

Competitiveness of the Mushroom Industry in Malaysia

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INTRODUCTION

Mushrooms have been identified as one of the high-value commodities under Malaysia's National Agro-Food Policy (2011-2020). The development of the mushroom industry has been intensified in the agriculture transformation program which focuses on further development through area expansion, increased productivity and supported by R & D for the development of new varieties and product quality improvement. The mushroom industry in Malaysia is still in its infancy stage. The commercial industry which started in the 1960s gradually improved. The industry is increasingly attracting many entrepreneurs, especially the young people who are persuaded to invest and get involved in the production of mushroom processed products (Mohd Anim, 2014). Currently, seven varieties of mushrooms are grown commercially in Malaysia. The most popular varieties are grey oyster mushroom, black jelly, ganoderma, and shitake. Ganoderma and grey oyster mushrooms are widely grown in lowlands, while the black jelly and shitake mushrooms are grown in highlands (Mohd Anim, 2014).

The agro-climatic conditions in Malaysia is suitable for cultivation of mushrooms throughout the year. Thus, Malaysia has the potential to be a large mushroom producer which can compete in the world market. Nevertheless, there are many issues and challenges faced by this industry. This paper highlights the issues and challenges faced by this industry and suggests some strategies for its development.

Trading of mushrooms

The demand for mushrooms is increasing every year. However, the domestic production is unable to meet the demand. Thus, Malaysia has to import more than five tons of fresh and dried mushrooms yearly since 2009. The import increases every year and has reached more than 10 million tons in 2012, driven by higher demand from domestic market. Malaysia imports 2.71 million tons of fresh mushrooms valued at more than USD1.55million and 3.11 million tons of dried mushrooms valued more than USD3.0 million from China in 2012. The import of mushrooms from China increases steadily at an annual average of 9.23% for the fresh and 12.93% for the dried ones from 2009 (Fig. 1).

Even though Malaysia is the net importer, it exports fresh and dried mushrooms. The main export destination for fresh mushrooms is Singapore, while dried mushrooms are to Thailand. The export of fresh mushrooms to Singapore dropped to 1.78 million tons in 2012, from 2.16 million tons in 2011. This decline was reflected by the higher export of dried mushroom from 35.15 tons in 2011 to 86.7 tons in 2012 in (Fig. 2).

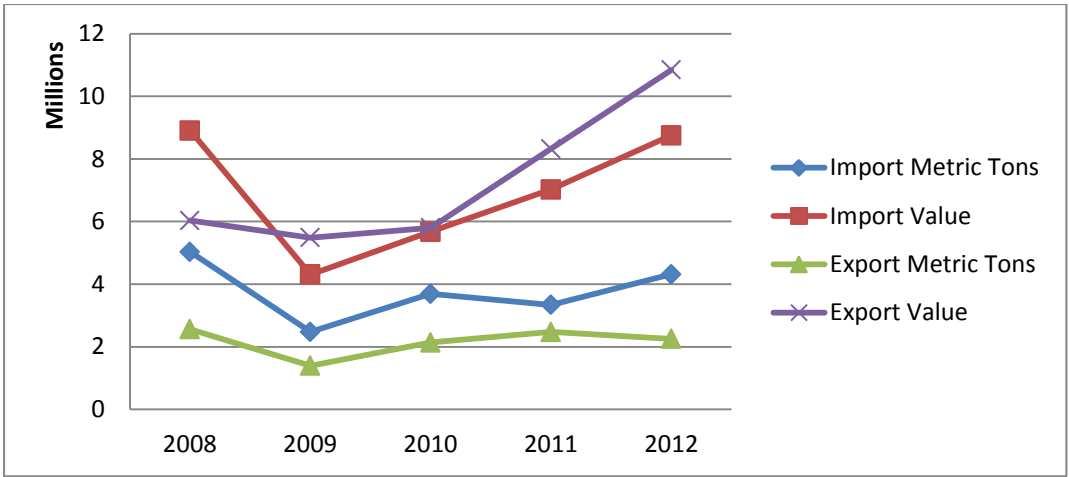


Fig. 1. Fresh mushroom import-export of Malaysia
 Source: Comtrade

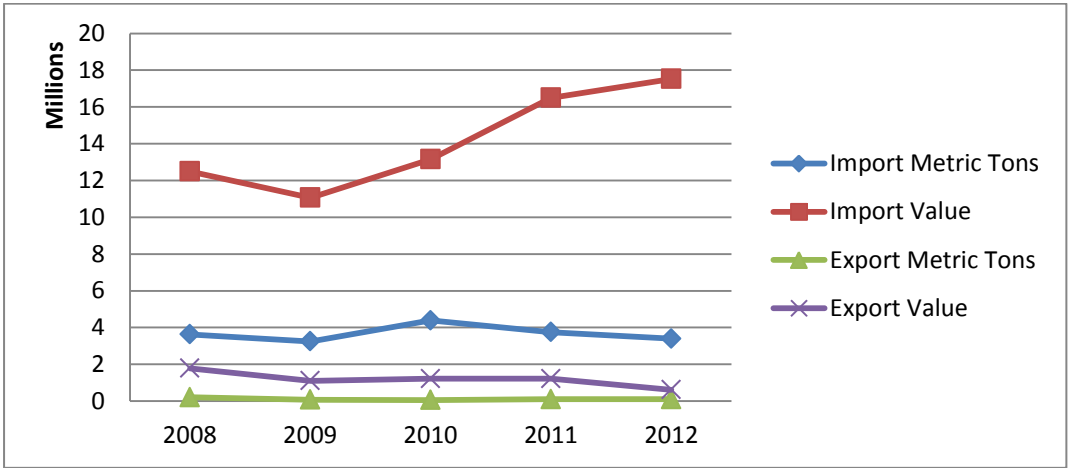


Fig. 2. Dried mushroom import-export of Malaysia
 Source: Comtrade

Competitiveness of Mushroom Industry

Global competition occurs when a country takes a global view of competition and sets its sights on maximizing profits worldwide. In this paper, the Revealed Comparative Advantages (RCA) was used to measure the competitiveness of Malaysia's mushroom against its rival countries. Revealed Comparative Advantage (RCA) analysis means an index used to find the international economics for calculating the relative either advantage or disadvantage of a certain country in a certain class of goods or services as evidenced by trade flows. A comparative advantage is “revealed” if $RCA > 1$. If RCA is less than unity, the country has a comparative disadvantage in the commodity or industry. For this purpose, Malaysia was compared with the main mushroom producer in ASEAN countries. Based on the RCA, Malaysia is comparatively at a disadvantage compared to Indonesia and Vietnam, but is comparatively at an advantage when compared to Thailand and the Philippine in the export of

mushrooms. The Malaysian competitiveness generally weakened against all four countries. (Table 1).

	2009	2010	2011	2012	2013
Malaysia against Thailand	0.34	0.32	0.39	0.37	0.37
Malaysia against Indonesia	-0.53	-0.67	-0.6	-0.63	-0.67
Malaysia against Philippines	0.39	0.24	0.32	0.42	0.28
Malaysia against Vietnam	-0.03	-0.19	-0.01	-0.008	n.a

The higher cost of production which was contributed by higher labor and input costs was the main factor for the comparative disadvantage of the mushroom industry in Malaysia.

The Industry's prospects

The demand for mushrooms in Malaysia is projected to increase in line with the increase in population and consumption per capita due to their concerns towards health and other benefits. The demand is estimated to increase from 15,000 metric tons in 2010 to around 67,000 metric tons in 2020. This increment will give an idea about the future demand for mushrooms in the local markets. Higher demand is expected for all three categories: the fresh, dried and mushroom-based products. Fresh oyster mushrooms are highly demanded by end users, while the shitake and button mushrooms are popular varieties for institutional consumers, especially hotels. The demand for medicinal, nutraceutical and cosmetic products with mushrooms as their raw materials is expected to increase in the future, in line with the awareness toward health benefits, especially by women and young consumers. The demand for mushroom based products such as mushroom flavored beverages, and snacks are also expected to increase tremendously.

The demand for mushrooms in the global markets is also high. According to the world mushroom global production (*FAOStat*), the demand is continuously increasing from 0.30 to 3.41 million tons over the period of about 50 years from 1965 to 2015. Poland, Netherlands, Ireland, China, Belgium, Lithuania, Canada and USA are the major mushroom exporting countries while UK, Germany, France, Netherland, Belgium, Russian Federation and Japan import the mushrooms from the abovementioned exporting countries.

Trade of mushrooms in Europe is about 27% of the world production (*FAOStat, 2014*). Netherlands is its largest producer and consumer. Poland is the largest exporter. UK is the largest importer. France and Spain are also the larger producers as well as consumers. On the other hand, China is the largest exporter of processed mushrooms. It is clear from the above discussion that European Union and USA are the biggest markets, while Poland and China are the biggest competitors. Even though the competition in the world mushrooms market is very fierce, there is still a great opportunity for Malaysian mushrooms to enter the markets. Malaysia should focus on mushrooms that have extensive markets, such as the shitake and buttons, and double its exports from 1,000 tons to 2,000 tons a year. Malaysia should also focus its efforts on exports to the European markets which offer higher and sustainable demand. These markets are also attractive because they cover a larger area with more than 500 million potential consumers.

Strategies for strengthen mushroom industry

Due to better prospects of this commodity, the government decided to expand mushroom production areas from 78 hectares in 2010 to 340 hectares in 2020. New areas will be developed in accordance with mushroom strategic plan for higher-value commodities. Another strategy that has been formulated in the Malaysia National Agro-Food Policy (2011-2020) is to increase the total productivity from 190 mt/ha (2010) to 193 mt/ha (2020).

The Ministry of Agriculture, and Agro-based Industry take the opportunity from the higher demand for mushrooms in the local and international markets. Thus, some strategies for strengthening the mushroomsw industry in Malaysia are as follows:

1. Improve production system.

Currently, farmers use sawdust from rubber wood, rice bran and lime as the substrate. The price of these raw materials always increases because of shortage in supply in certain states such as Kelantan, Terengganu and Selangor. Assessment of other substrates, including palm oil by products, cotton waste or sawdust from timber needs to be done to replace the rubber wood. Other media such as Cobs of Corn (*Zea mays*) is found to give very high returns for mushrooms.

2. Establishment of mushroom bag centre.

The production of mushroom bag will be carried out by the Department of Agriculture in Malaysia. The mushroom bags will be distributed to farmers. The establishment of the mushroom bag centre is crucial to ensure that mushrooms are produced in protected environment and are cost effective . This approach will also control the market price of raw materials such as sawdust prices, plastic bags and others to maintain quality and standard.

3. Expansion of land area and increase productivity.

Currently production of mushroom is by small-holding farmers. Malays will transform this industry to be a commercial industry with high-tech production system for higher productivity and produce better quality. At the same time more land will be opened for mushroom cultivation, especially on idle land or integrated cultivation with other crops. R&D for production system and breeding new variety will be intensified.

CONCLUSION

Mushroom is an important commodity for income generation. Even though mushrooms are relatively small and new industry, it has the competitive advantage to compete in the international markets. However, this industry is facing some issues and challenges related to production and government policies and initiatives that need government intervention. The main constraints are found to be related to low quality seeds and increase in production cost. The industry requires new high-technology that uses less labor and produces higher productivity. Malaysia needs new and high-quality seeds for commercial-scale production system so that the management is more efficient and effective. At the same time, Malaysia needs new incentives and policies that can encourage investors to venture in this industry. This includes the R&D, technical and financial assistance and regulating the markets.

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