

Coconut Sugar Craftsmen Business Group in Wonosobo- Banyuwangi Village As a Helicos Center (Healthy Coconut Sugar)

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Submission date: 17-Apr-2023 09:41AM (UTC+0700)

Submission ID: 2066596980

File name: rniawati,_R_N_Karimah,_A_AL_Suryana,_P_Destarianto,_H_Oktova.pdf (740.71K)

Word count: 2270

Character count: 12347

Coconut Sugar Craftsmen Business Group in Wonosobo-Banyuwangi Village As a Helicos Center (Healthy Coconut Sugar)

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Abstrac

The partner village development program (PPDM) has been carried out about the production of ant sugar from coconut sap in the village of Wonosobo, Banyuwangi Regency as a college partner. This activity is intended to assist government programs in the development of coconut sugar products into Healthy Coconut Sugar (Helicos) products. This is expected to be the main icon and driver of the Village to become the center of Helicos products.

The service program activities are carried out on April 16 - July 4, 2018. In the implementation of this activity, participants who work as print palm sugar producers participated. With this activity, partners get new understanding and skills in making innovation-based palm sugar. Community service is carried out by coaching partners through diversification of coconut sugar products into Helicos ants, improving product quality by applying hygiene-sanitation, K3 during harvesting, processing and storage.

The results of the dedication program can be seen from: 1) skills and safety improvement for coconut climbers with the help of coconut climbing equipment; 2) the ability of partners in handling the correct post-harvest of coconut juice; 3) ability to produce ants sugar by crystallization method using the help of a crystalliser, dryer cabinet (cabinet dryng) and penepung (disk mill), so that the sugar is ready to be packaged. The use of tools or machines in the manufacture of ants sugar will help increase production capacity, reduce labor costs and maintain the quality of ant sugar. This can increase income, consumer acceptance and expand marketing.

Keywords: coconut, palm sugar, Wonosobo Village

Introduction

Indonesia has a land area for coconut plants reaching 2.870 million ha of the total area of coconut trees in the world of 11.909 million ha (BPS, 2017). Most of the coconut plants are used as a producer of sap which is the raw material for coconut sugar. Coconut sugar production capacity reaches around 120,000 tons per year (Suliyanto et al, 2012).

One of the product diversification from coconut juice is ant sugar. Ant sugar is coconut sugar which is crystallized through longer cooking compared to coconut sugar. Based on information from the Minister of Industry (Menperin) that Indonesian ant sugar products are increasingly in demand by the international market with export value reaching 48 thousand US dollars in 2017 than before in 2014 only 34.7 thousand US dollars (Kompas, 2018). Ant sugar can be relied upon to replace sugar cane. Ant sugar products have several advantages compared to coconut sugar, namely: longer shelf life, higher selling prices, easier packaging and transport because it is more compact, and has a more distinctive taste and aroma (Mustaufik and Haryanti, 2006).

Banyuwangi is one of the districts included in the list of locations of National Priority Rural Areas (KPPN). One of the superior potentials of prominent plantation production in Banyuwangi Regency is coconut with an available land area of 10,872 ha. Until now coconut sugar production has not yet developed, only 1% of the industry makes coconut sugar from the total existing industry (BPS Banyuwangi Regency, 2015). Wonosobo village is one of the villages in Srono sub-district which has great potential in increasing production and marketing of coconut sugar because it is supported by abundant coconut production. However, in Wonosobo there is no home industry that produces ant sugar.

Current conditions, coconut sugar production in Wonosobo is still intended to fulfill soybean factory stock and the needs of local traditional markets. The public is not aware of the importance of developing the potential of ant sugar production. The underlying problem is the lack of knowledge and technology for processing coconut juice into palm sugar, product packaging and marketing. In addition,

the number of human resources that are minimal and not optimal is the role of existing community groups in developing the production of ants sugar.

Besides being able to increase economic value and shelf life, ant sugar has other advantages in the health sector with a low gligemic index (GI) compared to sugar (sucrose). The low GI value is very beneficial for health, especially for patients with type 2 diabetes mellitus. Therefore, the innovation of making palm sugar in Wonosobo Village has the potential to become a center of Healthy Coconut Sugar (HELICOS) products.

The partner village development program aims to: apply the research results of universities in the field of food and health, improve the welfare and standard of living of the community through diversification of coconut sugar products into Helicos ant sugar, educate business owners and consumers about the benefits of Helicos products as an alternative diet choice for sufferers diabetes mellitus and realizing Wonosobo Village kab. Banyuwangi becomes the center of Helicos.

Target and Output

The targets to be achieved from the implementation of this activity are: (1) Increased understanding, ability and skills for the partner group in diversifying coconut sugar into Helicos palm sugar, 2) Improvement in the process of harvesting and storing raw materials and processing Helicos products, (3) The availability of healthy coconut sugar preservative free with a low glycemic index, can be for the choice of sugar substitute for people with diabetes mellitus, (4) the realization of the village of Wonosobo, Srono District as a village center Helicos in Banyuwangi district, (5) Recognition of Helicos products to the public or consumers Banyuwangi Regency. Luaran Kegiatan

The outcomes to be achieved in this activity are: (1) technology dissemination and opening up partners' insight in terms of diversification of processed palm sugar into palm sugar, (2) Empowering the surrounding community by providing added value and economic value in the development of coconut sugar products, (3) Grant equipment for the production of ants sugar to partners to increase

the production capacity of ant sugar, (4) Provision of Helicos product information to the public or consumers through mass media, (6) Scientific Journal as a form of Tri Dharma implementation by the Implementation Team.

Implementation Method

In implementing partner village development programs, it is carried out in several steps, namely:

1. Stage of preparation and coordination with partners. In this preparation phase the proposer team together with the partners discuss the constraints that exist in the field and make a solution agreement that will be outlined in the partner village development program. In addition, the target or target of the participants who will participate in this program and the priority of the location that will be used as the center for producing Helicos.
2. Study of research literature. This stage aims to collect the results of food and health research related to coconut sugar to determine science and technology that are suitable to be applied as a solution to partner problems. In addition, it also aims to compile references for trainings on the concept of health-based coconut sugar, postharvest handling and coconut processing technology into Helicos products.
3. Empowerment of human resources and development of partner coconut sugar sugar products through health-based product innovation. Human resource empowerment efforts are carried out by providing training to increase the capacity of partners' knowledge and skills in the postharvest handling, coconut sugar production and diversification of coconut sugar products. The development of coconut sugar products is carried out with the innovation of Helicos sugar production using tools or machines.
4. Improving the quality of production through the application of science and technology. Production quality improvement is carried out by implementing a product quality control system as an effort to prevent contamination and the products produced are of good quality. This is done by providing education to identify critical points starting

from the tapping and harvesting of the sap, the process of processing the sap into the sugar of the ants and the cleanliness of the place and the means of production.

5. Assistance with Helicos production. Assistance is done to ensure the readiness of partners to be able to produce Helicos well. The activity starts from the post-harvest handling of sap, the production of sugar ants using tools or machines and the application of good food production methods (CPPB).

Results and Discussion

Coordination with partners was carried out as a form of planning for the development of the sugar business in Wonosobo Village as a Helicos center. In addition, comprehensive information is extracted from the partners about the problems in the field.



Figure 1. Taking sap

Taking sap is still done with human power with no regard to safety and safety. Every day climbers take sap from 20 coconut trees. The risk of work accidents in harvesting often occurs, so special safety equipment is needed in taking sap.



Figure 2. Coconut sugar production house

Coconut sugar processing conditions from the partners pay little attention to hygiene and sanitation. Sugar production is also still done traditionally, which uses a lot of human power. This will have an impact on product quality and production efficiency. The low knowledge of partners in handling sugar production from harvesting sap to marketing is a major problem in the development of diversification of ant sugar products.

The training was attended by the three partners plus a number of participants who were also coconut sugar craftsmen in Wonosobo Village.



Figure 3. Training in sugar production

The training was provided by the team to partners to improve partner understanding related to handling raw materials for sap, sugar crystallization techniques, good sugar production methods with regard to hygiene, introduction of palm sugar production equipment or machines and knowledge of coconut sugar based product diversification. Penyerahan peralatan produksi Helicos

Sugar production equipment or machines are expected to answer the problems that occur in partners and as a support in Helicos production.



Figure 4. Coconut climbing tools

The coconut climbers are expected to be a solution to the prevention of the risk of workplace accidents for coconut tree climbers during the harvesting process of the sap.

The sugar crystalliser tool (Figure 5) has a capacity of 20 liters. The tool was designed automatically using electric power combined with LPG to stir and heat the sap into ants sugar. The use of these tools can replace the stirring process, which has been done manually using human power. This can increase production efficiency and quality of Helicos sugar products



Figure 5. Sugar crystallizers



Figure 6. Cabinet dryer

Dryers (Figure 6) function to reduce sugar water content up to 2-5%, so that dry sugar is obtained which has a high shelf life. Once the drying process can accommodate 10-15 kg of sugar crystals. The dryer can be used as an alternative to drying with sunlight which is very dependent on weather conditions.

The sugar tapping machine (Figure 7) consists of a drive machine, smoothing blade and filter. The tool functions to produce more uniform sugar powder granules.



Figure 7. Flour sugar (disk mill)

Assistance is carried out starting from taking sap, handling post-harvest sap and producing sugar by using a machine to produce crystal sugar ants. Ant sugar production by partners is expected to be the forerunner to the formation of Helicos production centers in Wonosobo Village, Banyuwangi Regency.



Figure 8. Sugar crystallization process



Figure 9. Drying sugar crystals

Figure 8 is a process of crystallization of sugar using crystallisators. Stirring and monitoring of juice in the appliance is done automatically for 3-4 hours until sugar crystals are formed. The crystal sugar formed is then dried with a cabinet dryer with a temperature of 55 -60 0C for 2 hours.

The dried sugar is the result of the drying process, and then it is placed in a cupping device so that a uniform sugar crystal will be produced. The size of the crystals after sanding ranges from 18-20 mesh.

Conclusions and recommendations

Conclusion

1. Partners involved in partner village development activities are able to produce Helicos products

2. The use of sugar production equipment or machines is useful to support business, especially in increasing the production capacity and quality of ant sugar.

Suggestions

1. Maintenance of tools is needed to maintain hygiene and extend life (life time).
2. Further recognition is needed about Helicos to the community or potential consumers, so that the product can be more widely known.

Acknowledgments

For the implementation of the partner village development program (PPDM) in the first year, hereby expressed his gratitude to the Directorate of Research and Community Service Directorate General of Research and Development Strengthening, Ministry of Research, Technology, and Higher Education which has provided funding in 2018 for the service program to the community so that activities can be carried out well.

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