

## **Enhancing the Production of RECEH (Aceh's Traditional Spices) with Drying Blower Oven Technology to Support the Sustainability of the Local Food Industry**

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### **ABSTRACT**

Indonesia is renowned for its rich spices, particularly in Aceh, where they are widely cultivated. These spices are traditionally used in local cuisine, but they are often sold in wet form, requiring further processing to create practical instant spice powders. One popular seasoning is for Acehnese Noodle Cuisine, which is typically in wet form and has a short shelf life. To address this, RECEH (Acehnese Typical Spice) aims to develop natural, powdered seasonings for convenience and longevity. RECEH products will undergo laboratory testing, including nutrient content, ash content, moisture levels, and organoleptic analysis, ensuring compliance with SNI 01-2974-1996 standards. Proper storage in dry, cool conditions will maintain their flavor and quality. By meeting these standards, RECEH will be suitable for wider consumption and commercialization, benefiting local spice farmers and promoting Acehnese cuisine both domestically and internationally. This research also aims to enhance spice production efficiency and secure intellectual property rights.

**Keywords:** Instant Spices, Acehnese Spices, Drying Blower Oven Technology, Various Spices, Acehnese Cuisine, Traditional

## INTRODUCTION

Spices are a type of plant that has a strong taste and aroma and functions as a spice and flavor enhancer in food. In addition to being used in cooking, spices can also be used as medicine and raw materials for herbal medicines. Paying attention to the benefits, it is not surprising that spices are one of the commodities that have high economic value. In fact, in colonial times, the main reason why colonizers, especially from several countries on the European continent, explored to other continents was to look for spice-producing countries. This was done because of the high economic value of spices in Europe at that time and the potential income that could be generated (Regional news, 2014). Commodities that are included in the spice category include: pepper, nutmeg, vanilla, cinnamon, cloves and ginger.

Indonesia is the world's spice producer so colonizers, especially from the Netherlands, Portugal and Britain, came in droves to Indonesia. According to data released by the Food and Agriculture Organization (FAO), Indonesia is ranked first in the world in vanilla and clove producers and ranked 2nd in the world in 2014 (FAOStat, 2016).

Culinary is one of the cultural products that is closely related to Indonesian society, where countries are known to have a variety of ethnicities and cultures that are different from each region. Because apart from the main function of foodstuffs as fulfilling basic needs, culinary also has historical and even philosophical values. Authentic culinary is a type of community creativity in processing food and adding value to traditional culinary culture.

One of them is the Aceh community which has culinary that is very attached to the hearts of both domestic and foreign consumers, namely Aceh Noodles. The Aceh noodle seasoning can be easily obtained at the local market, but for consumers who are outside Aceh itself, it is difficult to process and make Aceh noodles with a taste that is not lost from the cuisine. There are several supermarkets or local markets located outside Aceh that have opened branches in making Aceh noodles themselves. However, the taste is lacking, so special processing is needed in processing the Aceh noodle seasoning into Aceh noodle seasoning in a practical condition of use and easy to serve and can be easily carried to travel anywhere.

The purpose and benefits of the implementation of products through the PTPPV program are the first is to make it easier for foreigners or domestic people to be able to taste food with the distinctive taste of the Aceh region which is packaged in powder form, practical and fast in its presentation can also extend the shelf life. The second is to establish a start-up company based on drying blower

oven technology to support the sustainability of the local food industry in the food sector that utilizes spices made in traditional ways. For this reason, through this program, the proposer tries to produce and develop campus products in the form of instant spices derived from spices as a local product to become one of the national superior products to help farmers and the community in increasing the productivity of spice plants which have a large economic prospect in Tambon Tunong village, Dewantara District, North Aceh Regency.

## **METHOD**

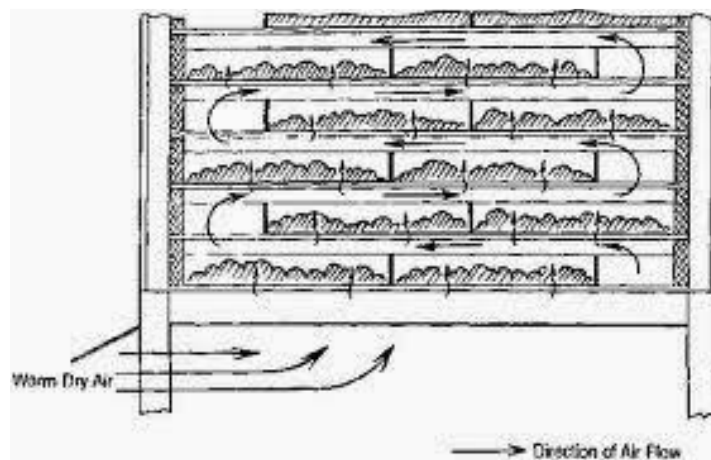
Based on the situation analysis, the PTPPV program is expected to be a solution for partner communities (community groups) to face problems in their production through:

1. Providing knowledge to partner communities about various kinds of spice plants that can be processed and produce instant spices.
2. Able to produce instant spices from natural spices derived from local resources and have various variants of distinctive regional flavors.
3. To increase the potential of spices owned by Aceh, which has only used traditional products with low selling value, into products with high selling value.
4. Producing products that are safe, effective and environmentally friendly, easy to serve and use, and practical to carry anywhere.
5. Producing instant seasoning products that have economic value compared to the market price of other similar products.
6. It can increase farmers' and regional incomes if this potential continues to be developed on a larger industrial scale.
7. Increase the productivity and effectiveness of the growth of spice plants to produce instant and quality powdered spices and can improve the economy in the local market and the world market.
8. Able to offer a sachet or standing pouch that is standard and easy to use.
9. Helping to establish cooperation between farmers and community consumers in an effort to increase the availability of spice plants.
10. For the implementers of PTPPV, it is hoped that this PTPPV can be used as material for writing teaching materials, scientific publications and community service seminars.

The goal to be achieved in this is to increase the productivity and effectiveness of the growth of spice plants to produce quality powder spices and can improve the economy in the local market and the world market as well as help establish cooperation between farmers and consumers in an effort to increase the availability of ready-to-harvest spice plants. Improvements in the field of drying

processes that can be done by introducing a drying device using pressure (airless conditions), namely a drying blower oven. The implementation method offered here is a training method and direct practice using drying equipment that has previously been prepared by the proposer. This activity is planned to involve around 30 people. Furthermore, after being equipped with knowledge of how to process/dry spice plants, the implementation of spice drying is carried out where the farmers are involved in the implementation of activities. Broadly speaking, the implementation of this activity includes:

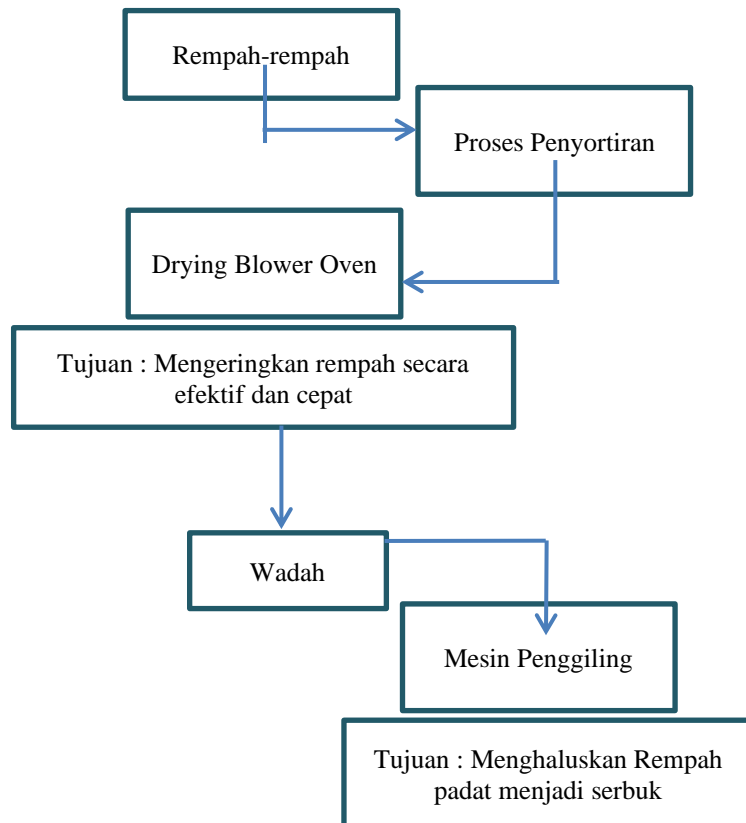
1. Procurement of drying equipment for Drying Blower Oven.
2. The training in the preparation of raw materials includes the initial process of selecting the quality of spices.
3. Training on the use of spice dryers drying blower ovens includes techniques and maintenance.
4. The proponent of the creation of an institution (Community) to develop a wider business of providing dry spices so as to produce spices with low moisture content.



**Gambar 1.** Deskripsi Alat yang Akan Digunakan

The way to dry spices using a drying blower oven that will be disseminated to the public is to put the raw materials of wet spices into the tray in the drying blower oven to be heated. In the drying blower oven dryer, two things happen, namely the contact of the material with the wall and the flow of hot steam that enters the tray. Drying that occurs due to the contact of the material with the wall is called conduction because heat is transmitted through a medium in the form of a metal plate. Meanwhile, drying that occurs due to the contact of the material with the steam flow is called convection because the heat source is a form of flow. In drying using this tool, heat absorption is easy to do and there is a sharper weight shrinkage compared to the weight reduction experienced by the

tray dryer and conditioned without air (vacuum condition) with large pressure. The drying in the drying blower oven is rotated many times so that not only the upper surface undergoes the drying process, but also on all parts, namely the top and bottom alternately, so that the drying carried out by this tool is more even and more shrinkage. In addition, this drying blower oven undergoes continuous drying for one hour without stopping the drying process. This drying blower oven dryer consists of a cylindrical unit, where wet material enters at one end and dry material comes out from the other end.



**Figure 2.** Flow diagram of the application of the Oven Blower Drying Tool in Drying Spice

The way to dry chili using an oven blower drying device that will be disseminated to the public is to put wet spice raw materials into a tray in a heated rotary dryer. In the dryer dryer oven blower, two things happen, namely the contact of the material with the wall and the flow of hot steam that enters the tray. Drying that occurs due to the contact of the material with the wall is called conduction because heat is transmitted through a medium in the form of a metal plate. Meanwhile, drying that occurs due to the contact of the material with the steam flow is called convection because the heat source is a form of flow. In drying using this tool, heat absorption is easy to do and there is a sharper weight shrinkage compared to the weight reduction experienced by the tray dryer and

conditioned without air (vacuum condition) with large pressure. Drying in the rotary dryer is carried out many times so that not only the upper surface undergoes the drying process, but also on all parts, namely the top and bottom alternately, so that the drying carried out by this tool is more even and more shrinkage. In addition, this rotary undergoes continuous drying for one hour without stopping the drying process. This rotary dryer consists of a cylindrical unit, where the wet material enters at one end and the dry material comes out from the other.

### **Work Procedures to Support Program Realization**

The procedure for implementing PTPPV activities is carried out starting from problem identification, data collection, product design, implementation of dissemination/training activities and evaluation of activities. The testing process on the product includes organoleptic testing (taste, aroma and color) and then testing the moisture content, ash content and protein content which are carried out at the Lhokseumawe State Polytechnic Laboratory.

### **Partner Participation**

PT. Bumi Rempah Indonesia which consists of Community Groups that produce Instant Spices such as the Aceh Spice Group and the Seasoning Business Group in Tambon Tunong, Dewantara District, North Aceh Regency. Through socialization to the stage of the results of the selection of crops and production will be followed by each of them so that later it will be ended rather than their activities not only apply as the main raw material supplier but also as experts who in developing sustainable products as an effort to increase economic resources and also have skills in utilizing natural resources produced by farmers who produce spice plants. The community will attend every meeting and training session which will be carried out for 3 months of activities by requiring an absence from activities.

## **RESULTS AND DISCUSSION**

The goals to be achieved in this program are to increase the productivity and effectiveness of the growth of spice plants to produce quality spices and can improve the economy in the local market and the world market as well as help establish cooperation between farmers and consumers in an effort to increase the availability of spice plants. Improvements in the field of spice drying process in accordance with the standards. The method is carried out using a drying blower oven device that has previously been prepared by the proposer.

The target of this product itself is to make it easier for people at home or abroad who want to experience Acehnese cuisine. With this product, it can also



increase the shelf life of Aceh's typical maskaan seasoning and also increase the productivity of the community's economic value, where all these plants thrive in the Sumatra region, especially Aceh Province.

In this program, the planned output achievement targets are as follows:

1. Increase income for the community and partners with the proceeds of sales of local instant seasoning products
2. Increase the quantity and quality of instant seasoning products
3. Improving people's understanding and skills in the field of instant seasoning processing to be able to become a superior product of the community and partners

RECEH (Acehnese Spices) is a typical Acehnese spice product in solid form (powder) produced through the drying blower oven process so as to produce spices with low moisture content and with the best quality obtained from natural ingredients. One of the dryers that can be used to dry chili is by using drying blower oven technology. The relationship between drying spice plants using a drying blower oven where it is conditioned in a vacuum condition (no air) so that the drying process occurs faster and is more efficient when compared to the traditional method (solar heat).

The advantages In addition to being able to be used as a spice for cooking, it can also have very good content for health, beauty and can be used as herbal medicine to treat diseases in children or adults, such as colds, flatulence and so on.

RECEH products (Acehnese spices) are used as cooking spices that come from the typical Acehnese region. especially for Acehnese food lovers. In addition, in terms of the price of RECE (Acehnese Spices) is economical compared to the market price of similar products and can be used in all age groups, without the addition of harmful chemicals, safe to use for both children and the elderly and derived from natural ingredients.

Paying attention to some of the problems faced by the Business Group that produces instant spices, the people of Tambon Tunong Village, Dewantara District, North Aceh Regency in order to make the product a superior product that can compete in the national glass, the proposer has several alternatives that are very likely to be implemented to solve the problem.



**Figure 1 The spice drying process using a drying blower oven**

## CONCLUSION

The research proposal titled "*Peningkatan Produksi Bumbu Rempah Khas Aceh dengan Teknologi Drying Blower Oven untuk Mendukung Keberlanjutan Local Food Industry*" has effectively outlined a practical and innovative approach to address the challenges faced by the local spice industry in Aceh. By leveraging modern drying technology, this project aims to enhance the quality, efficiency, and longevity of traditional Acehnese spice products, turning them into instant, easy-to-use forms.



Key expected outcomes include:

1. Increased production and quality of Acehnese spice blends.
2. Enhanced economic value for local farmers and producers through higher product competitiveness.
3. Contribution to local food sustainability and preservation of Acehnese culinary heritage for broader markets.

This initiative not only holds promise for regional economic growth but also showcases the potential of integrating traditional wisdom with cutting-edge technology. It aligns with national goals of promoting local industries and could set a benchmark for other regional food innovation projects.

### **ACKNOWLEDGEMENTS**

We sincerely thank the Directorate General of Vocational Education, Politeknik Negeri Lhokseumawe, and PT. Bumi Rempah Indonesia for their support and collaboration in this project. Special thanks to the research team and the Aceh community for their dedication and contributions. This work is a step toward preserving Acehnese culinary heritage and empowering local industries.

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