

Product Standardization and Innovation of Packaging Machine Connection Worktables in Nutrition Juice Business

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Abstract— The Morela area is one of the nutmeg-producing areas in the Maluku region. The nutmeg produced is widely used by the community, especially the nutmeg flesh, namely as an ingredient for nutmeg juice. One of the producers of nutmeg juice has a problem, namely the packaging process is still traditional. Therefore, this paper will solve the problems that occur in KUD Toma Siwa. This paper aims to produce a prototype of an automatic packaging machine for both bottle filling and bottle closing as well as a machine connection workbench. For this reason, the suitable method is the research and development method or known as R&D (Research & Development). This method is usually used to produce certain products. The steps taken are first, the researcher identifies the problem and what is needed by the Partner at the Partner Location. After that, making a priority scale, then the team makes an activity design. Second, the team makes an activity plan which consists of designing the product to be made, product design trials, design training, and field trials, evaluations. And also help standardize products in the form of halal labels. Third, the team prepares the materials to make the product. The object of this activity is KUD Toma Siwa, located in Morella, Lehitu District, Central Maluku Regency. The result of this research is that it is able to produce a prototype working table connection of a packaging machine automatically for both bottle filling and bottle closing.

Keywords : *prototype, connection workbench.*

I. BACKGROUND

The Morela area is a nutmeg-producing area in the Central Maluku region, Marfin Lawalata, Stephen. F. W. Thenu and Misco Tamaela (2017), M. Lawalata (2018). The nutmeg produced can be used by the community either directly or needs to be recovered.

For, nutmeg seeds and mace are usually dried in the sun before being sold, while for the nutmeg meat, people process it first in the form of nutmeg syrup, nutmeg juice, candied nutmeg, nutmeg jam and other types of food. In this activity, they prefer processing nutmeg into nutmeg juice. This is done because in Morela there is a nutmeg juice business which has quite a number of customers, but the production process is manual both in the production process and product packaging. In the previous year, 2020, this team has assisted in this effort in the PPUD program in the form of an automation machine for the production of nutmeg juice. In 2021, this is to continue with the packaging process by producing an automated bottle filling machine and an innovative bottle closing machine with a machine connection workbench. V.A. Thompson (2005) innovation is needed in developing a business. According to Putri et al (2014) explaining innovation is the implementation of a dream that is shaped in The House Model.

The packaging process which consists of filling bottles and closing manually at KUD Toma Siwa at this time is as follows:

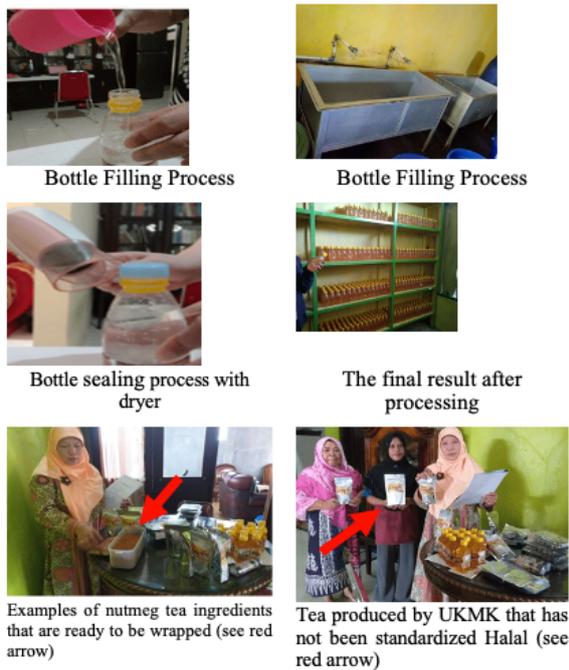


Figure 1. The process of nutmeg tea that has not received a Halal label

Based on the above phenomenon, the team has assisted in the traditional production process in 2020 in the form of an automated production machine to grind and squeeze nutmeg into nutmeg juice. Therefore, in 2021 the team will continue this activity through the PPUD program in solving partner problems, especially the packaging process which is still manual, starting from filling liquid in bottles and sealing bottles and their sizes.

In addition to nutmeg syrup produced by KUD Toma Siwa, there are SMEs under our partners also produce nutmeg flavored tea which is the result of entrepreneurship. This is in accordance with the opinion of S. Sumarsono (2010) MSEs must be able to produce a product. The tea has also been marketed to various regions, but the product has not been standardized. In the first year we helped standardize for PIRT, in the second year the team will help with the Halal label by MUI. The examples of nutmeg tea products are as follows:

II. RESEARCH PROBLEM

Based on the explanation above, it shows that the problem with KUD Toma Siwa partners is that the equipment used to make packaging, namely in the form of filling bottles is still manual, namely by using a funnel so that the size of the contents of each bottle is not the same (by left) and the method of closing the bottle is still manual, namely by using a headdriyer other than that. different packing sizes. Therefore, on this occasion we as a servant plan to help innovate packaging machines, especially for the process of

filling bottles and closing bottles automatically with a machine connection workbench and a machine capacity of 450 watts each.

Meanwhile, for the Nutmeg Tea UKMK, the problem that arises is that the standardization of products in the form of halal labeling has not yet received a permit. Therefore, on this year's occasion the PPUD team also collaborated with MUI to test standardized products, namely the Halal label.

III. RESEARCH METHODOLOGY

This paper aims to produce a prototype of an automatic packaging machine for both bottle filling and bottle closing as well as a machine connection workbench. For this reason, a suitable method refers to W.R. Borg and M.D. Gall (1989) is a research and development method known as R&D (Research & Development). Meanwhile, the reason for choosing this is referring to the opinion of Borg and Gall that "research & development is very powerful" strategy to improve practice [4]. This method is usually used to produce certain products. The steps of this research consist of first, the researcher identifies the problem and what is needed by the Partner at the Partner Location. After that, making a priority scale, then the team makes an activity design. Second, the team makes an activity plan which consists of designing the product to be made, product design trials, design training, and field trials, evaluations. And also help standardize products in the form of halal labels. Third, the team prepares the materials to make the product.

IV. RESEARCH RESULT

This study seeks to solve partner problems, namely in the form of manual and traditional packaging and products that have not been standardized. The packaging is innovated with an automatic machine for filling and closing bottles, so that the dose is right and has the right accuracy and speed. Innovation is very important in business development. This is in accordance with the opinion of Thompson (2005) and Ensen and Webster (in Sumarsono, 2010).

The output of this activity is a modified packaging machine with a machine connection workbench. The design form of the machine and the machine connection workbench are as follows:

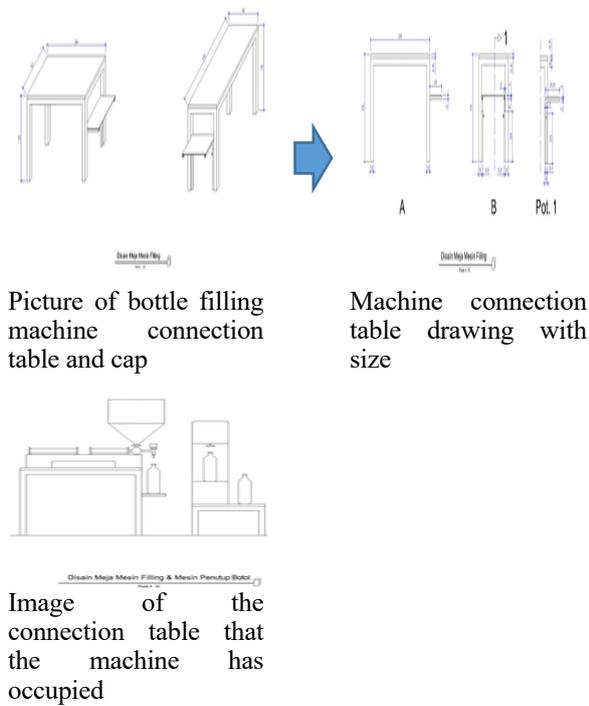


Figure 2. modified packaging machine with a machine connection workbench

The advantages of this machine are that the packaging process is carried out quickly and precisely, the time used is 60 bottles/hour and the nutmeg juice becomes more hygienic. The product, which is equipped with a machine connection table, greatly facilitates the packaging process, so that the process is interconnected and makes it easier.

V. CONCLUSION

KUD Toma Siwa as a producer of nutmeg juice, but in the packaging, process is still traditional. This paper aims to answer the problems faced by the KUD. Namely by producing a prototype working table connection of the packaging machine automatically for both bottle filling and bottle closing.

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