

Entrepreneurship Opportunities of Food Duck Cull Base Product for Small Scale Duck Farmers in Oesapa Kupang City

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Abstract

Purpose: The aim of this community service program is to increase entrepreneurship knowledge and skills in making a variety of food products from duck eggs and duck meat from ducks that are no longer productive.

Method: The activity method is providing training about entrepreneurship, and demonstrations of processing ducks into various ready-to-eat food products. Participant consisted of 15 duck farmers from Oesapa Kupang city.

Practical Application: Processing cull or rejected duck meat provides the right solution for farmers to overcome the problem of handling ducks that are not productive and can also improve family income and increase consumption of animal protein for the community.

Conclusion: Small scale duck farmers were able to increase their knowledge about entrepreneurship and improve skills in making a variety of nutritious food made from duck eggs and duck meat.



Introduction

Duck farming can contribute to increasing animal protein consumption for the community. Congjiao (2019) stated that duck eggs contain higher essential amino acids compared to other poultry eggs. Fan (2024) also stated that duck meat contains high protein, unsaturated fatty acids and various vitamins. The cholesterol content in duck meat varies depending on the type of duck. According to Quaresma (2024) the cholesterol content in mallard ducks is 0.65-1.17 mg/g lower than Pekin ducks (0.71-1.12 mg/g).

Duck farming business carried out in the Oesapa Kupang area is laying ducks and meat ducks on a home scale. Ducks start laying eggs at the age of around 5-6 months and are generally able to produce eggs until the age of 2-3 years (Akhmad, 2011; Yuwono, 2012). If raising laying ducks from the age of 6 months, it will take about 2 years for raising. The two-year raising period will certainly high costs, especially feed costs (Darmawan, et al., 2018). Therefore, laying ducks that are no longer productive must be culled to reduce food cost, and reduce production costs.

Figure 1. Duck farming in Oesapa



Cull ducks or laying ducks that are no longer productive are a problem for duck farmers. This is because the meat of cull ducks has a rough and tough texture, so it is only for family consumption or for religious celebrations. Processing cull duck meat is only frying or boiling so it cannot be stored for long. In addition, the marketing of fresh duck eggs is only needed by certain culinary traders, for example egg martabak traders. On the one hand, these fresh eggs start to spoil on the 7th day, therefore they need to be handled to extend their shelf life.

So far, duck farmers in Oesapa only know that to preserve duck eggs usually by making salted eggs. In fact, duck eggs can be mixed with other ingredients, for example biscuits, sago flour, salt, pepper and spring onions to be formed into attractive food to sell. In this community program, the food is called "egg duck cookies" or duck egg biscuits. In addition, cull duck meat can be processed into siomay, nuggets, and sausages. Homemade duck sausage is made from duck meat, sago flour, eggs, salt, pepper, and other spices. The ingredients are easy to get, cheap and always available. Types of processed duck eggs and meat are processed into frozen foods that can be stored for a longer period of time. Frozen processed food products provide many benefits, such as ready to eat, save time, practical, and easy to cook, so that the market opportunities for frozen food products are widely open (Santoso, 2018; Rehulina, 2023).

People will have many choices to enjoy duck meat dishes with various processed menus (Purwantoro, 2019). Efforts to diversify processed duck ingredients are important to be able to provide added value for farmers. Products with added value from taste and benefits will have high selling value (Asmarantaka, 2009). Food entrepreneurship in the area is quite potential to be implemented, because the location is quite strategic such as close to schools, churches, mosques, and markets.

The development of diversification of food processing based on duck meat and duck

eggs is quite strategic to support community economic empowerment, and aspects of diverse food availability, as well as overcoming nutritional problems. If the downstream (processing and marketing) is productive, it will automatically encourage productivity in the upstream sector.

Based on the observation results, it appears that the problems faced by people who raise ducks at the locations are: 1) The creativity factor for processing is still low, 2) Lack of motivation to process cull duck meat into ready-to-eat food that can be sold around the location and 3) Knowledge and technology for processing duck meat are still lacking. Therefore, entrepreneurship training needs to be carried out to increase motivation towards economically valuable businesses so that they can increase the income of duck farmers.

Method

This community service was carried out in RT 28 RW 10, Oesapa Kupang city on May 5, 2024. The group of duck farmers participating in the activity consisted of 15 people to be trained and guided to improve their knowledge and skills in processing duck eggs and cull duck meat. The tools used to carry out the counseling are entrepreneurship modules and instructions for making various processed foods. The tools for the demonstration are 1 meat blender to grind cull duck meat, 1 gas stove, 1 steamer, 1 frying pan for frying, plates, and spoons. The ingredients used are fresh duck eggs, cull duck meat, biscuit crackers, sago flour, bread flour, salt, pepper, granulated sugar, and spring onions.

The methods used in this PKM activity are training and demonstration, as well as measuring the abilities of participants.

1. Counseling

The counselling was delivered verbally and also written on paper that was distributed to the participants, so that the participants could read it first before the explanation began (Figure 1). The counseling or awareness-raising method carried out in this community service program was an initial explanation of the nutritional composition of duck eggs and duck meat. Other counseling materials were about: business management, production management, and business marketing management, as well as calculating the business value for selling food from duck meat or egg products. After that, discussion or question and answer session about the material that had been presented.

Figure 2. Counseling and discussion about duck products



2. Demonstration

Demonstration or direct practice of processing cull laying duck meat and duck eggs is carried out after the counseling activity. The purpose of this demonstration activity is to improve skills in making egg duck cookies/duck egg biscuits, duck siomay, and duck sausage.

The practice of making egg duck cookies is done by mixing 10 fresh duck eggs that have been beaten loosely with 1 pack or 250g of crushed biscuit crackers. After the dough is mixed, then add 1 tablespoon of sugar, salt, finely ground garlic, and spring onions to taste. Next, about 3 tablespoons of dough using a plastic funnel is put into a 15 cm long and 5 cm wide ice lolly plastic (Figure 3).

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Figure 3. Egg duck cookie dough



Then, boil or steam for approximately 20 minutes. After cooling, then remove from the plastic and cut into 5 pieces, then coat with egg and breadcrumbs. The food can be stored in the freezer as a frozen food product that can be stored for up to 1 month. If it is going to be sold or consumed, the pieces of duck egg biscuits that have been coated with breadcrumbs can be fried and then skewered so that they are attractive and given the name Duck egg biscuits or "Egg duck cookies" (Figure 3). The dish can be eaten with chili sauce or mayonnaise. The total number of duck egg biscuits that can be sold from the dough is 80 pieces. This product, a quantity of 80 pieces, can be sold in one day in locations that are visited by many people, for example in schools, markets, places of worship.

Figure 4. Egg duck cookies



Practice making cull duck meat sausage, firstly by grinding 400 g of cold cull duck meat with 250 ml of ice water or ice cubes using a blender or food processor then mixed with other ingredients. The addition of ice water so that the temperature of the dough remains cold and the texture of the dough becomes chewy and remains stable so that the meat protein is not denatured due to friction from the grinding machine and protein extraction runs well (Kusnadi, 2012). The other ingredients are 1 ½ teaspoons of salt, 1 ½ tablespoons of granulated sugar, 1 egg, 4 tablespoons of cooking oil, and 5 tablespoons of sago flour to bind the water in the dough, and to maintain the consistency of the dough can be adjusted by adding ice water. Store the dough in a closed container and store for about 20 minutes. After that, put it in an edible sausage casing. However, for home businesses if there is no sausage casing, it can be stored in a 15 cm long and 5 cm wide ice lolly plastic. After that, steam it for 20-25 minutes until cooked. After it cools, it can be stored in the refrigerator for

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more than 1 month. The amount of ingredients used to obtain 60 duck sausages ready to be sold (Figure 4). The same dough can also be made into duck siomay. For duck siomay, additional ingredients are needed, namely siomay skin and boiled carrots for decoration on top (Figure 5). Serving duck siomay can be added with peanut sauce, while sausages can be fried, steamed and eaten with chili sauce.

Figure 5. Duck sausages and duck dumplings



Result

The implementation of the training went well and was beneficial for the participants. This can be seen from the motivation, spirit and enthusiasm of the participants which were very high and all were present at the training program. A total of 15 participants, 100% of participants actively asked questions during the discussion about the profits that can be obtained per month in the business of selling 'egg duck cookies'. The team of this community service program provided a calculation of the business opportunity value from the sale of egg duck cookies. The following is the calculation of the business analysis of "Egg duck cookies".

Investment costs:

Equipment	Price (Rp)
Display rack	1,500,000
Gas stove	300,000
Wok	275,000
Steamer	200,000
Food clip	30,000
Spatula	12,000
Freezer machine	1,500,000
Slice board	20,000
Knife	30,000
Plate	50,000
Investment amount	3,917,000

Fixed Costs:

Fixed Costs	Value (Rp)
Display rack = $1/60 \times \text{Rp. } 1,500,000 =$	25,000
LPG gas stove = $1/60 \times \text{Rp. } 300,000 =$	5,000
Frying pan = $1/60 \times \text{Rp. } 275,000 =$	4,583
Steamer = $1/60 \times \text{Rp. } 200,000 =$	3,333
Food tongs = $1/40 \times \text{Rp. } 30,000 =$	750

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Spatula = $1/40 \times \text{Rp.}12,000 =$	300
Freezer machine = $1/60 \times \text{Rp.}1,500,000 =$	25,000
Slice board = $1/40 \times \text{Rp.}20,000 =$	500
Knife = $1/40 \times \text{Rp.} 30,000 =$	750
Plate = $1/40 \times \text{Rp.} 50,000 =$	1,250
Total Fixed Cost	66,467

Variable costs

Material/ Unit	price	Total price
30 duck eggs	3,000	90,000
4 packs of biscuits	12,000	48,000
1kg garlic	20,000	20,000
1 salt	1,500	1,500
2 ounces pepper	5,000	10,000
1 kg granulated sugar	15,000	15,000
1 spring onion	5,000	5,000
1 pack of plastic popsicles	5,000	10,000
4 kg bread flour	12,000	48,000
1 pack of mushroom stock	7,000	7,000
30 l cooking oil	23,000	345,000
1 pack of plastic	5,000	150,000
Water and Electricity	15,000	450,000
Total variable cost	Rp. 1,199,500	

Total operating costs = Fixed costs + variable costs
 = Rp. 66,467+ 1,199,500
 = Rp. 1,265,967

Monthly income = Number of products x product price x 30 days
 = 80 x Rp.1000 x 30
 = Rp. 2,400,000

Profit per month = Total revenue – total operating expenses
 = Rp.2,400,000 – 1,265,967
 = Rp.1,134,033

Return on investment = Total investment/profit
 = Rp. 3,917,000/Rp. 1,134,033 = 3.4 months

Discussion

Egg production of culled ducks has decreased or is no longer productive, so their meat can be processed into food. However, culled duck is less popular because its texture is rough and bulky. Therefore, it needs proper handling and processing, so that the meat does not taste rough and bulky. Grinding meat and processing it into various frozen food products can be a food entrepreneurship opportunity for duck farmers. So far, people who keep ducks in the Oesapa Kupang city do not understand how to use entrepreneurial opportunities as food sellers made from the cull duck products. Therefore, entrepreneurship training is the right solution for duck farmers in Oesapa Kupang area. After the program, more than 50% of participants understood how to calculate the value of a business to make a profit. Some

participants think that a food business made from duck eggs and cull duck meat does not require large capital for a home business scale. Therefore, participants who have free time after this program are more motivated to do business. This is because the processing is not difficult, quite profitable, and consumers range from children to adults. In accordance with the capital they have, groups of farmers can choose to start a business selling processed cull duck meat in frozen form, or processed duck eggs. One of the strategies that participants need to prepare before starting a business is analyzing business opportunities to determine what food product business to choose. Determining what food product to sell is one of the problems for them, because for them the food product business is a new business that has never been done. Some participants doubt their own products and are not sure they can compete with other food products.

One way to conduct a business opportunity analysis is to look at the strengths and weaknesses of the participants, as well as to see the opportunities and obstacles that may arise (Harianto, 2010; Gijanto, 2020). The strengths of the group of participating farmers include a strategic location close to places that are visited by many people every day, such as near schools, markets, and places of worship. Another strength is being able to communicate well to promote their products to consumers. The disadvantage is that some participants do not have sufficient capital, both in terms of courage and economic capital. Barriers to entrepreneurship can occur due to limited capital, and the presence of competitors who sell similar food products such as chicken dumplings. Starting a business for participants is indeed not an easy thing, it requires a lot of calculations and considerations (Imam, 2019). There is no frozen food businesses made from duck meat and eggs around the location, so these business opportunities must be utilized. Nowadays digital technology can be used to help product marketing. Saurina et al., (2023) stated that based on the results of observations, it was proven that social media such as Facebook or Instagram could increase entrepreneurial motivation and knowledge about how to promote products. In this millennial era, people are required to think creatively and innovatively. Communities have to follow existing trends, both in terms of knowledge, education and creativity to create something new (Apriani, 2022).

Demonstration of processing duck eggs and duck meat can be done well. Based on the questions asked, it appears that 100% of participants do not know how to make egg duck cookies, home-style duck sausages, and siomay made from cull duck meat. After this program, 100% of participants increased their knowledge about processing duck eggs and cull duck meat. In addition, 100% of participants were able to improve their skills in processing duck products. The techniques used are simple techniques, and in accordance with hygienic standard standards. The materials used are widely available, easy to obtain and relatively inexpensive. Each stage of the activity from start to finish is accompanied, so that the activity is carried out according to the procedures given. After the trained farmers have the knowledge and skills to process the meat of culled laying ducks, the product can be sold in their location environment to help the family income.

Conclusion

The knowledge and skills of duck farmers in Oesapa Tengah Kupang City farmers' group have increased regarding duck-based food product entrepreneurship. Motivation has increased to start a business selling food products made from cull duck meat and fresh duck eggs. Therefore, to develop entrepreneurship in food products made from culled ducks in Oesapa Kupang city, the next activity plan is to carry out training on introducing digital technology to farmers to help market products online.

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Reference

- Akhmad, NF (2011). Breeding of Superior and Fast Harvest Meat Ducks. Rona Publishing. Yogyakarta.
- Apriani D, Muhammad S., Muhammad T., Sri A., Imelda. 2022. Pelatihan Untuk Berwirausaha Pada Remaja Putus Sekolah Di Desa Keringing Kabupaten Ogan Ilir. Jurnal Pengabdian kepada Masyarakat Institut Teknologi dan Bisnis Asia Malang Vol. 3, No. 2. pp. 164-174
- Asmarantaka, RW (2009). Marketing of agricultural products. In: Agribusiness Anthology Marketing Series. Publisher IPB Press Bogor, Bogor.
- Congjiao S., Junnian L., Ning Y., and Guiyun X. (2019). Egg quality and egg albumen properties of domestic chicken, duck, goose, turkey, quail, and pigeon. Journal of Poultry Science 98:4516–4521 <http://dx.doi.org/10.3382/ps/pez259>
- Darmawan, D., Damayanti, I., Sa'diyah, K., Hasanah, N., Khasanah, ZN (2018). Identify the strengths, weaknesses, opportunities and threats of the laying duck business in Gedang Hamlet, Modopuro Village, Mojokerto District, Mojokerto Regency. Agrimas. 2(2): 115-124.
- Fan L, Y. Lu, H. Zongliang, Y. Debing, Jing Z., H. Cao, X. Zhang, Hongjie J, Kunpeng L., and M. Yu. (2024). Analysis of carcass traits, meat quality, amino acid and fatty acid profiles between different duck lines. Journal of Poultry Science 103:103791.
- Kusnadi, DC, VP Bintoro, and AN Al-Baarri. (2012). Water Holding Capacity, Firmness Level and Protein Content in Meatballs Combination of Beef and Rabbit Meat. Journal of Food Technology Applications Vol. 1 No. 2.
- Gijanto PS, and Nataliningsih. (2020). Counseling on Processing Products Made from Duck Raw Materials in Order to Increase Income of Duck Farmers in Sukamanah Village, Rancaekek District, Bandung Regency. Journal of Community Service. Vol. I No.1/February/Year 2020
- Harianto. (2010). Conceptual framework of agribusiness development stages. In: Agribusiness Reflection. Editor: Krisnamurti, B. Pambudy R., Dabukke, F. Publisher IPB Press, Bogor.
- Imam P. (2019). Culinary Business Plan of Bebek Blengong in Jakarta. Journal of Entrepreneurship, Management, and Industry. Vol. 2, No. 2. pp. 109-114.
- Purwantono, I., (2019). Culinary Business Plan of Bebek Blengong in Jakarta. Journal of Entrepreneurship, Management, and Industry. Vol. 2, No. 2. pp. 109-114.
- Quaresma, MAG, F. Abade dos Santos, LC Roseiro, AP Ribeiro, JDFerreira, SP Alves, and RJB Bessa. (2024). Nutritional value of meat lipid fraction obtained from mallard duck (*Anas platyrhynchos*) reared in semi extensive conditions for hunting purposes. Journal of Poultry Science 103:1032.
- Rehulina T, T.Hardy, N. Hidayanti, Korneili. (2023). Counseling Training on Duck Meat Processing into Nuggets in Babakan Village, Serang Regency, Banten Province. Bantenese Journal of Community Service. e-ISSN 2656 -1840 Vol. 5 No. 2.
- Santoso, I. (2018). Product familiarity and purchase interest of frozen food: The role of product knowledge, packaging, and social environment. Journal of Family and Consumer Sciences. Vol. 11 (2) : 133-144.
- Saurina N., Maslihah, Noven I.P., Wisnu Y.U, Shofiya S., Emmy W. (2023). Sosialisasi Membangun Motivasi Berwirausaha Saat Pandemi di SMA Muhammadiyah 3 Surabaya. Jurnal Pengabdian kepada Masyarakat Institut Teknologi dan Bisnis Asia Malang. Vol. 4, No. 1, pp. 10-21.
- Yuwono, D.,M. (2012). Cultivation of Laying Ducks. Agricultural Research and Development Agency, Center for Agricultural Technology Assessment and Development, Central Java Agricultural Technology Assessment Agency