



# Ginger Milk: Innovation in Pure Milk Processing in Improving the Economy of Dairy Farmers

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## KEYWORDS

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**ABSTRACT** Wagir Kidul Village, Pulung District, Ponorogo Regency, is the 2nd largest milk-producing village in Ponorogo. In this case, group 2 of the KKN Muhammadiyah University of Ponorogo has the opportunity to serve and work in the community by creating an innovation work program for processing superior village products. In this case, we have an idea to help improve the people's economy in the village by making innovations in processing pure cow's milk. We mix pure cow's milk with ginger and other flavors. The method used in this research is community education and training. This innovation produces results where processed milk has a higher nutritional content than pure milk. Apart from that, the selling value of processed milk has increased more than that of pure milk's, where profits have increased by almost 20%. Based on this, it can be seen that the innovation of processing pure cow's milk into Ginger Milk has positively impacted the community's economy, especially for cattle breeders in Wagir Kidul village, Pulung District, Ponorogo Regency.

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## 1. INTRODUCTION

Dedication carried out located in village Wagir South, Subdistrict Pulung, Regency Ponorogo. One of the superior products is pure milk obtained from dairy farms in this village (Apiyah & Suharsiwi, 2021; Cameron, 2022; Mulders, 2022). The dairy farm in this village is the second largest in Ponorogo district. However, breeders cow in village the just selling milk pure without reprocessed (Holtmann, 2023; Suharsiwi & Muthmainnah, 2018; Wilkinson, 2023). This condition is wrong. One reason for making innovations (Aqil, 2019; Gómez-Cortés, 2018; Setiyanti et al., 2022).

The innovation aims to create A superior product, namely milk, which is processed for higher economic value (Aguilar-Toalá et al., 2017; Meutia et al., 2022; Sudiantini et al., 2022). Apart from pure cow's milk (Safitri et al., 2023; Sismayadi et al., 2023), there is a cattle entrepreneur who is developing a product with variant flavor fruit (Choirudin et al., 2021; McClements, 2019; Usmiyatun et al., 2021). Then, we own idea For try make Another innovation to make processed milk (Carfora, 2019; Lee, 2018), with additional benefits such as nutritional content and the benefits (Hidayaturrehman et al., 2021; Sungkawati, 2020; Triantis, 2018).

The innovation we do in processing milk cow pure is to add variant ginger as flavor And, at a time, add efficacy to the product. Apart from that, there are other variants like milk pure (plan) (Lawson, 2020), Suga (milk sugar) (Kutralam-Muniasamy, 2020), vanilla, And chocolate. Content milk nutrition increases further after processing (Lyons, 2020; Vanga, 2018).

Objective innovation processed milk This among them is; 1) increase economy public, 2) give outlook on breeder cow related innovation in process milk, 3) increase the price sell milk cow. Hope in the future with exists innovation processed milkthis can developed more Good in the future and can realize objective from matter this.

## 2. METHOD

In order to provide valuable experience to internship program participants, PT. Arkatama Multi Solusindo prioritizes providing comprehensive material regarding the software development process. Each participant will be given an in-depth understanding of the steps starting from planning (Zahroh, 2018), needs analysis, design, and development, to the software implementation stage



(Susanto, 2017). Through the presentation of this material, participants will get a comprehensive overview of how software is developed in a real business environment.

The research methods used are community education and training. This community education method was chosen because this innovation provides education to the community so that they can be creative in developing existing products with superior potential for the village. Furthermore, the training method was chosen because the innovation in making this product will be applied to the community so that it can be sold or used by the community.

### 3. RESULTS AND DISCUSSION

This innovation in making superior products in Wagir Kidul village, Pulung, is one of our group service programs. The superior product processed by our group is pure cow's milk (Cholily et al., 2021; Eriyanti et al., 2022a; Yuniwati, 2019). This cow's milk is obtained from the original farm of the village. This material was chosen as a superior product because it is one of the main commodities for the livelihood of the people in this village (Eriyanti et al., 2022b; Siddiqui et al., 2023). However, cattle farmers in this village only sell pure cow's milk to milk sellers.

This is why we process original village products that can have higher innovation and increase the selling price. In creating this superior product innovation, we collaborated with one of the dairy farmers in this village (Evidayanti, 2022; Giovani et al., 2023). These cattle breeders have had farms for decades but are still not considered large cattle breeders. The cattle farmer we work with is Mr. Sugeng, who lives in Kerep hamlet, Wagir Kidul village, Pulung District, Ponorogo. He has 4 cows, but only 2 cows can be milked while the other 2 cows are still in the process of mating so they can produce milk.



Picture 1. Farm cow have father Nice, Wagir South

According to Mr Sugeng's explanation, the milk yield is obtained in one go milk 100 liters with a selling price of IDR 7,000/liter. Based on this statement, we have our own idea For an innovative product: milk processed with materials such as ginger, brown sugar, chocolate, and vanilla. This

innovation was carried out with several experiments, trial and error. Test this is we do For looking for a taste just right.



Picture 2. Process Processing Milk Cow Pure

Ingredients used in processing milk Are as follows:

Table 1. Material processed ginger Milk

No	Material	Amount Which used
1.	Milk cow pure	1.5 liter
2.	Brown sugar	Two puck
3.	Ginger elephant	Five segment
4.	Pandan	Two sheet
5.	Water mineral	1 liter
6.	Vanilla powder	5 tbsp

The processed product that we have made is called "Ginger Milk". This name was chosen because our superior product innovation is ginger milk. This ginger flavor variant was chosen for a number of reasons, including 1) the condition natural weather in village Wagir South tend to be cold, 2) the variant flavor, Which there is not any processed milk in village Wagir South, and 3) Easy made with ingredients Which easy obtained.

This innovation in processed ginger milk has good nutritional content. Pure cow's milk has various nutritional contents, such as protein, fat, vitamins, and minerals, with a balanced comparison (Ayyash, 2018). Meanwhile, ginger is an emu-empty plant with properties as an herbal medicine. Following content nutrition with details as follows.

Table 2. Content Nutrition Ginger

Content Nutrition Ginger		
Content	Heavy	Amount Nutrition
Proteins	1.82g	-
Sugar	1.7g	-
Fiber	1.7g	-
Fat	0.75g	-
Vitamin A	0µg	-
Vitamin C	5mg	6%
Vitamin D	0µg	-
Vitamin E	0mg	-
Vitamin B1 (Thiamine)	0.025mg	2%
Vitamin B2 (Riboflavin)	0.034mg	3%
Vitamin B3 (Niacin)	0.75mg	5%
Vitamin B5 (	0.203mg	4%

<i>Panthenic acid</i> )		
Vitamin B9 ( <i>Folate</i> )	11µg	3%
Calcium	16mg	2%
Iron	0.6mg	5%
Magnesium	43mg	12%
Phosphor	34mg	5%
Potassium ( <i>Potassium</i> )	415mg	9%
Sodium	13mg	1%
<b>Zinc ( <i>Zinc</i> )</b>	<b>0.34mg</b>	<b>4%</b>

Content nutrition ginger is perfect for a healthy body. Besides, existing processed milk can increase the economy of breeder cows in the village. Meanwhile, according to Anindita and Soyi, the chemical content in milk is: fat 3.8%, proteins 3.2%, lactose 4.7%, ash 0.855, water 87.25%, And material dry 12.75% (Aryseta et al., 2023; Sari et al., 2023). The content of ginger, when mixed with whole milk, is proven better And useful for health.



Picture 3. Ginger processed with milk cow pure

The selling price of pure cow's milk is only IDR 7,000/liter, whereas it is processed milk. This pure cow is IDR 10,000/250ml. This price is, of course, higher than the selling price of the product, pure cow's milk. Then, you do not have to spend a lot to buy ingredients capital, so it is a profit That is obtained more quickly (Riono et al., 2023; Widodo et al., 2023; Zahroh & Hartiningtyas, 2023).



Picture 4. Results processed milk pure cow with various variant flavor

We then present the processed products that we have succeeded in making For introduced to public wide on forum title product in village Mrican, Jenangan on date 23 February 2023. Results from This presentation generated a positive response from

the university. They provided hope that the product processed Is capable of being developed And sold to buy outside the area. Furthermore, the target of this superior product can be taught to the local community in Wagir Kidul village so that it can be redeveloped so that it has an impact on the bigger one (Ahmed et al., 2021; Sugianto et al., 2023). Apart from that, the aim of processing innovation is early pure cow's milk products aims to extend the storage period of milk, facilitate distribution of milk, And increase the price sold (Liu, 2019; Sugianto & Darmayanti, 2021; van den Elsen, 2019). Innovation product superior This is expected to increase the economy and benefit the health public.

#### 4. CONCLUSION

This research on Community Service activities was created to contribute to the development of science and technology and provide the broadest possible benefits for the community and government in order to make the PGRI Wiranegara University campus the leading partner of the government and community.

This superior product is pure milk obtained from dairy farms. There is in the village This. Objective processed innovation This milk includes: a) Increasing economy public, giving outlook on breeder cow related innovation in processing milk And increase selling price milk cows, b) Location Activity program processed milk This done in a number of villages Wagir south. This activity has a positive impact, namely by getting the opportunity to help your family Slamet, Which is located in Hamlet cool village Wagir south subdistrict Pulung Regency Ponorogo.

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