DEVELOPMENT OF PRODUCTS FROM SUGAR PALM TREES (ARENGA PINNNATA WURB. MERR): A COMMUNITY PROJECT

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Abstract

This project is concerned with the development of products from sugar palm tree *(pokok enau)* under the UCTC-NBOS program and was funded by the Ministry of Education Malaysia under the 8th National Blue Ocean Strategy (NBOS). This community project was carried out in collaboration with the *Jawatan Kuasa Kemajuan dan Keselamatan Kampung (JKKK)*, Kampung Kuala Jempol, Bahau, Negeri Sembilan. Twelve products including sugar palm syrup, sugar palm sugar block, sugar palm fine sugar, sugar palm fruits, sugar palm vinegar, broom, general cleaning brush, bottle cleaning brush, rope, sugar palm fibres, sugar palm starch, and roof have been developed in this community project. The main objective of this project was to help villagers to develop and commercialize the sugar palm products, which, in turn improved their socio-economic level. Villagers from Kampung Kuala Jempol were excited with this project as 'wastes' in their village had been converted into 'wealth'. Knowledge transfers of various methods and technologies had been conducted through a series of demonstration. The major advantages resulting from this project were achieved in all aspects including cost and quality of product produced, as well as transferring university expertise to the community.

Introduction

Sugar palm (Arenga pinnata wurb. merr) trees had been around for making variety of by-products for hundreds of years (Tomlinson, 1962). In Malaysia, it is popular activity among villagers to tap palm sap for making traditional sugar blocks locally known as gula enau or kabung (Ishak et al. 2011a). There are three main objectives in this project; i.e. to transfer the knowledge for the development of products based on sugar palm fibres, to transfer the knowledge based on sugar palm tree (other than fibres), and to help the local community in commercializing and marketing the products. From this project, the village community was exposed to the potentials of sugar palm tree that was usually known for only making food items and beverages. At the end of this project, the community continued the process of collecting and making products based on sugar palm trees and marketing them throughout Malaysia.

UCTC-NBOS project was successfully completed within one year and three months with total cost of RM 156,100.00. The entire fund was spent to transfer the expertise to generate skill and knowledge about sugar palm tree and it products to the community and to ensure it sustainability. Through this project, the funds were not only allocated for holding talks, exhibition and demonstration to the community (Figure 1), but also providing equipment including a building in the form a shed for the purpose of producing sugar palm products.

Figure 1: A series of demonstration to the community on how to obtain sugar palm starch and sugar palm fibres

Traditionally, sugar palm sap was processed for making traditional sugar blocks and was processed in the forms of crystal and brown sugars as alternatives to the commercialized sugarcane granular sugar. It was also fermented to produce bioethanol for production of varieties of products (chemical products, solvents, pharmaceutical, medicines, beverages, etc. and would also be used for production of biofuel. The next important part after palm sap is its fruit. It can be processed for making pickles, juices, desserts, for canned foods, and also being cooked for making traditional sugary syrup. There were other commercial purposes of sugar palm such as production of sago and its hard wood (Ishak et al., 2011b).

However, the most important part after its palm sugar and it fruit is its fibre. Its black fibre or locally known as ijuk fibre was used for making ropes, brooms, brushes, paint brush, septic tank base filter, roofing, fishing tools and for handicrafts (Sastra et al. 2006, Bachtiar, et al. 2008 and Leman, et al. 2008).The project team had successfully developed 12 products based on sugar palm trees namely sugar palm fibre, starch, roof, rope, brooms, brushes (berus sabut), brushes for cleaning bottles, vinegar, fruit, liquid sugar, fine sugar, and sugar block (Figure 2). In the project, all products were realized along with packaging.

Fig. 2: Twelve products produced from sugar palm tree

A lot of efforts had been put into the project, including a visit to a company involving in commercializing sugar palm fibre products in Indonesia; this visit had greatly benefited to the development of the project. The visit was organized by the project research team to obtain more practical information about sugar palm fibre industry in CV. Mulya Perkasa, Tasikmalaya, Indonesia, which had a wide and long experience in producing sugar palm fibre products. From the visit, practical knowledge on how to produce brushes, brooms, roof and the rope was brought back to Malaysia. In addition, the team also visited Kampung Naga, Tasikmalaya, Indonesia, to study the use of sugar palm fibres as the roofing materials, which was very important to be highlighted in Malaysia. The quest for traditional touch in decoration of buildings in Malaysia is increasing as the existence of holiday resorts, which choose traditional materials to build gazebos, cottages and chalets. After returning to Malaysia, the team shared the information and products to the villagers in Kampung Kuala Jempol and this made them more eager to run the project by themselves. It was quite a challenge to convince the communities at first, especially the younger generation that this project has a great potential and it was really the villagers who is supposed to make it to happen.

From the first launch of the project until handing over the technology, machinery (Figure 3) and a building to the community, it was observed that a lot of people were getting involved and more participation from the community in this project because it can help them to generate extra income. The increase in participation was more significant when a building in the form of shed with traditional features was built. The building (Figure 4) was built with traditional features with the purpose of attracting more visitors to come and they can experience the process of preparing sugar palm products first hand. Besides that, the visitors also can buy the product directly.

Figure 3: Among the machines used to make sugar palm products

Figure 4: A building for the purpose of collecting, processing and commercializing of sugar palm products

The villagers were impressed with this project after seeing the seriousness of the UPM team and the project will be registered with the state's tourism department to promote Kampung Kuala Jempol as a tourist attraction as well as to respond to the government's call for *"One District One Industry"*. The project also promoted the name of Kampung Kuala Jempol as a new attraction for tourists in Negeri Sembilan.

Conclusion

The potential of sugar palm tree were successfully explored under UCTC-NBOS project. Twelve product were developed in this community project; i.e. sugar palm syrup, sugar palm sugar block, sugar palm fine sugar, sugar palm fruits, sugar palm vinegar, broom, general cleaning brush, bottle cleaning brush, rope, sugar palm fibers, sugar palm starch, and roof. With total cost of RM156 100.00, this project succeed in providing the knowledge, skill, equipment including a building for the benefit of the community. This project also become one of the tourist attraction in Kampung Kuala Jempol, Negeri Sembilan.

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