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Comprehensive Prevention of Covid 19 Service on Dairy Farms, Namorambe Subdistrict, Deli Serdang Regency

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Abstract. COVID-19 is the disease which is very contagious so that the government issued several policies to be implemented by the community, namely wearing masks, carrying out distancing, diligently washing hands, using disinfectants and eating foods that can strengthen antibodies. The service had carried out among dairy farmers in Namorambe subdistrict, Deli Serdang Regency. The activities that were conducted, i.e teaching to make biodisinfectant, making ice cream sticks enriched with hisperidin compounds derived from red guava, moringa leaves and nagami orange and making dadih which was fermented milk on bamboo tube. The targets of the activities are: 1) The community knows to make biodesinfectant as a preventive measure against covid 19 2) The community knows the benefits of the hispiridin compound which can increase the chances of the community being more resistant and stronger against covid 19, 3) The community knows the benefit of dadih and 4) Businesses on milk are developing because of the resulting product diversification. The results of the service that the dairy farmers are able in making biodisinfectants, ice cream sticks containing hispiridine compounds and curd. Thus they are able in producing and sell it. They also make these products for families so that families are healthier and avoid the attack of covid 19.

Keyword: covid 19, biodesinfectant, dadih, hispiridin, milk

Abstrak. *COVID-19 adalah penyakit yang sangat menular sehingga pemerintah mengeluarkan beberapa kebijakan untuk dilaksanakan oleh masyarakat yaitu memakai masker, melaksanakan jaga jarak, rajin cuci tangan, menggunakan desinfektan dan makan makanan yang dapat memperkuat antibodi. Pengabdian telah dilakukan di kalangan peternak sapi perah di Kecamatan Namorambe, Kabupaten Deli Serdang. Kegiatan yang dilakukan yaitu mengajar membuat biodisinfektan, membuat stik es krim yang diperkaya dengan senyawa hisperidin yang berasal dari jambu biji merah, daun kelor dan jeruk nagami serta membuat dadih Target kegiatan adalah: 1) Masyarakat mengetahui penggunaan dan pembuatan biodesinfektan sebagai tindakan preventif terhadap covid 19 2) Masyarakat mengetahui manfaat senyawa hispiridin yang dapat meningkatkan peluang masyarakat menjadi lebih tahan dan kuat terhadap covid 19. 3) Masyarakat mengetahui manfaat dadih yang juga meningkatkan antibodi manusia dan 4) Usaha susu berkembang karena diversifikasi produk yang dihasilkan dibutuhkan oleh masyarakat. Hasil kegiatan ini adalah peternak sapi perah mampu membuat biodesinfektan, es krim stik yang mengandung senyawa hispiridin dan membuat dadih. mereka mampu memproduksinya dan menjualnya. Selain itu mereka membuat produk tersebut untuk keluarga sehingga keluarga lebih sehat dan terhindar dari covid 19.*

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1. Introduction

Deli Serdang Regency is in North Sumatra Province which is located between 2 ° 57 North Latitude and 3 ° 16 South Latitude and 98 ° 33 - 99 ° 27 East Longitude with an area of 2,497.72 km². This regency has 22 sub-districts and is bordered to the north with Langkat Regency and the Malacca Strait, to the south with Karo Regency and Simalungun Regency, to the east with Serdang Bedagai Regency and to the west bordering Karo Regency and Langkat Regency [1]. Deli Serdang Regency surrounds 2 (two) main cities in North Sumatra which are Medan and Lubuk Pakam. With a strategic position, the natural resources and manpower owned by Deli Serdang Regency will be a potential that can be developed into a competitive advantage and in attracting investors to develop their businesses in this area [2].

The problem currently faced by the community in Deli Serdang Regency is the occurrence of the Covid 19 outbreak which is very contagious and deadly. Hundreds of people who have died due to covid 19 [3]. Therefore, what can be done is preventive measures such as using biodesinfectant and food intake that can increase body resistance/antibodies. The use of bio-disinfectants is preferred [4], because the use of chemical disinfectants can cause irritation to the hands, feet and face.

Actions to increase immunity during pandemi can be done by utilizing flavonoid compounds to inhibit the binding of covid 19 virus proteins to receptors in human cells and inhibit the replication of viruses number. Hespiridin is the most potential of flavonoid compounds. According to the previous research by the Center for Tropical Biopharmaca Studies, IPB University, hesperidin can be found in local fruits such as oranges, red guava and moringa leaves. In Namorambe District, some of the communities are guava farmers. Moringa plants are also grown by rural communities in Namorambe. Moringa oleifera is a plant in tropical and subtropical areas [5]. Moringa leaves contain low water content, lower phenol percentage (3-4%), high protein (13-14%) and mineral (11-13%). Moringa leaves also contain calcium (2.9 - 3%), potassium (1%) and iron (50 - 80mg / 100g dry leaves) [6]. Another way to boost immunity is to provide the high quality of nutritional intake. One of the foods with good nutrition is curds which are local wisdom foods. Curd is processed from fermented milk in bamboo tubes. Curd contains various active microbials such as Lactobacillus plantarum which has very strong antioxidant properties. Curd also contains enzymes needed by the human body for self-healing [7].

In this community service, the activities that have been carried out are 1) conduct training and counseling on the use of fruit waste to become biodesinfectant. Making biodesinfectant using

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the garbage enzym method only requires rejected fruit which are often found in traditional markets such as papaya, banana and pineapple. 2) Provide training and counseling using the flavonoid hispiridin compound. Hispiridin will be used from the extract of guava and moringa leaves, then processed with milk into ice cream. 3)Provide training on making Dadih and 4) Provide entrepreneurial motivation for breeders to increase reliable livestock business.

2. Method

Community service methods include:

Participatory training and community empowerment based on fostered milk livestockers/farmer groups where all community service activities are carried out to the community by using groups as learning media and mentoring using adult learning methods and andragogy, planning and monitoring and evaluation of all of the community service activities. In addition, there was a Participatory Rural Appreciation so that group members are actively involved and the community as subjects while universities as facilitators. The methods also applying affordable technology both materials and tools and can be done by milk livestockers/farmers to develop quality product thus to support their business.

Furthermore, the above method is implemented in 6 (six) stages, namely:

a. Conducting observations or surveys to determine the conditions on the ground, by exploring the problems faced by milk livestockers/farmers in Namorambe subdistrict, Deli Serdang Regency.
b. Questions and answers or interviews were conducted with milk livestockers/farmers to find out their potential and enthusiasm in the service program, namely prevention covid 19 whilst pandemi one way by milk diversity production.
c. The activity of introducing a community service program in which the community service team introduces a plan to members of the milk livestockers/farmers group. At this stage, agreed upon the time and schedule of activities that will be carried out such as the delivery of material, demonstrations and counseling assistance.
d. Counseling was conducted in the form of training lectures and demonstrations at Jati Kesuma village, Namorambe subdistrict, Deli Serdang Regency. Counseling activities are divided into 3 materials namely biodesinfectant, ice cream stick and Dadih. This is done so that milk livestockers are aware of the potential and resources they have, especially in relation with preventive ways on Covid 19.
e. The practice of labelling and packaging products, namely hand spray biodesinfectant, BORSIH (biodesinfectant for cleaning cow cage, house, bathroom, toilet), ice cream stick and dadih.
f. Carry out monitoring of products.

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3. Results and Discussion

In accordance with the problems of partners, a series of activities/training have been held in Jati Kesuma village. According to [8] training can help people understand new things thus increasing social progress even more economic growth. [9] also mentioned that after attending a training people became more productive. [10] sted that training created motivation.

3.1 Biodesinfectant Training

The training on making biodesinfectants went well and was enthusiastically attended by the participants. Biodesinfectants are taught using the fermentation method of fruit peels to produce enzymes that are anti-microbial and have anti-septic abilities [11].

In the fermentation process the ratio of sugar : fruits waste : water was 1: 3: 10 [12]. The sugar used is dry molasses. Sugar is a source of carbohydrates for microbes which will develop and produce enzymes. Types of fruit or vegetables are free to use and generally the fruits used are local fruits that are found in markets such as bananas, papayas and pineapples. These fruits carry their respective enzymes such as bananas carry amylase enzymes, papaya and pine apple carry protease enzymes. Both the enzymes from the microbial and the enzymes from the fruits enrich the content of the eco enzyme solution. The water used is non chlorined water as chlorine will kill the microbes that will develop in eco enzymes [13].

Furthermore, all ingredients are mixed in a closed container and fermented for 3 months. Usually, the fermentation process only targets to increase the microbial population so that it only lasts about 21 days. However, in making biodesinfectant enzymes, fermentation is allowed for up to 3 months with the aim that all enzymes, both microbial and the largest percentage derived from fruits, can be squeezed out of the material that carries them, in this case fruits.

The biodesinfectant enzyme can be used as a cleaning solution for multipurpose cleaner. Because of its ability to suppress gram-negative bacteria, so this biodesinfectant is good for hand sanitizer. Besides that, it can also be used for mopping, washing dishes, cleaning bathrooms. windows, motors, and so on because the results of enzyme fermentation have some kind of antiseptic property [14]. In addition, this biodesinfectant is very good for cleaning livestock stalls [15], treating wounds in livestock, suppressing the development of scabies, especially often found in goats / sheep and accelerating the fermentation of forage.

In this biodesinfectant training, starting with theoretical training first. During the training, participants were distributed samples of biodesinfectant which had been packaged in a hand sprayer bottle so that participants could immediately know the properties of the biodesinfectant, such as color and aroma. The color of the biodesinfectant is yellow, somewhat resembling the color of turmeric with the aroma of fermented fruits. Because the biodesinfectant will be used as a hand sanitizer, 5 drops of fragrant lemongrass extract are added for every 60 ml bottle. With

the added sere-fragrant extract, the participants liked hand sanitizer, especially because they could be used during Friday prayers.

During the training, trainers demonstrated how to use biodesinfectant for mouth rinses in an effort to prevent tooth decay. Furthermore, the participants also distributed pure biodesinfectant to be tested in their respective homes to clean houses, cattle sheds and treat scabies and ringworm in livestock.

On the theoretical training, there were many questions from the participants including suggestions that this training be continued to the pig farmer to clean the pig pen because the smell of the pig pen is very disturbing to the environment.

The theoretical training was continued with practice. Initial practice is to make enzymatic biodesinfectant with 10 kg of molasses, 30 kg of fruit and 100 liters of well water. Together with the participants, the fruits consisting of oranges, star fruit, bananas, papaya, carrots and pineapples were washed. Furthermore, all cut into 3 cm size. The barrel with a capacity of 160 liters is cleaned, then molasses is added, water is added, and stirred evenly. If the molasses with water has been stirred homogeneously, then add the sliced fruits. Furthermore, the barrel is closed tightly, no oxygen should enter. Every day for the first 5 days, the barrel is opened to exhaust the gas for 10 minutes. Furthermore, until 100 days, the barrel cannot be opened. After 100 days, the barrel is opened, the biodesinfectant is filtered using a Muslim cloth and the bio-infective is stored in a closed jerry can and will not expire.

On the training, the trainers brought 1 barrel of 35 liters containing biodesinfectant which was 100 days old. The aim was that participants could see the properties of the biodesinfectant, namely color, aroma and taste. Participants are taught how to filter and store infectious biodesinfectant. Because the activity is carried out in a cow shed, it is also taught to put biodesinfectant into a sprayer and spray it on the wounds of cows and this is done every day so that the wounds on the cows dry quickly. There is a discourse in the Kesuma Maju group to sell biodesinfectants to interested people. Price for 1 litre of biodesinfectant IDR 30,000

3.2 Training on Making Ice Cream Sticks with the Addition of Active Ingredients Hispiridin from Red Guava, Moringa Leaves and Nagami Orange

One of the preventive measures during a pandemic is to improve food intake to increase body resistance / antibodies. Actions to increase endurance can be done by utilizing flavonoid compounds to inhibit the binding of covid 19 virus proteins to receptors in human cells and inhibit the replication / increase in the number of viruses. The type of flavonoid compound found with the most potential is hespiridin. Hespiridin can be found in local fruits such as red guava, moringa leaves and nagami lime according to the result of research by the Center for Tropical Biopharmaca Studies, IPB University.

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The training for making ice cream sticks begins with preparing of Freezer, Blender, Stick Ice Cream Mold, Ice Cream Wrapping Plastic, Electric Sealer to seal Ice Cream Sticks. In the training, firstly taught how to prepare red guava jam.

Guava contains about 85% water content. When processed directly into ice cream ingredients, the ice becomes mostly water and not soft. Therefore, guava must be peeled first, take the pulp, blend and cook to reduce moisture content. When the guava has thickened like jam, it means that the guava can be used to be processed into ice cream sticks.

Next prepare Moringa leaves. Moringa leaves are picked from the stalk, then dried in the morning sun so that the active ingredients and vitamins are not damaged. When it is dry, it is blended finely and stored in a tupper ware.

Nagami oranges are only peeled off. The Kesuma Maju group was given a Nagami Orange mother tree that had been planted at the house of the head of the Kesuma Maju group, Mr. Abdul Majid. In the following six months, the mother tree can be used as a source of fresh fruit to be given to other group members. The active compound of Hispiridin is actually more abundant in the skin than the pulp. Especially for Nagami oranges, the skin is sweeter and tastier than the pulp.

3.3 Training on Making Dadih

Dadih is a food from West Sumatra and consist of curd and whey. Curd is incredibly good for health, contains microbials, especially lactic acid bacteria and enzymes [7]. Therefore consuming curds will increase the body's immunity. The curd training was attended by members of the Kesuma Maju group. The process is pasteurized milk and put into 1 segment of Gombong bamboo then covered with wilted banana leaves, tied tightly to the top cover with a rubber band. Then stored in a shady and clean place such as in the kitchen and left for 2 or 3 days. After that, the bamboo is opened, the curd is in the form of a lump in the bottom of the liquid. The curd clumps are then added with chilies and shallots, added salt and eaten with rice. The liquid curd is added with sugar and syrup and is drunk like drinking yogurt. The curd making is very simply but the result is a high quality product.

4. Conclusion

The result of this community service is that the Kesuma Maju dairy farmer and the surrounding community are capable in making bio-disinfectants, ice cream sticks containing hispiridine compounds and curd. Thus they are able to produce and sell it. They also make these products for families so that families are healthier and avoid the attack of covid 19. Hopefully, the knowledge will be done by other communities in the future considering the group members who have been trained become agents of change.

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REFERENCES

[1] Badan Pusat Statistik 2019 Kabupaten Deli Serdang Dalam Angka BPS Provinsi Sumatera Utara. Central Bureau of Statistics 2019 Deli Serdang Regency in Figures BPS North Sumatra Province. (in Indonesian)

[2] Badan Pusat Statistik 2018 Kabupaten Deli Serdang Dalam Angka, BPS Provinsi Sumatera Utara. 2018 Central Statistics Agency Deli Serdang Regency in Figures, BPS North Sumatra Province. (in Indonesian).

[3] M.M. Sari, N. Ardian, E. Erwansyah. "Pengaruh Covid 19 Terhadap Perekonomian Masyarakat Di Desa Lantasan Lama Kecamatan Patumbah Kabupaten Deli Serdang Sumatera Utara". [The Influence of Covid 19 on the Community Economy in the village of Laluan Lama, Patumbah District, Deli Serdang Regency, North Sumatra]. *Jurnal Manajemen Tools*. vol. 13, no 1, pp. 64-70. 2021.

[4] A. Owusu-Asiedu, C.M. Nyachoti, S.K. Baidoo, R.R. Marquardt and Yang. X. Response of early-weaned pigs to an enterotoxigenic *Escherichia coli* (K88) challenge when fed diets containing spray-dried porcine plasma or pea protein isolate plus egg yolk antibody. *J Anim Sci* . vol. 81. pp. 1781-1789. 2003.

[5] N. Ginting, N. Ginting, D.N. Aulia and J. Hidayati. Utilization of Moringa (*Moringa Oleifera*) as A Multi Function Plant for Conservation Land in Lumban Suhi-suhi Village, Samosir Regency. *Jurnal of Saintech Transfer*. vol. 1, no. 2, pp.156-163. 2018.

[6] H. Makkar and K. Becker. Nutrients and antiquality factors in different morphological parts of the Moringa oleifera tree. *J. Agri. Sci. Cambridge*. 128 311. 1996.

[7] N. Ginting. "Dadih bamboo ampel (*Bambusa vulgaris*) and bamboo gombong (*Gigantochloa verticilata*) 2 and 3 days fermented: effect on salad dressing hedonic quality". Proc. IOP Conf. Series: Earth and Environmental Science 130, 2018

[8] D. Harding, A.L.Kadiyono, Y. Hidayat, N. Yanuarti. "Pelatihan dan pengembangan sdm sebagai salah satu upaya menjawab tantangan mea". [HR training and development as one of the efforts to answer the challenges of the MEA] *Jurnal Psikologi Sains dan Profesi*. Vol. 2, No. 2, pp. 185-192. 2018.

[9] E. E. Kandou. "Pengaruh pelatihan dan pengembangan karyawan terhadap produktivitas kerja karyawan (Studi Pada PT. Air Manado)". [The effect of employee training and development on employee work productivity (Study at PT. Air Manado)] *Jurnal Ekonomi Bisnis*, vol. 10, no. 2. 2013.

[10] H Rukka, A Wahab."Faktor-faktor yang mempengaruhi motivasi petani dalam pelaksanaan kegiatan P2BN di Kecamatan Barru, Kabupaten Barru". [Factors influencing the motivation of farmers in implementing P2BN activities in Barru District, Barru Regency] *Jurnal Agrisistem.* vol. 9, no. 1, pp. 46-56. 2013.

[11] C. Arun, Sivashanmugam. "Investigation of biocatalytic potential of garbage enzyme and its infuence on stabilization of industrial waste activated sludge". *Process Saf Environ Prot*. vol. 94, pp. 471–478. 2015.

[12] C. Arun, Sivashanmugam. "Identification and optimization of parameters for the semi-continuous production of garbage enzyme from pre-consumer organic waste by green RP-HPLC method". *Waste Manage*. vol. 44, pp. 28–33. 2015.

[13] Rahman, Samina , I. Haque, C.Rajiv, DevGoswami, P. Barooah, K. Sood, B. Choudhury. "Characterization and FPLC Analysis of Garbage Enzyme : Biocatalytic and Antimicrobial

Activity. Waste and Biomass Valorization". https://doi.org/10.1007/s12649-020-00956-z. 2020.

[14] M. Singh, K. Kavitha, D. Bharti, S.K. Dixit, R. Mukherjee, S. Soni, H. Jagatap and J.S. Gandhar. "Clinical management of mastitis in goat: A case report". *Journal of Entomology and Zoology Studies*. vol. 6, no. 6, pp. 1163-1165. 2018.

[15] N.Ginting, Hasnudi and Yunilas. "Eco-enzyme Disinfection in Pig Housing as an Effort to Suppress *Escherechia coli* Population". *Jurnal Sain Peternakan Indonesia*. vol. 16, no. 3. 2021.