

TRENDS OF HERBAL CULTIVATIONS IN PENINSULAR MALAYSIA

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ABSTRACT

Malaysia, which is located near to the equator, is blessed with mega biodiversity of tropical forest. The forest holds thousands species where it depend on each others to survive. Our rainforest also known as ‘jungle of pharmacy’ as the forest enrich with more than thousands plants that have been identified containing medicinal value. In line with the world awareness in switch towards natural products, our government has identified herbal industry as potential area to further develop in the agriculture sector and also the GDP of the country. Under National Key Economic Area (NKEA), in transitioning from agriculture to agribusiness, the first entry point project is unlocking value from Malaysia’s biodiversity through high-value herbal product. In order to develop high value herbal product, we should know the strengths and weaknesses of our herbal industry such as the availability and the quality of the raw materials. A survey was conducted from September 2014 to February 2015 to identify herbal cultivators in the whole Peninsular Malaysia. The information was gathered based on structured questionnaire through face-to-face interview. A total of 462 cultivators were indentified. The highest cultivators based on species are Roselle (*Hibiscus sabdariffa*) with 88 cultivators. Some other species that famous among the cultivators are Sirih (*Piper betle*), Karas (*Aquilaria spp.*) and Misai kucing (*Orthosiphon stamineus*). From this study, we figured out main three aspects to be considered in this herbal cultivation, which are the plant life cycles, cropping systems and the cultivator’s mode of operations. The identified trends and scenario of the herbal cultivators in Peninsular Malaysia will help the stakeholders and the government to strategize the development of herbal industry.

Keywords: Herbs, herbal cultivators, herbal industry, raw materials, Peninsular Malaysia.

INTRODUCTION

Traditional knowledge on the herbs applications for healthcare and traditional medicines has been passing from generation to generation by our ancestors. Consumers nowadays are highly concerned on the use of natural ingredients in their products. Based on the increase of annual expenditure in the use of traditional medicine from USD 4.4 billion, 2004 to USD 7.4 billion, 2009 in Republic of Korea and a total of USD 14.8 billion natural products expenditure in United State, WHO stated that the market for traditional medicines is substantial (World Health Organization (WHO), 2013). This shown that there are increasing demands in health supplements and medicines traditionally use natural based as one of the ingredients.

The countries in South-East Asia are using traditional medicines extensively. India is one of the country that has a large proportion of the population that use traditional medicines to meet their primary health needs in the rural area (World Health Organization (WHO), 2004). As a result, the Indians are seriously engaged in the cultivation of the medicinal plants. Shortage of medicinal plants as herbal products raw materials may prevent the manufacturers/producers to operate at the optimum capacity. The cultivations of herbs or medicinal plants are also important to sustain the supply of good quality of raw materials (Pati, et al. 2013). Furthermore, the success on establishment of herbal industry may help in empowering local communities through job opportunities, boosting trade and contribute to the betterment of health (Kala, et al. 2006).

In 2001 the Global Diversity Outlook recognized Malaysia as one of the 12 mega-diversity countries of the world. Burkill (1966) stated that there are 1,200-1,300 medicinal plants in Malaysia and out of 12,500 seed plants and 5,000 species cryptogams, about 2000 species have been claimed to have medicinal properties (Latiff, 1994). The present of herbal materials in Malaysia are mainly from the natural forests or imported from neighboring countries (Rasadah, 2005). To strengthen and sustain our herbal industry, high dependence on the natural forests for the raw materials should be avoided. In line with the Malaysian Economic Transformation Programme (ETP) under the agriculture sector, an Entry Point Project (EPP) number one was introduced with the aim to unlock the value from Malaysia biodiversity through creation of high-value products. In order to achieve the target, the herbal industry needs to have sufficient raw materials. Dasar Agromakanan Negara (DAN) also projected 15% growth of herbal cultivation per year with a total of 4,000 hectares planted in 2020 (Kementerian Pertanian dan Asas Tani (MOA), 2011).

METHODOLOGY

The value chain in the Malaysian herbal industry has been classified into five groups of actors, namely the planting material suppliers, cultivators, manufacturers/producers, wholesalers and retailers. The target respondents for this study were all the players involved in the value chain. A census survey was conducted across the Peninsular Malaysia that included 12 states. A total of 6,545 respondents were surveyed via face-to-face interview using structured questionnaire.

One of the objectives of this study is to determine the supply and demand of the raw materials and herbal products. This paper will discuss on the trends and productivity of the herbal cultivations in Peninsular Malaysia to answer the status of current production (in term of number and areas) and opportunity to further develop the herbal cultivations industry.

The questionnaire captured informations such as business locations, backgrounds of business entities, and nature of business. The information gathered from the questionnaire was analyzed using SPSS.

RESULTS AND DISCUSSION

From the survey, a total of 462 cultivators were identified in Peninsular Malaysia. Six most planted species in Peninsular Malaysia are Roselle (*Hibiscus sabdariffa*), Sirih (*Piper betle*), Karas (*Aquilaria spp.*), Misai kucing (*Orthosiphon stamineus*), Belalai gajah (*Clinacanthus nutans*) and Tongkat ali (*Eurycoma longifolia*) with the total number of cultivators by 88, 80, 70, 37, 29 and 26 respectively. From those species, Karas is the most planted species in term of areas with a total of 627.9ha (**Figure 1**).

Syazni, et al. (2015) found that most of the herbs were planted in Pahang, Selangor and Johor with a total number of 110, 83, and 69 cultivators respectively. **Figure 2-4** presents the number of cultivators and the total cultivation areas

based on the six most planted species in those three states. Karas and Belalai gajah are the two species that included in the top six species planted in all the three states. Karas has the biggest cultivation areas in Johor and Pahang with the total of 422.9ha and 20.8ha respectively. Roselle (52), Sirih (65) and Karas (17) are the famous species planted in Pahang, Selangor and Johor. The total cultivation areas of Roselle in Johor and Pahang are 25.6ha and 16.2ha. While the total cultivation areas of Sirih planted in Selangor and Johor are 15.1ha and 1.2ha.

Figure 1. Herbal species planted in Peninsular Malaysia

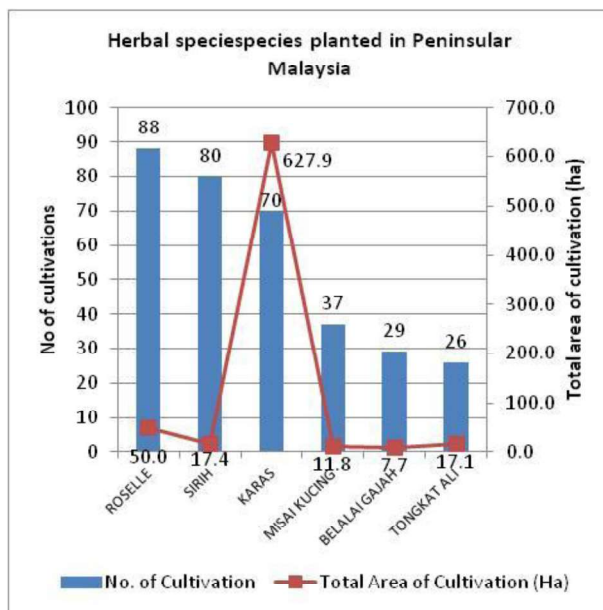


Figure 2. Herbal species planted in Pahang

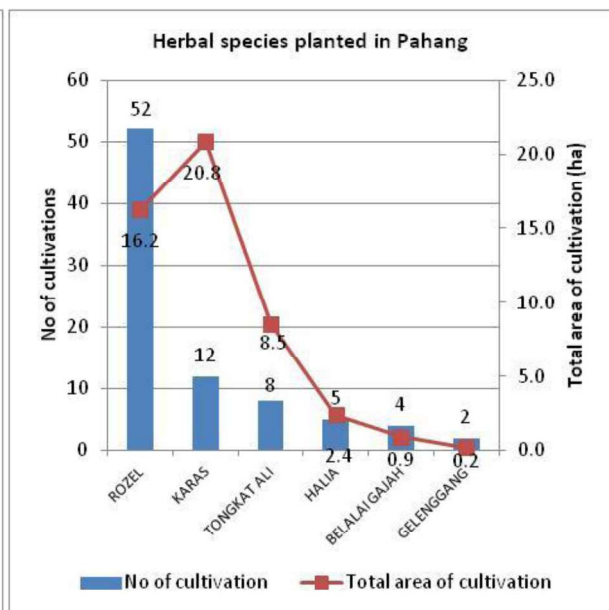


Figure 3. Herbal species planted in Selangor

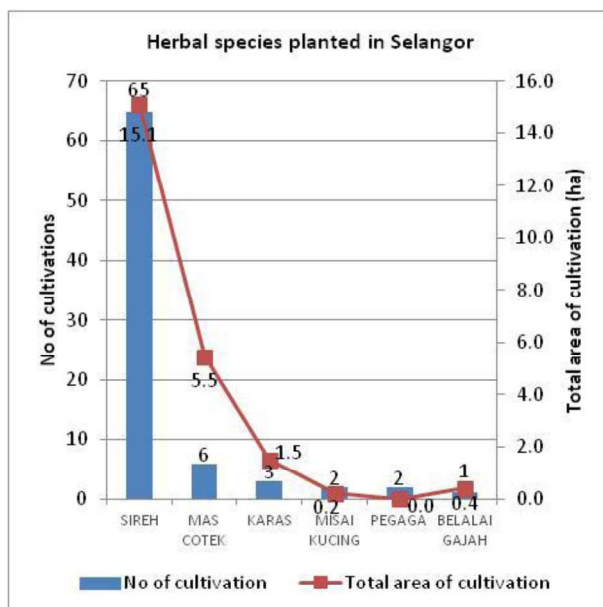


Figure 4. Herbal species planted in Johor

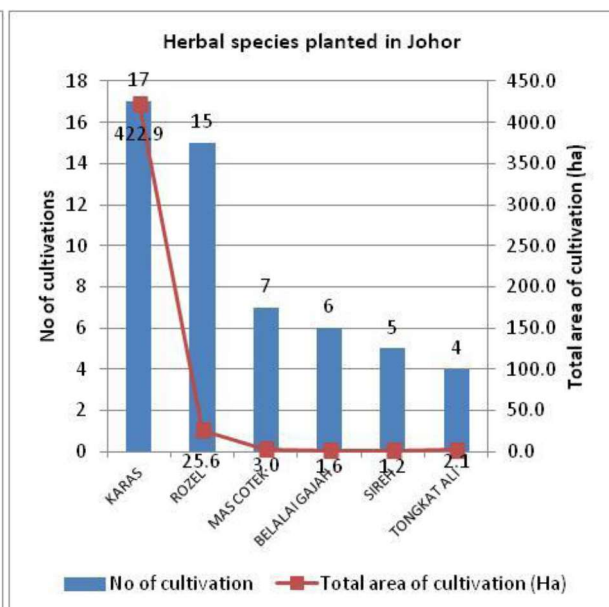


Figure 5 shows the number of six most planted herbal species based on cropping system. Most of the cultivators use monocrop cropping system for Roselle, Sirih and Karas. As opposed, the cultivators of Misai kucing and Belalai gajah are found to use multicrop cropping system. In practice, monocrop cropping system, only focus on one species in a time while multicrop system practically planted several species on the same land, in the same time.

Figure 5. Number of cultivators based on herbal species planted and cropping systems

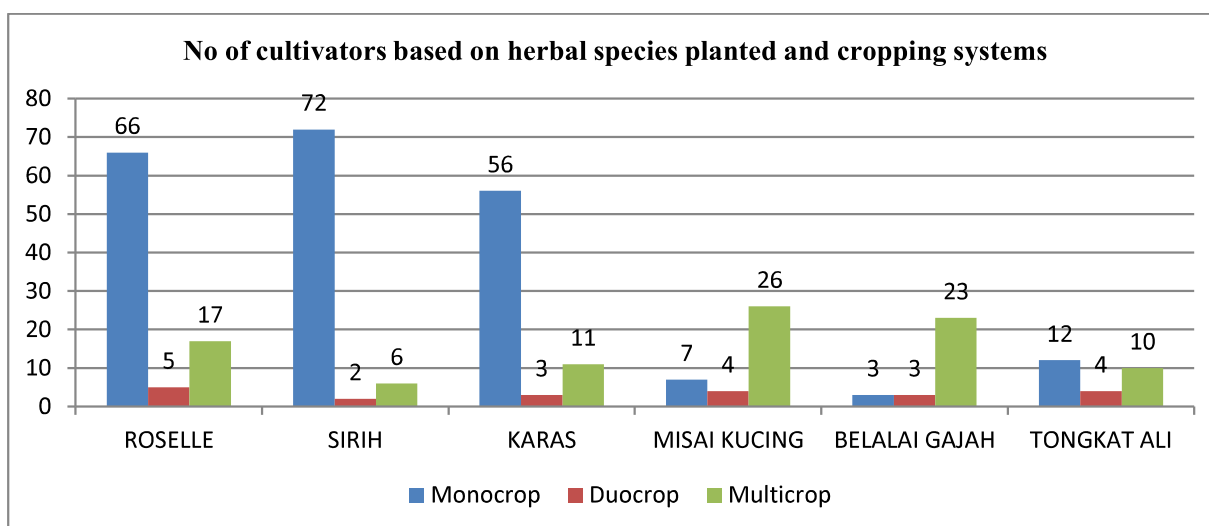
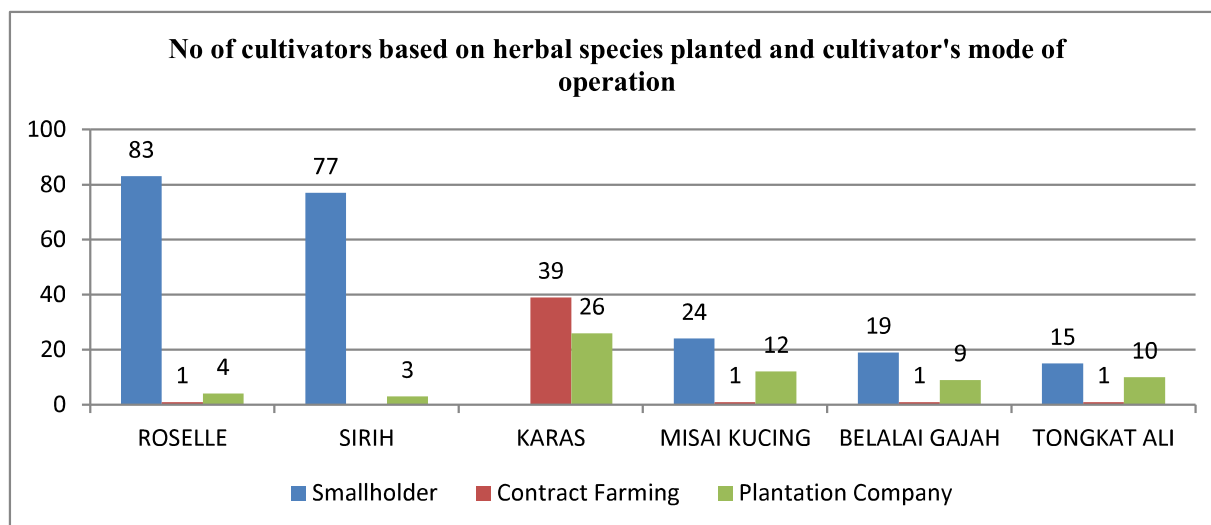


Figure 6 shows the number of six most planted species based on their cultivator's mode of operations, which are smallholders, contract farmings or plantation companies. Most of the cultivators in **Figure 6** are smallholders (65%). However, most of the Karas planters are contract farmings (39) followed by plantation companies (26). These can be the reason for Karas has the largest area of cultivations, as the plantation companies are capable to invest in large plantations. Furthermore, even though Karas take several years to produce *gaharu*, they are still generating income by producing other herbal based products from the leaves of the Karas trees.

Roselle and Sirih were cultivated mostly monocrop by the smallholders. The smallholders involved in the cultivations are usually from the same location (*penanaman berkelompok*). They only focus on one species and involving the locals in the cultivations. The systems are able to produce abundance of raw materials for herbal products manufacturers.

Figure 6. Number of cultivators based on herbal species planted and cultivator's mode of operation



From the six most cultivated species in Peninsular Malaysia, only Karas and Tongkat ali are long-term crops. The rest are short-term crops that can be harvested several time in a year with non-destructive harvesting process.

CONCLUSION AND RECOMMENDATION

From this study, it seem to be most potential to invest in the cultivation of fast growing species which can be harvested within a year and it is also encouraged to practice the group farming (*penanaman berkelompok*) or contract farming for a better return. Other than producing large amount of raw materials, it is also able to help the communities to improve their life and at the same time support the government programmes. This study also shows that the monocrop cropping system with fast growing species is preferable by the cultivators since it is theoretically easy to manage.

An example of species that the cultivators or investors can look into is Kacip fatimah. Kacip fatimah is the species that traditionally used (especially by women), scientifically proven and have the potential to compete at the ASEAN level (Marzalina, et al. 2015). From the survey conducted by FRIM, 57% of the herbs and herbal-based products consumers are female (Siti Zubaidah, et al. 2016). Meanwhile, the finding from this study shows that only few cultivators planted Kacip fatimah.

Further study on the price of the herbal products raw materials is also important to the herbal industry. Competitive price is also an important factor to avoid the cultivators giving up in this industry.

REFERENCES

- Burkill, I. H. (1966). *A Dictionary of the Economic Products of the Malay Peninsula*. 2nd ed. Kuala Lumpur: Ministry of Agriculture and Cooperatives.
- Kala, C. P., Dhyani, P. P., & Sajwan, B. S. (2006). Developing the medicinal plants sector in northern India: challenges and opportunities. *Journal of Ethnobiology and Ethnomedicine*, 1-15.
- Kementerian Pertanian dan Asas Tani (MOA). (2011). *Dasar Agromakanan Negara 2011-2020*. Putrajaya: Bahagian Perancangan Strategik dan Antarabangsa, MOA.
- Latiff, A. (1994). *Conservation of medicinal and aromatic plants resources through in situ and ex situ methods*. Kuala Lumpur: Country paper for Malaysia. Report of the Second Regional Meeting of Asian Region Country on G-15 Gene Bank for Medical and Aromatic Plants Project.
- Marzalina, M., Ariff Fahmi, A. B., Rohana, A. R., & Rosniza, R. (2015). Menyusun Strategi Berpanduan Fakta Rantaian Nilai Industri Herba. *Persidangan Industri Herba 2015* (pp. 21-25). Putrajaya: FRIM.

- Nur Syazni, A., Rohana, A. R., Ariff Fahmi, A. B., Nur Fazreen, Z., Siti Zubaidah, S., & Marzalina, M. (2015). Distribution of Herbs Cultivation in Peninsular Malaysia. *Persidangan Industri Herba* (pp. 318-323). Kuala Lumpur: FRIM.
- Pati, A. M., Singh, S., Ram, D., & Ahuja, P. (2013). Study on the problems and need of the herbal industry in H.P. *International Journal of Scientific Research* , 399-402.
- Rasadah, M. A. (2005). Hanerssing the Cures frim Malaysian Rain-Froest. *6th National Congress on Genetics*, (pp. 4-9). Kuala Lumpur.
- Siti Zubaidah, S., Rohana, A. R., Hin Fui, L., & Rosniza, R. (2016). *Consumer Preferences on Herbs and Herbal-Based Products; Facts and Figures*. Selangor: FRIM.
- World Health Organization (WHO). (2004). *Guidelines for the Regulations of Herbal Medicines in the South-East Asia Region*. New Delhi: World Health Organization (WHO).
- World Health Organization (WHO). (2013). *WHO Traditional Medicine Strategy: 2014-2023*. Hong Kong SAR, China: World Health Organization (WHO)