

THE IMPROVEMENT OF PRODUCT QUALITY THROUGH THE APPROPRIATE TECHNOLOGY FOR CRACKERS IN SMALL SCALE ENTREPRENEUR IN KENJERAN DISTRICT OF SURABAYA

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Abstract

The aim of this study is to improve the product quality through appropriate technology for Crackers in Small Businesses in Kenjeran, Surabaya. The problems which are faced by SME's Crackers in Surabaya are the low product quality and less hygiene. Besides that, the production process has done manually. They usually mix the materials using their hands, as well as in cooking materials with drums not cooking pan. that are very doubtful of hygiene and health. The method is used on this study is apply appropriate technology on production using mixer and cutter machine. The result of this study is shown that the production process become more efficient and simple. So the product better than before. The crackers' taste are more smooth and become healthy food.

Keywords: Appropriate Technology, Improvement of Quality Product



1. INTRODUCTION

1.1. Situation Analysis

Small and medium-sized Enterprises SME 's to have a significant influence on economic growth in Indonesia. It has big impact on reducing unemployment and encourage the creation of sustainable business stability. Small industries and households from 2002 to 2013 has grown about 16 % . Of the total manufactur business unit in Indonesia as many as 99.2%, a small industrial units and households, which is capable of providing employment opportunities as much as 67.3 % of total employment, while industrial manufactur contribution amounted to only 17.8 %.(BPS, 2013 Economic Census).

One of the SMEs in Surabaya, which has the potential to be developed and need assistance is SMEs Crackers (Krupuk), because crackers is one of the favourite snacks of Indonesian peoples. One of the crackers central which developed by government of Surabaya is Kenjeran area, because this area is close to the sea so that we can find many kinds of marine products such as fish, shrimp, scallops, eggplant and many others everyday that could be obtained as an ingredient in prawn crackers, shells cracker and other types of crackers.

The central of Crackers in Kenjeran is produced shell fish crackers, each member undertakes the production between 60 to 100 kg per three (3) days, because stirring process materials is done by hand and is done with a very close distance that sometimes if the agitator can sweat dripped and mixed with ingredients in the mix, its needs to give them an understanding of how to increase the production become health food and hygiene.

Based on the analysis of the situation described above, the development of this research problem states as how to improve the quality of product crackers more tasty, hygienic and interesting?

2. Theoretical review

2.1. Product quality

Product quality refers to the ability of a product or service to consistently meet or exceed customer requirements or expectations. Different customers will have different expectations, so a working definition of quality is customer-dependent. When discussing quality one must consider design, production, and service. In a culmination of efforts, it begins with careful assessment of what the customers want, then translating this information into technical specifications to which goods or services must conform (Boundless, 2016), and product quality in this study is the quality of crackers which produce by the SMEs in Surabaya.

The definition of quality is to produce products or services that can meet the needs and expectations of consumers with regard to the life of the product (Soejanto, 2009: 3). In general, the design of the experiment is divided into three main stages that include all experimental approaches, namely: (a) The Planning Stage Eksperimen (b) The implementation phase of the experiment (c) phase analysis.

After doing the three main stages then carried out experiments conducted to examine the appropriate conclusions. The purpose is to verify the experimental confirmation of the

allegations made at the time the model determining factors and interactions as well as designing parameters (factors) that optimum results of the analysis of the results of experiments on performance expected. Soejanto (2009: 32).

The product quality can be determined by the use of raw materials, the freshness of the raw material plays an important role in human health and consumer acceptance as well as in international trade. More recently, with food safety an issue of great concern in the world, determination and evaluation of the freshness of the raw materials is much more significantly in research and development (Cheng et al., 2013).

Maintaining product quality is very important for a business to increase or even maintain the continuity of a business they founded. Producing products without observing and maintaining the quality of production is the standard in their efforts, then it will affect the sustainability of their own in the future. Besides, by going to the emergence of similar businesses that may offer a better product quality. So work “Crackers in Love” is very concerned about the quality control crackers, cracker production is from the first unchanged may only change only in the packaging or wrapper for the results of production to satisfy that consumer confidence in cracker products is very good or high and the level of its sales high and buyers ended up not moving at the heart of the productions of other crackers. For that improvement of product quality is crucial in maintaining business continuity, in this study to improve the quality of products is done by applying the appropriate technology.

2.2. Appropriate technology

Right technology is a technology invented or created with the aim to further improve or make human work more smoothly. It is then able to increase the economic value as well. The technology is not only the origin but also create properly made in accordance with human needs.

The definition of “Appropriate Technology” changes with each situation. It’s not appropriate to install solar modules in a place with very little sun, a wind generator in a place with little or no wind. What’s appropriate in a large urban location is very different from what’s appropriate in a remote, isolated environment. One quality that remains the same, however, is taking care of things. In each situation, the essence of AT remains appreciating, helping, caring. Planned obsolescence, throw-away products, poor quality all go against intelligent decision-making and the true spirit of appropriate technology (Steve Troy,).

According to Steve Troy (2016) Appropriate technology is being mindful of what we’re doing and aware of the consequences. Appropriate technology works from the bottom up; it is not an overlay to the situation; it is a genuine grassroots solution to economic needs. In the Industrial World small businesses account for more technological advances in their areas of expertise than government supported researchers or research departments in massive corporations. Third World craftspeople, farmers and other villagers invent, create, and contribute to the technological process of their area much more than outside “experts” do.

The idea of appropriate technology is that local people, struggling on a daily basis with their needs, understand those needs better than anyone and can therefore suggest or in fact, invent the technological innovations necessary to meet those needs. Not only that, local people can prioritize solutions to save precious funding and labor. Planners and those who want to help



others grapple with food and energy problems are wise to include local people in the early stages of project vision. The result is consistency in the carry-through of the work by locals and continued maintenance and interest in the well-being of the project over the long haul.

The purpose of this study is to developing appropriate technologies for SMEs production of crackers in the village of Larangan, Surabaya City with a view to improving their welfare through improved product quality and marketing strategies so as to increase profits and improve their welfare. Appropriate Technology are designed to meet the needs of SME's, potential resources and capabilities of SMEs as users so it can be used optimally in improving business profits, in the assessment of appropriate technology applied in the production of crackers so as to get a better product quantity.

3. Research Methods

The study was conducted using qualitative method in which analysis was done by applied of appropriate technology. This activity started with coordination, planning, procurement of equipment to operation of the device. Implementation of these activities are done on small business group of fish crackers with material shells consisting of 5 (five) entrepreneurs are taken by purposive sampling technique, to the shells crackers business, then given the appropriate technology than observed on improvement the quality of the product.

4. The Results of the Study

4.1. Implementation of the Appropriate Technology

This activity is carried out by providing assistance in the field of improving the quality of production of crackers, business management, marketing, and financial accounting, as well as the development of appropriate technologies to small and medium enterprises in the fields of cracker shells in Kenjeran, Surabaya.

The event begins with coordination with the owners of Small Business Production crackers which consists of four (5) owners. Coordination where conducted to determine the activities to be carried out and the technology that was developed in an attempt to overcome the problems faced by the partners.

The implementation of the activities carried out, the results achieved are as follows:

a. The availability of appropriate technology in the form of one (1) unit as a mixer Crackers material machine, with capacity of 30 kg flour. This is done to meet the quality crackers are still unable to compete in terms of physical manually created by hand so it is less efficient in terms of time and cost as well as his form less refined crackers.

b. The availability of appropriate technology in the form of one (1) unit chopper machine crackers with a diameter of 6 cm, which is used as a chopping crackers. this is done to improve the quality of the products to be more subtle and can be thinner so become dry fastly and looks neat with the same slice thickness.

c. The availability of appropriate technology in the form of 5 (five) units of cooking pan with diameter of 50 cm, which is used for cooking Crackers. This meet in accordance

with the needs of SMEs in order to cook the dough crackers were they were using a makeshift pan.

d. Training was given to make crackers with machinery and raw materials healthy and hygienic. because with the help of machines mixer and chopper that must be used in the production of crackers to meet better product.

e. Training was given to make crackers with materials that are more hygienes and tasty, this is done because the cracker products have unpleasant taste since most flavorings.

4.2. Analysis of Production Process

Analysis of the production process is conducted to determine the efficiency of which were made by SME’s crackers by comparing between before using the machine and after using the machine in the production process.

In the production process which done before using the machine need 10 (ten) stages in the production process as shown in . where in the ten stages of the beginning of the cooking water mussels with spices needed such as salt, garlic and other spices then mix with flour, then waited for the cold before stir by hand until smooth and blend all the dough. The next step in the molding dough and then boiled afterwards at slicing by hand and drying.

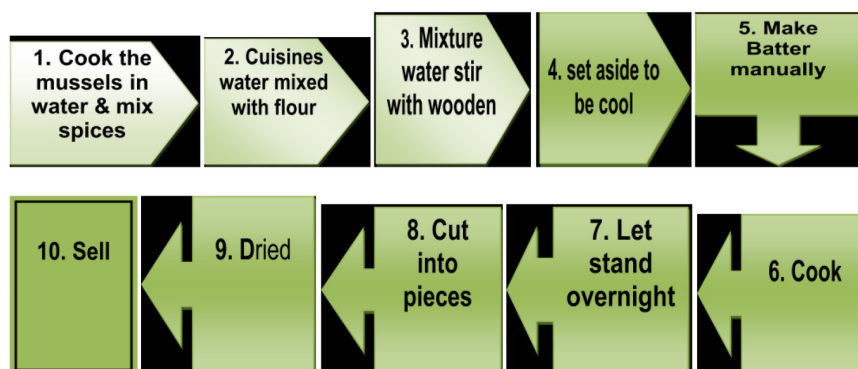


Figure 4.1: Stages of Production before the application of appropriate technology

Then after using the appropriate technology the production process becomes shorter as we can see in Figure 4.2. After using the machine becomes only 8 (eight) phase until it sells the product. thus the efficiency of the production process on time and human power, because there are three (3) phases are done by hand, but after using the machine only be one stage of the production process.

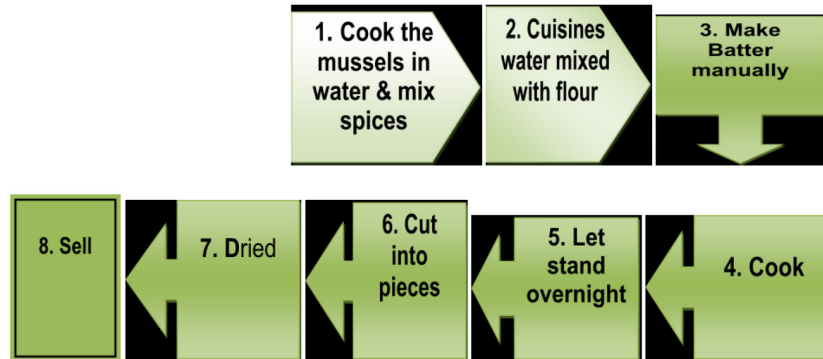


Figure 4.2: Stages of Production after the application of appropriate technology

4.3. Product Quality Improvement

Crackers is one of the favorite foods of the people in Indonesia. The food is very popular among a wide range from children to adults. So many people pursue the crackers because of potential profits generated sizable. The flavors are savory crackers with a variety of different flavors such as spicy and salted the main attraction for this cuisine so hunted lovers the ground water to be sampled.

The production of Crackers by SMEs in Kenjeran had a Poor Quality, than after production process using the appropriate technology the quality of the product become more qualified which as follows :

1. The process of mixing the ingredients become easier because it is done with a machine.
2. The dough becomes soft and easy material to be make
3. Texture crackers becomes softer
4. Taste crispy crackers are becoming good
5. Packaging becomes better so attractive to consumers

5. Conclusions

The improvement of product quality through TTG is done based on the problems faced by SME's Crackers in Surabaya. their products are not able to blossom when we fry because the process production done manually, mixing the materials of crackers by churning by hand, as well as in cooking with pot coming from the drums were very doubtful of hygiene and health.

Mentoring is done with the procurement of appropriate technology for the production in order to improve product quality of the crackers, by holding a machine Mixer material crackers, chopper machine chips and a pot to cook the dough crackers, there also given training in the production of crackers using machine and made crackers tasty and hygienes.

The result of this study were that the product become improve which the process of mixing the ingredients become easier because it is done with a machine, the texture of crackers materials becomes softer so that become easier to be make, beside that the taste crispy crackers are becoming good and Packaging becomes better so attractive to consumers.

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