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Training and Mentoring of Probiotic Milk Fermentation Technology Development in Purwodadi Village, Purwodadi Sub-District, Pasuruan

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Abstract
Purwodadi sub-district has a surplus of dairy milk with a production of 25 tons of milk per day per KUD. There are 4 milk industry in Purwodadi sub-district as suppliers of PT Nestle. The problem is, dairy products are not entirely absorbed by the market, so it is necessary to look for breakthroughs in the distribution of dairy products that have an average price of IDR 8,000-13,000 per liter. Diversification of milk into fermented milk products will increase prices by five times, so that it is expected to increase people's income, because not only is the product variant increasing, but the market is also increasing. The result of the training shows that all participants experience a significant increase in knowledge, indicated by higher post-test result compared to the pre-test result. Another result known is that this probiotic-fermented milk can be used as a medium for a source of economic improvement for the family. This is proven when yogurt made by the community of Purwodadi has been sold among them as an additional drink during community meetings. Apart from that, this training will create a climate that enables the potential of the Youth Organization (Karang Taruna) and Family Welfare Program (PKK) to develop, namely to build group creative power by encouraging, motivating, and raising awareness of the potential of the village and efforts to develop it.

Keywords: Product Diversification, Fermentation Technology, Probiotic Milk, Yogurt, Mentoring, Training

I. INTRODUCTION

Pasuruan District with an area of 1,474,015 km^2 located between 112°33'55 "to 113°05'37" East Longitude and between 7°32'34" to 7°57'20" South Latitude. The north side is bordered with Pasuruan City, Madura Strait, and Sidoarjo District. The south side is bordered with Malang District, the west side is Mojokerto Regency and Batu City, and the east side is bordered with Probolinggo District. The Youth Organization (Karangtaruna) as a non-partisan youth social institution has a vital role in mobilizing young people to have a high level of community life awareness.[1] As a youth community forum in Purwodadi village, Purwodadi Sub-district, Pasuruan Regency, the Youth Organization has a status that is recognized by the community, and it has an important role in their community.[2] Youth Organization is a forum for guidance, development, and empowerment in the effort to develop productive economic activities by utilizing all available potentials in the environment, both natural resources and existing human

[1]Edi Kusnadi & Dadan Iskandar, *Peranan Tokoh Masyarakat dalam Membangun Partisipasi Kewargaan Pemuda Karang Taruna* (Yogyakarta, Indonesia, 2017).
[2]M Subadar, "Analisis Peran Lembaga Terhadap Progrm KRPL (Kawasan Rumah Pangan Lestari) di Desa Pucangsari Kecamatan Purwodadi Kabupaten Pasuruan" (2013) 4:2 Agromix, online: ‹https://jurnal.yudharta.ac.id/v2/index.php/AGROMIX/article/view/718›.

resources.[3] Besides the Youth Organization, a woman community forum in the Family Welfare Empowerment (PKK, *PembinaanKesejahteraanKeluarga*) has an active role in Purwodadi Village.

The PKK of Purwodadi village becomes the village community organization that able to mobilize the village community participation in the local development and plays an important role in village growth activities. The PKK is more directed towards its role in developing women's participation in village development through programs that government design for.[4] This condition bringing women as agents that are very important for the welfare of the family and community.[5]Purwodadi Village is one of the villages that mobilize community participation by involving the empowerment of Family Welfare Forums. PKK's program planning in Purwodadi village is inseparable from the 10 main programs that refer to Pasuruan District Government programs that are related to education, health, and economy. PKK planning is also inseparable from the SKPD (*SatuanKerjaPerangkat Daerah*) program related to education, health, and economic programs. Specific in the economic sector, the programs which are in sync with the *PKK* program are (a). Conducive milieu creation program for small and medium businesses (b). Support system development program for small and medium micro enterprises (c). Quality improvement program for cooperative institutional (d). Consumer protection and trade protection program.

With various enhancements in the activities of women in *PKK* at both Purwodadi sub-district and village levels, the *PKK* group is encouraging government development and programs through target groups. *KarangTaruna* group and the *PKK* of village will later make an economic contribution to prosperity in the Purwodadi village through exploiting the potential of its natural wealth. This Economic Empowerment Program will be facilitated byUniversitas Airlangga through Community Service Program as one of Tri Dharma higher education. The program is not only as an institutional concern for community problems, but also as a reflection of the down streaming of research products that can be directly enjoyed by the community. The program was designed as Training and Mentoring in Probiotic Milk Fermentation Technology Development. Target of program participants is people who are ready to receive the training both in terms of knowledge and motivation to develop.

The potential and strategic values possessed by Pasuruan District include: (a) Highway/Toll infrastructure (Provincial, National, and District Roads) connecting Pasuruan District with Malang District/City and Surabaya City. (b) Tourism Potentials ranging from Natural Tourism, Cultural and Religious Tourism, Agro Tourism, and Special Interest Tourism. (c) Small process food industries, bakpia centers, klepon

[3]Luckman Ashary, "Optimalisasi Pemberdayaan Karang Taruna dalam Pengembangan Desa Silomukti Kabupaten Situbondo" (2016) UNEJ E-Proceeding 725–738.

[4]Veronica Nirta Kumalasari, *Peran Yayasan SI Hijau (Sanggar Indonesia) Sebagai Penggerak Konservasi Sumber Mata Air (Studi Pada Wisata Kampung SI Hijau Pancar Air di Desa Cowek, Kecamatan Purwodadi, Kabupaten Pasuruan)* (Undergraduate, University of Muhammadiyah Malang, 2018) [unpublished].

[5]Nika Rizqi Fitrina, *Pemberdayaan Perempuan dalam Meningkatkan Kesejahteraan Keluarga Melalui Industri Kecil di Pedesaan (Studi dalam Kelompok Usaha Bersama (KUB) Serang di Desa Pulorejo Kecamatan Purwodadi Kabupaten Grobogan)* (other, Universitas Negeri Semarang, 2016) [unpublished].

centers, and other small industrial centers. The probiotic fermented milk product developed is expected to complement the economic potential of the local community

The agricultural potential of Pasuruan District is quite large, among others in the form of horticultural crops and livestock products.[6] Horticultural crops include fruits such as mango, durian, and apple. Livestock products, such as cow's milk has considerable potential to be processed into various types of food such as candy, various flavored milk packaging drinks, also to fulfill the demand of the milk processing industry in Pasuruan Regency, namely PT. Nestle in Kejayan sub-district and PT. Indolakto in Purwosari sub-district.[7]

In Pasuruan District, cow's milk is a very abundant livestock product. The handling of this cow's milk product in 2017 was 103,157.74 tons, exceeding the target set in the 2013-2018 Pasuruan District development plan (RPJMD) of 89,318.28 tons or 15.49%. Besides being sold as a fresh milk, several dairy products are still likely to continue to be developed into dairy products. This dairy product is intended so that farmers can add economic value, one of them is diversity of milk-based product like yogurt, fruits yogurt or others.There are ten villages in Purwosari sub-district, namely Dawuhanrejo, Jatisari, Tejowangi, Tambaksari, Pucangsari, Gerbo, Lebaksari, Cowek, Capang, and Purwodadi Villages which produce fresh milk every day and collect the dairy milk products to Dadi Jaya Village Cooperative,[8] before carried to the Milk processing industry. the other collector is dairy farm cooperative setiakawankpsp(*KoperasiPeternakanSapiPerah)* in Nongkojajar Village of Tutur Sub-District

The cultivation of dairy cow's milk is intended to improve the standard of living of farmers as well in the context of improving the nutrition of farmers and society in general. But problem is, when the milk production is abundant and the milk processing industry can't hold all the milk from the farmer, there will be abundance of rejected milk which is often not utilized and eventually discarded. Efforts in creating milk-based domestic products in the form of yogurt are the choice of superior products that can be implemented in Purwodadi Village as one solution to add diversification of dairy products. Yogurt is a form of beverage made from pure cow's milk fermented (bruised) using the probiotic bacteria *Lactobacillus sp*. or the consortium as the main starter.[9] Yogurt is easy to produce. In addition to the abundant and available basic materials, the need for tools and materials as well as the manufacturing process is quite simple. This potential is chosen by Community Service Team of Faculty of Pharmacy Universitas

[6]Manasha Rosatia rosatia Sari, "Analisis Tingkat Efektivitas Pajak Hiburan di Kabupaten Pasuruan Tahun 2009-2013" (2014) 3:1 J Akunt AKUNESA, online: ‹https://jurnalmahasiswa.unesa.ac.id/index.php/jurnal-akuntansi/article/view/11223›.

[7]Misbakhul Choir, *Proyeksi Produksi dan Pendapatan Susu di KUD `Dadi Jaya` Kecamatan Purwodadi Kabupaten Pasuruan* (masters, University Of Muhammadiyah Malang, 2018) [unpublished].

[8]Bambang Sutikno & Abdul Hakim, "Budaya Masyarakat dan Partisipasi Koperasi Terhadap Pembangunan Lingkungan Masyarakat Lokal di Kabupaten Pasuruan (Studi Kasus pada Peternak Sapi Perah dan Koperasi Susu di Kabupaten Pasuruan)" (2016) 7:1 Agromix, online: ‹https://jurnal.yudharta.ac.id/v2/index.php/AGROMIX/article/view/702›.

[9]Joseph C Kolars et al, "Yogurt — An Autodigesting Source of Lactose" (1984) 310:1 N Engl J Med 1–3.

Airlangga to provide Probiotic Milk Fermentation Technology Training using liquid fermentation.

Milk is perishable food/drink that require rapid and precise handling. understanding of post-milking handling of milk must be instilled to the dairy farmer,[10] in order to maintain the milk does not spoil quickly, still safe and suitable for further processing/consumption.Milk is processed to obtain various taste and flavors product, including fermented milk with probiotics, skim milk, fortified milk, concentrated milk, and others.[11] The type and concentration of milk will affect the quality of fermented milk.[12]An important factor that must be maintained is the qualification of suppliers who can guarantee the quality of milk raw materials.

Probiotic is live microorganisms in the form of bacteria or fungi that are in the human digestive system. Probiotics help protect and maintain the health of the digestive system, especially the stomach and intestines, from various diseases. Probiotics also play a role in passing swallowed food or drink so that it can be digested. Lactobacillus and Bifidobacterium are combination of probiotis that have been research at the Faculty of Pharmacy Universitas Airlangga and developed into products that can help increasing people's income, especially dairy farmer, as an integrated program between research and community service program.

Milk fermented with probiotic (yogurt) actually a lightly sour taste (depend on fermentation time) and the texture also varies. Therefor, the plain taste modification to the specifically taste of local people can increase the consumption. Fermentation of cow's milk into yogurt does not affect its nutritional content, especially the content of calcium and vitamin D.

Research on probiotic fermented milk has been developed at the Faculty of Pharmacy Unair since 2010, mainly focused on its antibacterial power activities both against Gram positive and Gram negative.[13] The combination of probiotic milk and various natural ingredients, such as honey and plant extracts (guava leaves) has also tested its antibacterial power and modulator immuno effects.[14] Moringa oleifera extract was able to increase the antibacterial activity of probiotic milk.[15] There are stability problems in probiotic milk preparations which are good media for the growth of

[10]Heti Resnawati, "Kualitas Susu pada Berbagai Pengolahan dan Penyimpanan" (2020) Balai Penelit Ternak 6.

[11]E Taufik, "Dadih Susu Sapi Hasil Fermentasi Berbagai Starter Bakteri Probiotik yang Disimpan pada Suhu Rendah: Karakteristik Kimiawi" (2004) 27:3 Media Peternak, online: ‹https://journal.ipb.ac.id/index.php/mediapeternakan/article/view/645›.

[12]Resnawati, *supra* note 10.

[13]Nopriadi Nelintong, Isnaeni Isnaeni & Noor Erma Nasution, "Aktivitas antibakteri susu probiotik Lactobacilli terhadap bakteri penyebab diare (Escherichia coli, Salmonella typhimurium, Vibrio holera)." (2015) 2:1 J Farm Dan Ilmu Kefarmasian.

[14]Andyanita Hanif Hermawati, Aryati Aryati & Isnaeni Yudi Haryanto, "Daya hambat kombinasi madu mangga (Mangifera indica)-susu probiotik terhadap pertumbuhan Eschericia coli ATCC 6538 dan Staphylococcus aureus ATCC 8739" (2016) 6:2 Pharmaciana, online: ‹http://journal.uad.ac.id/index.php/PHARMACIANA/article/view/3741›.

[15]Agustin MauliDiNa et al, "Inhibitory activity of Lactobacillus plantarum ATCC 8014 fermented milk combined with aqueous extract of Moringa oleifera leaves against Streptococcus mutans" (2019) 23:4 J Res Pharm 701–710.

pathogenic microbes. In SNI 2009 which contains requirements on microbial contamination in probiotic milk products or yogurt it is mentioned that yogurt products must meet the criteria of Total Plate Number (ALT, *Angka Lempeng Total*) and free or limit of pathogenic microbial contamination. In addition to ALT, Somatic Cell Count (SCC) includes key indicators of milk quality. The majority of somatic cells are leukocytes (white blood cells) found increasing in number in milk, usually in response to the immune system to mastitis-causing pathogens.[16] High SCC value is associated with the quality and content of proteins, fatty acids, lactose, and minerals in milk, besides pH and enzyme activity.[17]

The quality of dairy products, such as pasteurized milk is strongly influenced by raw milk raw materials[18] and its production process.[19] The shelf life of pasteurized milk is very short, 10-18 hours in Europe, while in Indonesia between 3-5 days. To anticipate the stability of probiotic milk products, further research for the development of probiotic milk microparticles that have antibacterial activity has also been conducted at the Faculty of Pharmacy Unair,[20] to facilitate and obtain more stable preparations during the storage process. This technology is actually one of the training targets that have been designed before the covid-19 pandemic.

The purposes of this program are a) Creating an atmosphere that allows the potential of Youth Organization and Family Welfare Program of Purwodadi village to develop, namely to build group creative power by encouraging, motivating, and raising awareness of the potential of the village and efforts to develop it. b) Strengthening the potential of the Youth Organization or Family Welfare Program of Purwodadi village through the provision of various opportunities so that the community is more empowered. c) Providing guidance and direction of access and control to Youth Organization or Family Welfare Program to various conditions in democratic economic activities, therefore reducing dependence on the government (having networking). d) Placing Youth Organization or Family Welfare Program as a participatory participant directly involved in planning, implementing, and evaluating the efforts made.

II. METHOD

Approach model that was used in carrying out community empowerment programs in Purwodadi Village, namely; a) Micro approach, practically through guidance, counseling, stress management, and intervention. The purpose of this model was primarily to guide or train individuals/small groups in carrying out the tasks of

[16]Y Park, "Somatic Cell Count - an overview | ScienceDirect Topics", online: ‹https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/somatic-cell-count›.
[17]M J Auldist et al, "Effect of somatic cell count and stage of lactation on the quality and storage life of ultra high temperature milk" (1996) 63:3 J Dairy Res 377–386.
[18]*Standar Mutu Susu Segar*, by Badan Standardisasi Nasional, SNI 01-3141-1998 (Jakarta, 1998).
[19]Haris Budiyono, "Analisis Daya Simpan Produk Susu Pasteurisasi Berdasarkan Kualitas Bahan Baku Mutu Susu" (2009) 10:2 Paradigma 198–211.
[20]Sari, *supra* note 6; Isnaeni Isnaeni, Arumentin Diana & Tutiek Purwanti, "Utilization of Lactobacillus Acidophilus FNCC-0051 Microencapsulation: Potential Benefit of Giving Combination of Sodium Alginate and Gelatin to Attributes and Role of Probiotic Against Staphylococcus" (2019) 10:9 Indian J Public Health Res Dev.

activities. This model had a task-centered approach. b) The mezzo approach was to utilize the existence of groups as a medium for intervention or treatment. Through education and training of probiotic milk fermentation technology development, group dynamics was used as a strategy in increasing the awareness, knowledge, skills, and attitudes of individuals to have the ability to solve the problems they faced.

This program began with pre-test. Some of the questions in the pre-test and post-test are list in Table 1. The aim of pre-test was to find out, identify, and measure the knowledge of trainees and estimate the depth of the material to be given for mentoring about probiotic milk fermentation technology. Post-test was carry-out to evaluate the effectiveness of training proses and estimate the prospect of further program development. Results between pre-test and post-test were compared. Pre-test was done before the event started and post-test was given when the activity had ended.

Table1. Pre-Test and post-Test Questioner

No	Question	Yes		Not yet	
	PRE TEST :				
1	Have you ever heard of or are familiar with fermented milk, probiotic milk or yogurt?				
2	Do you know the function and benefits of yogurt				
3	How do you getthe information of the function and benefits of yogurt? A. Friend B. Television C. Training D. Internet	A	B	C	D
4	Have you ever drank yogurt or yakult?				
5	Where did you get the yogurt? A. Supermarket B. Made it your self C. A gift D. not remember	A	B	C	D
6	What are your goals in participating in this training? A. Just curious C. For family consumption B. Want to practice D. Sold to increase family income	A	B	C	D
	POST TEST				
1	The results of fermented probiotic milk are : A. Yogurt B. Kefir C. Pasteurized milk D. A+B	A	B	C	D
2	The purpose of milk pasteurization before used as raw material for preparations of fermented milk is: A. Improving taste B. Avoid contamination of pathogenic microbes C. Eliminate fat D. Avoid sour taste	A	B	C	D
3	Fermented milk made by mixing milk with probiotic seed at the temperature of: A. 25 °C B. Cool C. FreezerD. Room	A	B	C	D
4	The addition of fruit juices and other flavors t the probiotic	A	B	C	D

	fermented milk is carried out at a moment : A. Before milk pasteurization B. Before making starter C. Before mixing fresh milk with probiotic seed D. After fermented probiotic milk obtained				
5	Here are the ingredients for making probiotic milk: A. Fresh milk + probiotic seeds B. Probiotic C. Probiotic seeds D. Instant milk				
6	Fermented probiotic milk product could claimed as : A. Functional food B. Health supplement C. Nutraceutical D. Heath drink				
7	The distribution license for probiotic preparations is govern by: A. BPOM. B. LPOM-MUIC. Ministry of Health-RI D. Public Health office	A	B	C	D
8	The fermented probiotic milk relatively stable if store at the temperature below: A. Room B. Refrigerator C. Freezer D. 37°C	A	B	B	D
9	The SNI requirements for probiotic preparations, should not contain: A. Pathogenic bacteria C. Prebiotics B. Preservatives D. Dye	A	B	C	D

The second step was the workshop. Participants were divided into 3 groups. 1 group consisted of 15 participants. Each group was guided by two trainers. At the first session all trainees were delivered the material verbally with the help of power point slides which contained knowledge about: beneficial and harmful bacteria, bacteria function in digestion, lactic acid bacteria, yogurt drinks, health benefits, nutritional content of yogurt, various kinds of fermented milk drinks, and yogurt making technology with lactic acid bacteria made by oneselfand the last but not least was the procedurefor yogurt making as shown in figure 1. The final materials were discussion and question-answer as well as a review of the material that had been submitted by the participants.

The third step was the practice. This practice was intended to carry out the motor activities of participants in understanding the theory and material of probiotic fermentation technology that had been given. Each group was given the same materials and tools. The materials given were 1 liter of pasteurized milk, flavor/taste enhancing fruits such as banana, jackfruit, strawberry, dragon fruit and durian, and starter or plain lactic acid bacteria. The devices consisted of a fire heater, blender, mixer, and aluminum container capacity of 1L, lid and bottle of *Ca* 200 ml. Figure 1 show the devices and materials used in the yogurt production. The day after the practice, the leader of the group report and show the Yogurt their produce to the trainer and discuss a problem if any. Sometime later the team monitored that there were several groups of participants

who were actively making probiotic milk preparations with several variations in taste and aroma.

The fourth step was show off the results of the diversification of probiotic dairy products. This step was to provide an opportunity for the training participant to show off their product in a seminar or exhibition for development of the product of the community service programs at Brawijaya University Malang. This exhibition displays the products of community service carried out by various universities in East Java as well as offering cooperation /between micro businesses.

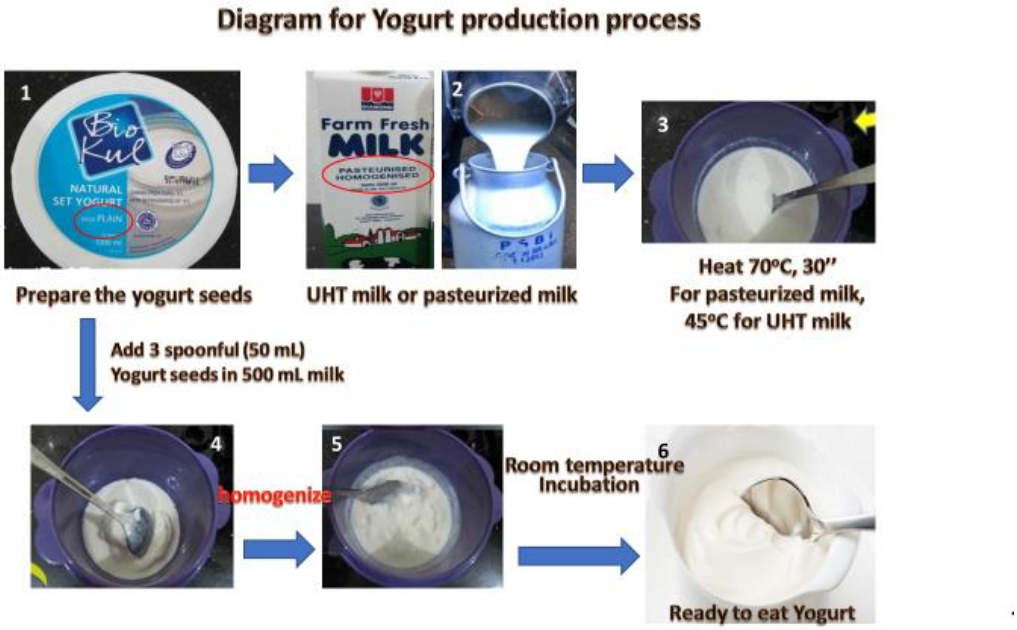

Figure 1. Diagram of yogurt production process

III. RESULT AND DISCUSSION

Probiotics used in training programs are the result of research by Isnaeni and Mertaningsih (2015)[21] which was shown to have inhibitory activity against microbial pathogens of Extended Strain Betalactamase (ESBL) *Eschericia coli* and Methicillin Resistance *Staphylococcus aureus* (MRSA). The resultsoftheprobioticcombinationtestconsistingofsevenprobioticspecies were alsoabletoincrease gamma-interferon levels in PBMCs in pediatric TB patients(Rosyidah, 2020). The results of the study are also patented with registered status. Thus, this community service program is a pilot for downstream research products.

Previous implementation of a similar community services has also been carried out in Wonorejo (2017) and Sumberejo Village (2019), Batu, but has not yet produced a product that is ready to sell. The results of the training are still limited and consumed in the family. In addition, in Batu, there are Usaha Mikro Kecil Menengah (UMKM that produce fermented probiotic milk and are sold in the city centre where tourists visit.

[21]Nelintong, Isnaeni & Nasution, *supra* note 13.

The commitment and enthusiasm of the training participants in Purwodadi Village needs to be appreciated, as well as the support and village apparatus, in this case the village head and village-owned enterprises that have provided the widest possible facilities for the community to have entrepreneurship. A cafe in the Purwodadi Botanical Garden has also offered an opportunity of cooperation so that the PKK women are willing to supply fruit juice yogurt drinks. Follow-up this offer is still constrained by licensing. Probiotic fermented milk products sold by trainees are stored in freezers or sold in the form of frozen drinks, so it is trouble for buyers who do not have a refrigerator or cooler in their homes.

The pretest and post test were held to see the enthusiasm of the trainees towards the given topic. Based on the pre- and post-test results, most of the participants already knew about probiotic milk (yogurt) and had tried consuming it. However, the participants had never practiced making yogurt on their own, even though they felt happy eating yogurt and knew its health benefits. Therefore, the participants were very enthusiastic about knowing how to make this yogurt. What is interesting is that, before the practice of making yogurt, the participants were only interested in taking part in practical training. However, after the training and counseling, the participants already had the view to make and consume them by their families and wanted to sell them to increase their income.After training to make yogurt, the participants are asked to do a post-test. Some questions in post-test as same as the pre-test.

Based on the results of the pre- and post-test, it can be seen that the participants' understanding of the definition of yogurt, ingredients, and how to make yogurt increases significantly after the participants attend the training material. Table 2 shows the pre-test and post-test result of the participants. The participants show excited following the practice, and the result of the post-test shows they knowledge to be better.

Table 2. Training Test Pre- and Post-Test Results

Right Answer Score	Number of Participants (people)	
	Pre- Test	Post- Test
100	0	10
90	5	8
80	9	12
70	14	8
60	11	8
50	9	1
40	3	1
Total participants	51	48

In the last section, the participants were given the opportunity to stay in touch with the Community Service Team after training to improve the memory of training materials and encourage participants to apply the training they have received. In this

way, participants can continue asking questions about the practice and also about the results of the training obtained, and increase their knowledge of the process that will be undertaken. Members can also exchange ideas to deal with situations that cannot be resolved. Participants can guide or exchange experiences with each other to develop good practices in making yogurt products. With this way, they will build a community between participants who will help improving not only their own performance but also increasing the consistency of the practical activities carried out.

Efforts have been made to find solutions to marketing constraints that hinder the distribution of products guided by the Community services Team of the Faculty of Pharmacy, through the holding of several trainings. The training materials that have been designed include the procedures for registering food supplement products through the Jakarta Drug and Food Control Agency. The program was proposed to the Directorate of Higher Education in June 2019, and it was accepted, but its implementation was hampered by the COVID-19 pandemic.

The training materials on how to register are not simple, so a special training program is needed. Some of the materials that need to be provided include requirements for yogurt drink preparations according to the Indonesian National Standard (SNI, 2009), test stability of preparations, documents that must be prepared for pre-registration. Marketing management materials will also be provided in the training.As a resource, will be invited from BPOM and agents who are experts on ISO 2100 issues.

The feasibility study for program implementation turned out to be impossible after the Covid-19 pandemic. Until now, communication with the UMKM candidates has been continued by while waiting for the opportunity to carry out training before registering products with BPOM.

The most appropriate way to facilitate this participant activity is to provide online facility, such as the creation of the WhatsApp Group, so that participants and facilitators can communicate with each other. In order to maintain communication between the facilitators, refreshment is done when they need advanced training, such as how to manage financial administration or management of food production and good quality control.

Figure 2 show pictures of probiotic milk products with various flavors and tastes that have been presented in a limited community and show off in the Brawijaya university exhibition for the products of community service program.

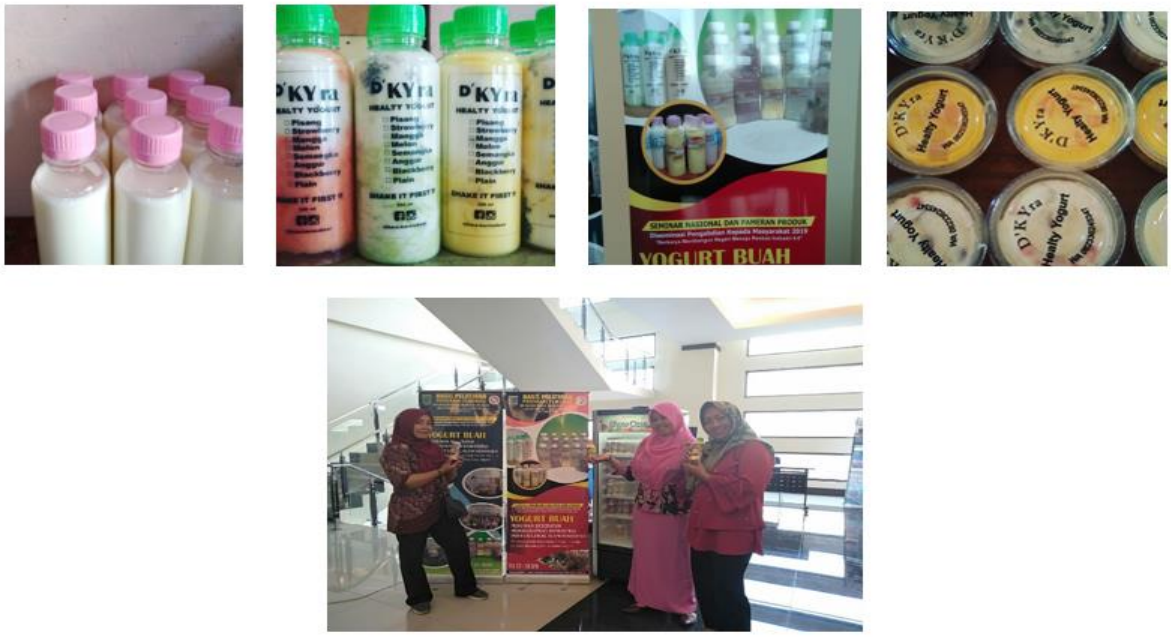

Figure 2.*Probiotic milk products with various flavors and tastes which were exhibited in the exhibition of the results of the community service program at Brawijaya University*

In compared to the same program that we did in the previous year in the other areas, the people in Purwodadi are more enthusiastic, excited and creative, which can be seen in the products and packaging they make (Figure 2).

The head of Purwodadi village greatly appreciates the enthusiasm shown by its residents who are interested in developing probiotic milk products. The village-owned enterprises (Badan Usaha Unit Desa/BUMDES) also already to support this activity. Because distribution regulations require that dairy products must be produced in a proper and correct way for food production (Cara PembuatanPangan yang Baik dan Benar/CPPB, with registered number MD), further assistance is needed for scale-up in the process production, quality control and registration.

Recommendations for the next program, it is necessary to conduct more intensive and integrated training by involving practitioners in the industry, especially those who produce processed milk, ranging from handling raw materials, processes, product quality assurance, stability, halal aspects, packaging, registration to marketing management. For trainees who are keen to develop probiotic milk products will be facilitated to cooperate with related industry partners, in order to meet the development of manufacturing technology until registration, because probiotic milk is categorized as Health Supplements. Results of the training showed that trainers became aware that fermented milk products do not belong to the category of household industrial products, so it requires special handling.

IV. CONCLUSION

Training and Mentoring of Probiotic Milk Technology Development conducted in Purwodadi Village, Purwodadi Pasuruan Sub-district can increase the understanding and knowledge of women in Family Welfare Program regarding the processing of

yogurt milk. A hundred percent correct answers, which previously numbered "zero" are increasing to 10 people out of 51 people. However, the correct answer that is 40%, are previously 3 people, but drop to 1 person. This program succeeded in increasing the participants' creativity to diversify dairy products.This program needs to be followed by training on management, good production methods, quality control and marketing techniques programs.

The training process successfully increased the interest and ability of trainees in producing yogurt. Participants are passionate about increasing the economic potential of milk. Considering that dairy products according to the BPOM-RI regulations must have a code registration number of MD, then it is recommended to assist in the scale-up process for small scale food/drink production, licensing and marketing. The advanced training, such as how to manage financial administration or management of food production and good quality control can be proposed for further development programs.

V. ACKNOWLEGMENT

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