

## Postharvest Handling Of Sweet Potatoes In Sauce Processing CV. Sumber Sari Limbangan Kulon – Brebes

Inka Condro Istia<sup>\*1</sup>, Wadli<sup>2</sup>, Yunika Purwanti<sup>3</sup>

<sup>1,2,3</sup>Program Studi Ilmu dan Teknologi Pangan, Fakultas Sains dan Teknologi, Universitas Muhadi  
Setiabudi Brebes

e-mail: <sup>1</sup>inkacondroistia0406@gmail.com, <sup>2</sup>wadli@umus.ac.id, <sup>3</sup>yunika.purwanti@umus.ac.id

### Abstract

*Sweet potato is a potential carbohydrate producer (as an energy source) and can be used as an alternative food source. One of the varieties of sweet potato, namely yellow sweet potato which contains beta carotene, functions as an antioxidant and helps overcome cancer-causing chemicals that can damage eye tissue. The use of sweet potatoes is still limited, to increase the utility and added value requires innovation, namely by adding to the making of sauce. In the sauce production process at CV. Sumber Sari uses yellow sweet potatoes. Sauce as a thick liquid made from tomato or chili paste which can give a special aroma and taste to a food. The addition of other ingredients such as sugar, salt and food additives. The research objective was to study yellow sweet potato as an additional ingredient in making sauces. This research is expected to provide alternative uses for sweet potatoes, increase the effectiveness and added value of sweet potatoes. Processing of sauces with the addition of sweet potatoes to increase utility and added value was carried out by CV. Sumber Sari. The production process begins with cleaning of raw materials and packaging, material preparation, mixing, processing and packaging. CV Sumber Sari sauce is distributed to agents throughout Central Java*

**Keywords**— sweet Potatoes, Yellow Sweet Potatoes, Sauce

### 1. INTRODUCTION

Sweet potato is the main source of carbohydrates after rice, corn and cassava which have an important role in the supply of food and industrial raw materials. Sweet potatoes can be used as food to meet the nutritional needs of the community. Apart from producing carbohydrates, sweet potatoes are easy to find. Many variants of sweet potato are cultivated in Indonesia, from white, yellow, and purple tubers. Different types of sweet potato based on their color have their respective advantages in terms of nutritional content that is useful for the body. Red sweet potatoes contain high beta-carotene, purple sweet potatoes are high in anthocyanic content and white sweet potatoes contain high crude fiber which is very useful for metabolism. body. Sweet potatoes have a thick texture compared to other types of sweet.

potatoes (Rahmat Rukmana, 2002). Traditionally, sweet potatoes in Indonesia are generally used as snack food or snacks such as boiled, roasted, fried, chips and various wet cakes. Part of the area in Indonesia sweet potato is used as part of the staple food which is processed by steaming, frying, or grilling. So that among the people it is still considered as an inferior food (lower class) processing of agricultural commodities in sweet potatoes is still very limited to overcome this, the processing of sweet potatoes has been improved a lot. Food processing has experienced a fairly good increase in innovation. The use of tubers which are still limited in use is carried out by substitutions in the processing of foodstuffs, one of which is the processing of chili sauce. This can be used as an alternative and increase the efficiency and added value of sweet potatoes through sauce processing. There are quite a lot of processed products that use sweet potato as raw material, such as pasta, sauce mixture, chili sauce, and jam. Sweet potato has good consistency, neutral taste, the color is suitable for these products and is available all the time

## 2. RESEARCH METHODS

This research was carried out in September 2020 at CV. Sumber Sari for 30 days. This research uses a descriptive method. Data retrieval is done through observations of employees and researchers make observations at the location.

The study activities were carried out by the methods:

1. Direct Observation  
Field observations were carried out by observing and studying directly about how to process Sauce at CV Sumber Sari.
2. Interview  
Interviews were conducted to gather information and clarify a problem by asking questions related to the sauce production process to CV owners and employees.
3. Data Retrieval  
Data was collected by recording directly various information about the sauce production process from various related sources

## 3. DISCUSSION

### 1. Processing of Yellow Sweet Potatoes as Sauces

The processing of sauce with the addition of sweet potatoes is carried out in several stages including cleaning of raw materials and bottles, preparation of raw materials, mixing, processing and packaging.

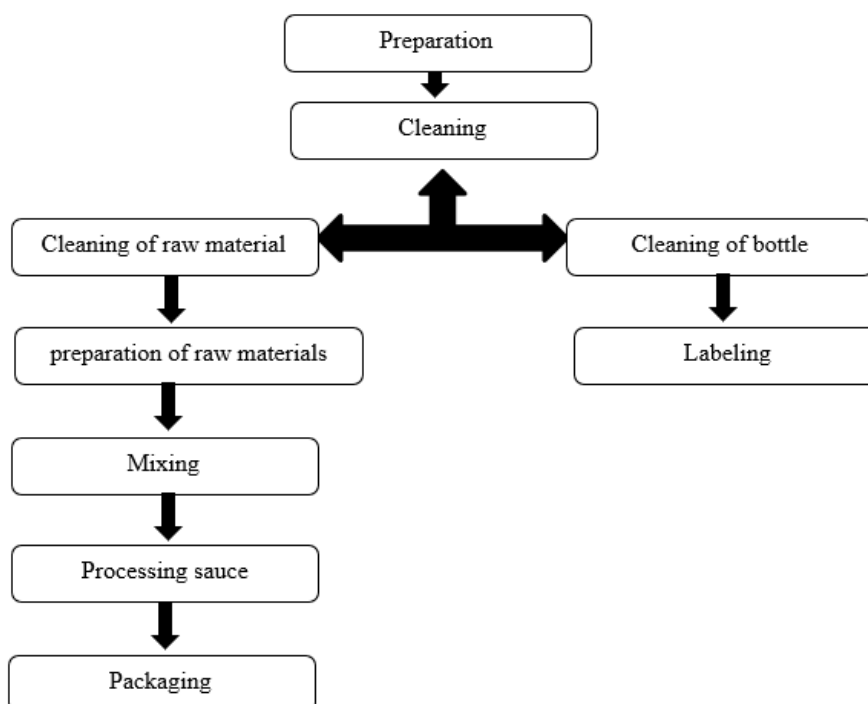


Figure 1. Stages of sauce processing at CV. Sumber Sari

Sweet potatoes are cleaned using clean water with a cleaning machine. Washing is done once with a capacity of 4 sacks. Sweet potatoes are put into the cleaning machine, then add clean water to the brim. All harvested horticultural commodities experience physical contamination, especially dust or soil, so cleaning is necessary. Cleaning is carried out with the aim of removing dirt and pesticide residues (insecticides or fungicides) (Sbiddieqy, 2012).

Food packaging serves to protect food from contamination, facilitate food transportation, facilitate food storage and inform the contents of packaged food. Food packaging materials are materials used to produce food packaging such as glass, metal, paper and plastic. According to Anwar and Gunarsa (2011), food packaging materials used today are glass, cardboard, cans and plastic. Plastic packaging with code number 01 and plastic type PET (Polyethylene Terephthalate) is a plastic package that is transparent, strong, solvent resistant, gas-tight, water-resistant, softens at a temperature of 80 °C. This type of packaging is usually used for beverage bottles, cooking oil, soy sauce, chili sauce, medicine and sauces. This type of packaging is not for hot water, it is recommended only for one time use and not for packing food with temperatures above 60 °C. Clean the bottle using clean water and soap. After going through the soaking process for 6-12 hours, the bottle is then removed from the pool and cleaned with soapy water. The purpose of using soap is to make it easier to remove any remaining sauce and labels that are still attached. Then clean the inside of the bottle again using a bottle cleaning machine. The last step is washing again and rinsing with clean water. Furthermore, the drying process is carried out naturally, namely by arranging the bottles into the container in an inverted state and leaving them for 1-2 hours.

The raw materials needed are sweet potatoes. The raw material is obtained from Kuningan district, West Java. When the raw materials arrive, they are subject to physical quality control, consisting of the level of maturity, color, defects, and texture. This process is carried out by sorting the raw materials, if there are findings that do not match the qualifications then the raw materials are returned. Raw materials that have good quality will continue the next process. This is done to obtain safe and quality raw materials. If the raw material is of bad quality, it will have an impact on production results and are not suitable for consumption. Quality becomes very important to be able to image the product as desired by consumers. The quality of the product to be sold depends on the condition of the product at the time of receipt and post-harvest management (David and Kilmanun, 2016). Sweet potato contains high nutrition so that it has good quality as a food ingredient (Ginting, et al, 2011). Yellow sweet potato flesh contains lots of beta-carotene. The yellow and orange flesh of the sweet potato is softer, while the purple and white flesh of the sweet potato is usually denser and drier. (Murtiningsih & Suyati, 2011).



Figure 2. Sweet potato cleansing

The purpose of peeling sweet potato is to separate the sweet potato flesh from its skin, the inedible and unwanted parts such as defective or rotten parts are set aside. This is done to reduce and minimize contamination. Stripping will be efficient if the loss of the desired commodity is small. The stripping is done manually using a knife. Furthermore, the boiling process is intended to soften the pulp of the sweet potato to facilitate the grinding process. The boiled water will be added to the cooking process, with the aim of adding a distinctive aroma to the sauce.



Figure 3. Peeling sweet potato

The ingredients go through a weighing process to get a good sauce production, especially the addition of food additives must be weighed in accordance with SNI guidelines, such as the addition of salt, sodium benzoate, and others. The ingredients are prepared and mixed until evenly distributed. Furthermore, the processing process is carried out for 10-15 minutes. The processing uses steam power, steam power is made manually using firewood which is burned on a steam-powered engine. The stages in cooking the sauce are as follows:

The stages in cooking the sauce are as follows:

- Enter all types of ingredients such as: tapioca flour, salt, sodium benzoate, cayenne pepper, food coloring, garlic liquid and vinegar
- All materials are ground using a production machine
- After evenly mixed, add the sweet potato that has been boiled and ground
- Continue cooking until all the ingredients are evenly mixed and wait for it to boil
- After that, put the cooked sauce into the container using a vacuum machine.
- Sauce ready to pack.



Figure 4. Mixing and sweet potato process

There are several types of packaging, namely bottle packaging and 500 gr plastic press packaging. To be marketed there are 3 types of packaging including bottle packaging using crates, plastic packaging using large plastic and using cardboard. Sealing the bottles using aluminum foil can result in a tightly closed product packaging. Product packaging that is tightly closed can make the product more durable and protected from contamination. The sealing process using a sealer machine is carried out for 1 second with an average voltage of 219 volts. The sealing time is only done for 1 second so that the plastic bottle mouth does not melt during the heating process using a sealer machine (Yuliantoro, 2017).



Figure 5. Packaging

Packaging for good food has several conditions, namely it does not contain hazardous materials, the packaging must not dissolve into food ingredients, colors on food packaging must use colorants that do not fade easily, food packaging must be easy to use, packaging must not interfere with the natural odor of packaged food, packaging must be easily sanitized before packaging, and the type of packaging must be strong according to the type of food being packaged (Anwar and Gunarsa, 2011). Marketing on sauce production CV. Sumber Sari includes Sawojajar, Bulakamba, Ketanggungan, Tegal, Slawi, Pemalang, Pekalongan.



Figure 6. Pack to distribution

## 2. Effect of processing on the physicochemical sauce

According to Rosenfeld (2011), sauce is a thick liquid that is hot or cold and is used to support or add to the taste of a food. The yield of the sauce increases almost twice the initial weight of the tubers used. Sweet potato has the ability to attract water because of the amylose it contains and trap water in it when forming a gel, so that the weight eventually increases. The viscosity of the sauce has increased compared to without the addition of tubers. This is because the sweet potato starch undergoes gelatinization when heated, resulting in an increase in viscosity. The gelatinization temperature of sweet potato starch was around 75°C with a high enough peak viscosity, namely 1420 BU (Ginting et al., 2004). The length of time for cooking and the amount of material needed to be added (sugar) are also the same. The addition of too much granulated sugar will increase the viscosity of the sauce, but if too little the resulting pH is low, so it will inhibit the formation of gel when heating and the viscosity drops. Likewise heating, the longer it is heated, the more water is evaporated so that the thicker the sauce will be.

The pH value of the sauce is greatly influenced by the added vinegar acid. At low pH, the growth of microorganisms is suppressed and the generative cells and their spores are very sensitive to heat, so the product has a long shelf life. According to Anwar and Gunarsa (2011), food damage is usually marked by changes in food with its initial nature. The signs include a strong odor, stale, ammonia scent, moldy, rancid, slimy, a change in color, even a change in shape.



#### 4. CONCLUSION

Processing of sauces with the addition of sweet potatoes to increase utility and added value was carried out by CV. Sumber Sari. The production process begins with cleaning of raw materials and packaging, material preparation, mixing, processing and packaging. CV Sumber Sari sauce is distributed to agents throughout Central Java.

#### REFERENCE

- Anwar, Yuyun dan Gunarsa, Delly. (2011). *Cerdas Mengemas Produk Makanan & Minuman*. Jakarta: PT Agro Media Pustaka.
- David, J, and J.C. Kilmanun. 2016. Penanganan Pascapanen Penyimpanan untuk Komoditas Hortikultura. *Prosiding Seminar Nasional Inovasi Teknologi Pertanian*. 115-126
- Ginting, E., Joko, S., Utomo, Yulifianti, R. & Jusuf, M. 2011. Potensi Ubi Jalar Ungu sebagai Pangan Fungsional. *Iptek Tan. Pang*. 6(1)
- Mutiningsih & Suryati, 2011. *Membuat Tepung Umbi dan Varietas Olahannya*. Agromedia, Jakarta
- Samad, Y.M. Pengaruh Penanganan Pasca Panen terhadap Mutu Komoditas Hortikultura
- Sbiddieqy, M. 2012. Kontribusi Penanganan Pascapanen Wortel terhadap Pendapatan Petani Sayuran Binaan Sub Terminal Agribisnis (STA) Cigombong Desa Ciherang Kabupaten Cianjur. *Jurnal Agrosience*. 4:5 (74-84)