like soy sauce, 'dadih' and 'tempeh'. Although, Malaysia has not yet produced a biotechnology crop commercially, several genetically modified crops containing traits of value have been produced at the experimental stage. At the Malaysian Agricultural Research and Development Institute (MARDI), rice has been successfully modified to resist the tungro virus, and papayas manipulated to resist ring-spot virus infection and to have a prolonged shelf life. Other crop plants such as pineapples are manipulated to resist "black heart", bananas and papayas for delayed ripening, and chili for virus resistance. Malaysia is also developing genetically engineered oil palm, with a focus on increasing value-added products from the palms, such as high oleate and high stearate oil, nutraceuticals (vitamin A and E), bio-diesel and bio-plastics. Several animal recombinant vaccines have been produced to assist the development of animal husbandry. In order to reduce the high costs associated with

imported feed, research is also underway in Malaysia to generate cheaper domestic livestock feed, through biotechnology.

In Malaysia, the focus of biotechnology work centers on the needs of the nation. Improving food production has been, and will always be, one of the top priorities and commitments of government agencies involved in biotech.

The economic crisis of the late ’90s has prompted the government to take a second look at, and a new stance on, the importance of agriculture, especially in food production, to the national economy. The Government has stressed the need for producing a sufficient amount of food for national security and stability. The huge and growing budget for food and feed imports clearly indicate the need to transform our agriculture sector so that it can produce enough food for the people.

Therefore, the Malaysian government is well aware of the potential benefits of genetically modified (GM) crops. At the same time, its impact on consumers as well as producers is recognised. The Malaysian government is aware and has become more cautious about food safety and the potential risks of transgenic food crops. Consequently, it has the responsibility to assure the public of the safety and the “halalness” of the genetically modified crops, as well as to safeguard against any adverse effects on human health and the environment. Thus, a Genetic Modification Advisory Committee (GMAC) was established under the National Committee on Biodiversity (NCB), Ministry of Science, Technology and the Environment (MOSTE), to ensure that risks associated with the use, handling and transfer of Genetically Modified Organisms (GMOs) are identified and safely managed, and to advise the government on matters relating to the GM technology and its application.

As the GMOs are relatively new to Malaysian consumers, the National Biotechnology Directorate is stepping up its efforts to implement public awareness programmes on biotechnology. The programmes include (a) arranging lectures at public forums and

schools, (b) preparing and distributing phamplets about biotechnology, and (c) promoting a better understanding of biotechnology through the media.

The biotechnology sector faces a challenging future with increasing global competition. To make Malaysia more competitive in this industry, the Malaysian government, under the Ninth Malaysia Plan, will implement the strategic thrust of the National Biotechnology Policy (NBP), with the active participation of private sector. The 'BioNexus' concept will be adopted to strengthen the existing institutions along with a parallel development of the industry.

The biotechnology industry can become the main driving force behind growth of the agriculture sector in Malaysia. With the recognition as the world's halal hub, and given importance attached to the biotechnology industry, Malaysia is poised to introduce biotechnology products with GM label and halal certification.

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