



## Introduction of Torbangun Leaves as the Best Traditional Lacteous and its Processing Innovations in Antasan Senor Village, Banjar Regency, South Kalimantan, Indonesia

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**Abstract:** Torbangun leaves have been used by the Batak people and have been scientifically proven to be the most effective lactagogue. The coverage of exclusive breastfeeding in the Martapura Timur Health Center Working Area is still low. Therefore, it is necessary to introduce the benefits of Torbangun leaves to improve welfare and breastfeeding coverage in Antasan Senor Village, Martapura Timur District, Banjar Regency. The purpose of the activity is to educate Integrated Service Post cadre members and pregnant women in the management of breastfeeding, the introduction of Torbangun plants, and the development of processed Torbangun leaves. This community service is carried out through the service-learning approach method through education and practice of breastfeeding, cultivation of Torbangun plants, and development of innovative Torbangun leaves products. Although statistically insignificant, this activity has provided theory and practice to encourage awareness of breastfeeding, cultivation of Torbangun plants, and development of processed products of Torbangun leaves.

**Keywords:** Torbangun, lactagogue, breast milk



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## Introduction

Based on the 2018 Basic Health Research (*Riset Kesehatan Dasar-Riskesdas*) by the Health Research and Development Institute of the Ministry of Health, the prevalence of short toddlers has increased from 2016 to 29.6% in 2017. The most appropriate handling of stunting is in the first 1000 days of life, namely from pregnancy to 2 years old<sup>1</sup>.

<sup>1</sup> Balitbangkes Kemenkes. Hasil Utama Riskesdas 2018. Balitbangkes Kemenkes. Jakarta. 2018.

Exclusive breastfeeding is one of the essential elements in efforts to improve nutrition in the first 1000 days of life. The 2017 Indonesia Health Demographic Survey (*Survey Demographic dan Kesehatan Indonesia-SDKI*) has shown relatively good breastfeeding coverage (52%), but the results of Riskedas 2018 show that nationally, the exclusive breastfeeding rate for babies aged 0-5 months only reaches 37%<sup>2</sup>. This result is still below the target of 50%. Similarly, data per region shows things that are not much different. However, based on the 2018 Health Sector Performance Report, exclusive breastfeeding coverage in South Kalimantan Province has reached 59%<sup>3</sup>. The results are pretty encouraging, although there are still cities/regencies that have not reached the target. The 2018 Banjar Regency Health Profile shows that exclusive breastfeeding coverage is still at 41%, which means that it is still less than the 2015-2019 Strategic Plan (*Rencana Strategis-Renstra*) target of 50 percent in 2019<sup>4</sup>. The 2017 SDKI shows that the percentage of children under 6 months of age who receive exclusive breastfeeding has increased in the last 5 years, from 42% in the 2012 SDKI to 52% in the 2017 SDKI<sup>2</sup>. On the other hand, the number of children who do not receive breast milk increased from 8% to 12%. Pandemic conditions affect all joints of life, and the process of exclusive breastfeeding needs attention.

The report of the South Kalimantan Province 2021 also shows the relationship between breastfeeding coverage and children's nutritional status. During the pandemic, there was an increase in malnutrition status in all districts, and the highest occurred in Banjar Regency (11.21%), up from the 2018 data, which previously only reached 4.8%. In the results of the 2022 SSGI Survey, the Stunting rate in Banjar Regency increased to 26.4%.

Exclusive breastfeeding coverage in Banjar Regency as a whole reached 46.3%. However, Martapura Timur District is an area that has very low exclusive breastfeeding coverage, which is 7.2%<sup>4</sup>. The achievement of exclusive breastfeeding in the region will significantly affect the nutritional status of children and the overall quality of resources. The Martapura Timur Health Center reported in May 2023 data that exclusive breastfeeding coverage reached 83%, but stunting cases were still high, around 21.8%. The results of research conducted by Hastuty and Hesty Marlina in the Martapura Timur Region obtained around 50% of the results of anthropometric measurements obtained by children who were below the red line; this shows that there is a nutritional problem, namely malnutrition<sup>5</sup>.

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<sup>2</sup> BKKBN. *Survey Demografi dan Kesehatan Indonesia (SDKI) 2017*. BKKBN. Jakarta. 2018.

<sup>3</sup> Dinas Kesehatan Provinsi Kalimantan Selatan. *Laporan Kinerja Bidang Kesehatan Masyarakat Tahun 2018*. Dinas Kesehatan Provinsi Kalimantan Selatan. Banjarmasin. 2018.

<sup>4</sup> Dinas Kesehatan Kabupaten Banjar. *Profil Kesehatan Kabupaten Banjar Tahun 2017*. Dinas Kesehatan Kabupaten Banjar. Martapura. 2018.

<sup>5</sup> Hastuti, Eny, and Hesty Marlina. "Hubungan penimbangan balita bawah dua tahun (baduta) terhadap status gizi baduta bawah garis merah (BGM)". 2018.

In addition to efforts to fulfill nutrition, family welfare is also one of the factors that affect malnutrition in children. BPS Banjar Regency informed that in 2020 (during the pandemic), underprivileged families in Martapura Timur District reached 253 heads of families <sup>6</sup>.

Increasing the coverage of breast milk can be sought through the introduction of lactose products, one of which is the Torbangun plant, which is a material that can stimulate, maintain, or increase breast milk production. In addition, Torbangun leaves also have benefits such as being anti-hyperglycemic and increasing the activity of the enzymes Super Oxide Dismutase and Glutathione Peroxidase. <sup>7</sup> <sup>8</sup>Product development can be used as a source of income to improve the welfare of the population. Therefore, efforts must be made to improve breastfeeding coverage in the work area of the Martapura Timur Health Center, Banjar Regency, South Kalimantan Province, through the development of products and applications for its use. These efforts are applied through the families of *Posyandu* cadre members who can act as agents of change in their areas.

**Method**

This community service is carried out through the service-learning approach, which involves education and practice of breastfeeding, cultivation of Torbangun plants, and development of innovative Torbangun leaf products through lectures, discussions, and practices. The media used are books, cultivation tools, Torbangun seeds, and simple food processing equipment. Table 1 contains the stages of community service activities in Antasan Senior Village, which is the working area of the Martapura Timur Health Center.

*Table 1. Activity Phases*

Phase	Activity	Date
I	Submission of research permit	June 28, 2024
	Location exploration, village determination, and participants from <i>Posyandu</i> cadres and pregnant women in Antasan Senior Village	July 2, 2024
II	Pre-test to test knowledge, attitudes, and behaviors of breastfeeding and lactagogue	July 15, 2024
III	Train participants on the importance of breastfeeding and its relationship to the quality of human resources in the future	15 July, 2024

<sup>6</sup> BPS. Kabupaten Banjar dalam Angka 2020. Banjar. 2021

<sup>7</sup> Andrestian, Meilla Dwi. "Efek Ekstrak Daun Torbangun (*Coleus amboinicus Lour*) terhadap Ekspresi Gen Pengatur Homeostasis Glukosa pada Tikus Hiperglikemia". *Diss. IPB University*, 2019.

<sup>8</sup> Andrestian, M. D., Damanik, R., Anwar, F., and Yuliana, N. D. "Anti-hyperglycemic effect of Torbangun (*Coleus amboinicus Lour*) leaves extract through liver and muscle glycogen deposits in Streptozotocin-induced hyperglycemic Sprague-Dawley rats model". *Medical Laboratory Technology Journal* 5.2 (2019): 70-80.

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Phase	Activity	Date
IV	Train participants to recognize Torbangun leaves as the best lactose and other benefits	15 Juli 2024
V	Train participants in Torbangun cultivation	15 July 2024
VI	Train participants in the development of Torbangun leave processing for internal family applications	7 August 2024
VII	Conduct evaluations with written and observational tests to test changes in knowledge, attitudes, and behaviors	7 August 2024
VIII	Observation of changes in knowledge, attitudes, and behaviors through the Torbangun Leaves product innovation competition to observe the improvement of capabilities in the development of Torbangun Leaves products.	7 August 2024

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## Result

### *Overview of the research location and participant characteristics*

The profile of Antasan Senor Village, Martapura Timur District, Banjar Regency shows that Antasan Senor Village has an area of 1.95 km<sup>2</sup> hectares and is 6.5% of the area of Martapura Timur District. The village of Antasan Senor is located at 114.8772 east longitude and 3.3771 south latitude. The village area consists of 6 RTs (Rukun Tetangga-neighborhood association) with a population of 2307 people. The population is 1191 males and 1117 females.<sup>9</sup>

There were 10 participants, seven of whom were *Posyandu* cadres, while the other three were pregnant women. All participants in this activity are housewives and women, as central figures in the family. Participants in the activity not only take care of the household and take care of children; some of these housewives are entrepreneurs, workers, or teachers.

### *Delivery of material and practice*

The first activity was held on Monday, July 15, 2023, at the house of the Head of Antasan Senor Village, Martapura Timur District, Banjar Regency. It was an introduction between the community service team and 10 participants, an explanation of the program, and a statement of commitment to participate in the program.

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<sup>9</sup> BPS. Kecamatan Martapura Timur dalam Angka 2023. Banjar. 2023.



*Figure 1.* Provision of Exclusive Breastfeeding Management Materials

After the explanation and statement of the participant's commitment, a pre-test was conducted to measure the participants' knowledge, attitudes, and behaviors about breastfeeding practices, types of lactose, and product development. At the end of the meeting, the results of the pre-test will be compared with the post-test to evaluate the effectiveness of the activity.



*Figure 2.* Exclusive Breastfeeding Counseling Booklet

Documentation of the first day's activities can be seen in Figure 1. In addition to the material in the form of lectures and continued with questions and answers, in this session, a booklet on Exclusive Breastfeeding Counseling was also distributed (Figure 2). Exclusive breastfeeding counseling material is essential to be given because this activity is the basis of knowledge for *Posyandu* Cadres and pregnant women to provide better information to pregnant women in the community of Antasan Senor Village, Martapura Timur District, Banjar Regency, South Kalimantan who are expected to provide exclusive breastfeeding to their babies.

The following material presented was about breastfeeding-promoting foods (lactagogue). Expressly, it was also conveyed about the lactagogue of Torbangun leaves. Torbangun leaves have been empirically used for a long time as a breast milk booster by the Batak people in North Sumatra. An explanation of the Torbangun plant, its cultivation, and processing is presented in the form of a book (Figure 4).



Figure 3. Torbangun Plant Seeds

The cultivation of Torbangun plants is relatively easy to do, and they can grow in different types of soils and climates. This plant cultivation method was also conveyed to the participants. After lectures and discussions, the event ended with the presentation of the book "Torbangun Cultivation: The Best Traditional Breast Milk Launcher," the handover of simple equipment for planting production (shovels, earthen forks, and sprayers), and Torbangun seeds with a total of 300 polybags for 10 participants.



*Figure 4.* Torbangun Cultivation Book

The distributed Torbangun seedlings are three weeks old and ready to be planted in the field. Some participants planted them in the garden, and some were allowed to grow in polybags. The seeds' harvest was used for the third meeting activity, namely the Torbangun product creation competition.

The second meeting (July 15, 2024) was filled with material on the Development of Torbangun Processed Products. Before the meeting, the team had conducted a recipe trial at the Food Technology Laboratory, Department of Nutrition, Banjarmasin Ministry of Health Polytechnic. The trial process aims to standardize recipes and procedures in order to obtain the best results.



Figure 5. Torbangun Leaves Innovation Products

The processed Torbangun products exemplified to the participants were made from fresh Torbangun leaves, and Torbangun leaves powder. The recipes for processed products practiced are Torbangun coconut milk vegetables, Torbangun steamed sponges, Torbangun onion cakes, Torbangun potato cakes, Torbangun cassava cakes, and Torbangun cookies (Figure 5).

After the delivery of material and questions and answers, the event continued with the submission of materials for making processed Torbangun leaves. The materials and equipment handed over include Torbangun leaves powder. Materials for the practice of making Torbangun processing are packaged in the Torbangun Product Creation Competition at the fourth meeting.

The third meeting (August 7, 2022) aims to enable participants to practice Torbangun leaf processing and be creative in making innovative products. Participants were divided into five groups, each consisting of two members. These groups are also projected to be teams of agents to change breastfeeding practices in their areas.

Each group was asked to elaborate recipes and make innovative products with Torbangun leaves or powder, which would then be contested. After being assessed by the three judges, the following winning results were obtained: 1<sup>st</sup> place was Group 4 with the creation of Torbangun fried rice and Peyek Torbangun by Mrs. Faridah and Mrs. Rahmadina. 2<sup>nd</sup> place was won by Group 5 by Mrs. H. Rusmini and Mrs. Aisyah who created *Waffle* Torbangun and *Bingka* Torbangun. Mrs. Alpisah and Mrs. Mahrita won 3<sup>rd</sup> place from Group 1, who created *Dimsum* Torbangun, *Bolu Banana* Torbangun, and



Bangkit Torbangun Cake. In addition to the group that won the championship, other groups also created recipes with Torbangun ingredients excitingly, such as Torbangun mud cake, Torbangun Siomay, Torbangun vegetable soup, and Torbangun Sempol and Nugget. The 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> place winners each received a prize in the form of a set of pots and knives. In addition, groups that have not had the opportunity to win are also given prizes in the form of drinking bottles. So that all groups participating in this activity get prizes.

Figure 6 shows some of the innovative products made from Torbangun leaves produced by participants. Apparently, the innovative creations and products of the participants proved that Torbangun can be part of the Banjar cuisine menu without changing the original taste.



Figure 6. Contested Torbangun Leaves Processed Innovation Products

The improvement in the participants' knowledge, attitudes, and behavior is evident from the results of the pre-test and post-test (Figure 6). Statistical testing using the Wilcoxon signed-rank test showed no significant difference in the change in knowledge ( $0,084 < 0,05$ ).

### ***Changes in Knowledge, Attitudes, and Behaviors after Counseling***

An insignificant difference ( $0.157; 0.180 < 0.05$ ) was also shown in the measures of attitude (Figure 8) and behavior (Figure 9). However, descriptively, the results of the pre-post-test showed an improvement in the aspects of knowledge, attitudes, and

behaviors of activity participants.

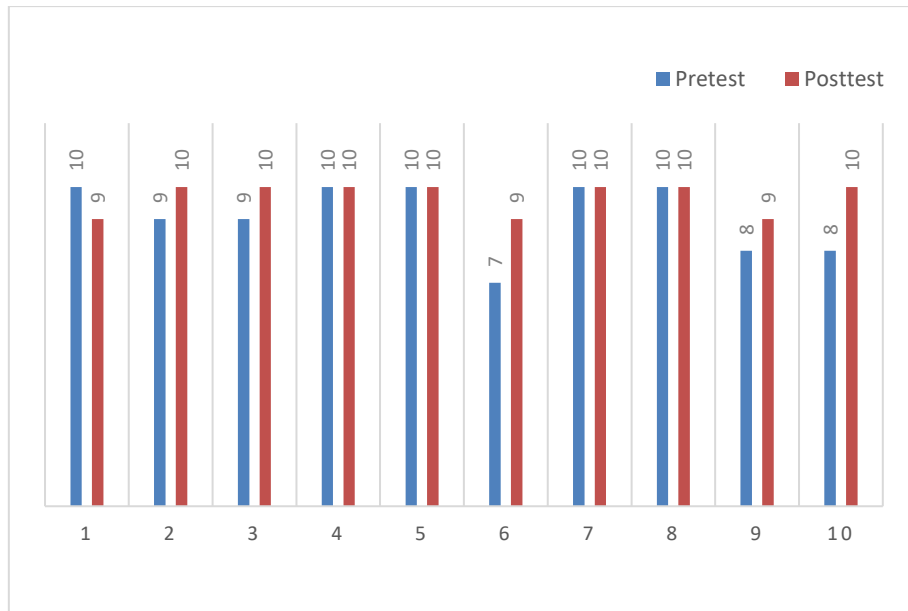


Figure 7. Changes in Knowledge of Participants

These results illustrate that the activity of educating *Posyandu* cadres and pregnant women in Antasan Senor Village, Martapura Timur District, Banjar Regency, South Kalimantan, is an activity that can affect changes in participants' knowledge, attitudes, and skills. Several studies also showed that there was a change in knowledge, attitudes, and behaviors after counseling and training.<sup>10 11 12 13</sup>.

<sup>10</sup> Bachtiar, R. A., Sumarto, S., Aprianty, D., and Kristiana, L. "Penyuluhan Gizi untuk Mengubah Pengetahuan dan Sikap Masyarakat terhadap Pengembangan Pangan Lokal Salak Manonjaya". *Indonesian Journal of Human Nutrition* 5.2 (2018): 62-73.

<sup>11</sup> Sumardilah, Dewi Sri. "Pelatihan pembuatan mp-asi who berbasis pangan lokal bagi kader posyandu dan ibu baduta di desa sidosari". *Jurnal Pengabdian Kepada Masyarakat Sakai Sambayan* 2.1 (2018): 36-40.

<sup>12</sup> Melina, Sisi, Sobariah Sobariah, and Tatty Yuniarti. "Peningkatan Pengetahuan, Sikap dan Keterampilan melalui Pelatihan dan Pendampingan Usaha Olahan Kerupuk Ikan Tongkol pada Kelompok Istri Nelayan di Kecamatan Simeulue Timur, Kabupaten Simeulue, Provinsi Aceh". *PELAGICUS* 2.3 (2021): 127-140.

<sup>13</sup> Ginting, Martinus, Annasari Mustafa, and Iman Jaladri. "Pedoman gizi seimbang berbasis pangan lokal terhadap pengetahuan, asupan dan status gizi ibu hamil". *Jurnal Vokasi Kesehatan* 6.2 (2020): 104-108.

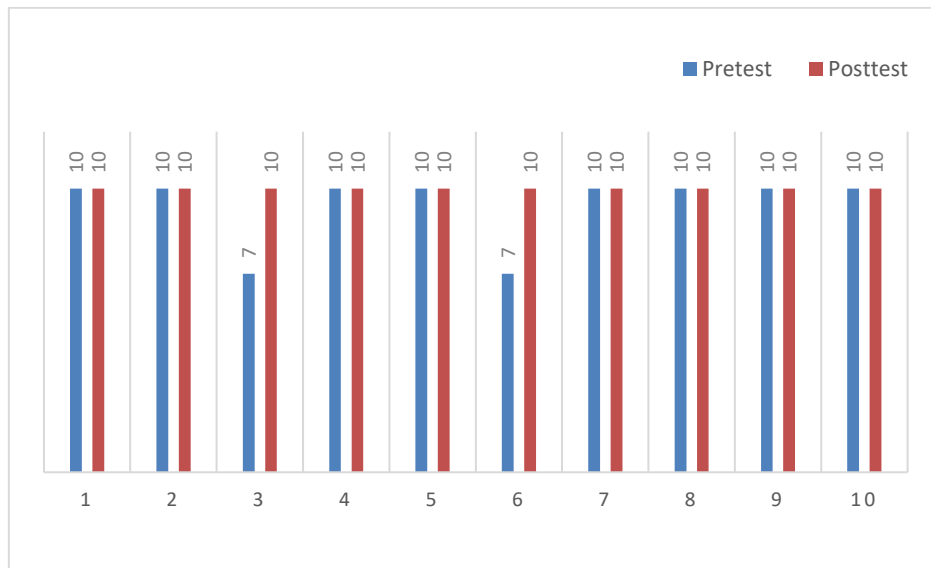


Figure 8. Changes in Participants' Attitudes

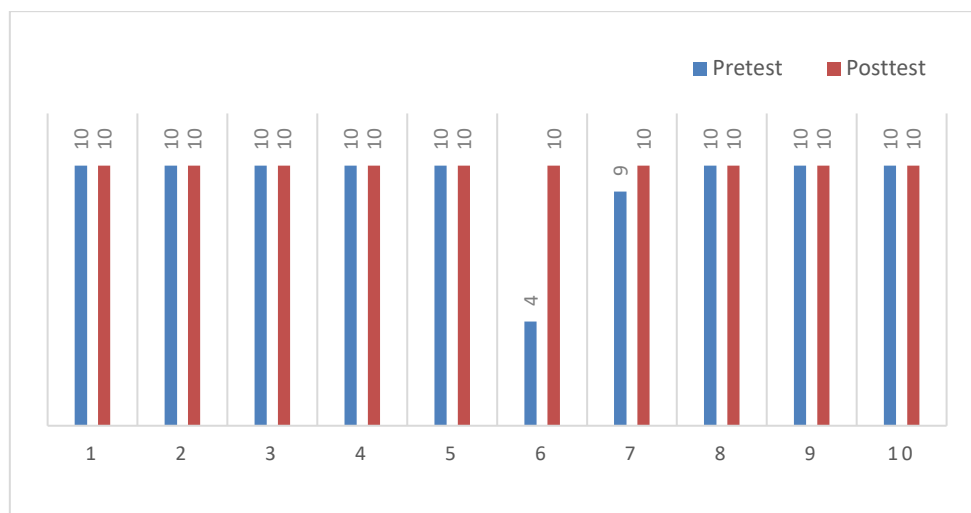


Figure 9. Changes in Participant Behavior

## Discussion

*Posyandu* cadres play the role of community empowerment agents by conducting training and mentoring. They assist the community in identifying health problems and planning appropriate solutions. This raises public awareness about the importance of balanced nutrition, good sanitation, and proper feeding practices.<sup>14 15</sup> Therefore, there

<sup>14</sup> Aurellia, B. W., Aulia, C. A., Kamila, D. A., Oktasyarifka, D. S. P., Liani, D. A., Zhannuba, E., and Katmawanti, S. "Literatur Review: Pemberdayaan Masyarakat Terhadap Kader Posyandu Di Indonesia". *Prosiding Seminar Nasional "Sport Health Seminar With Real Action" Ilmu Kesehatan Masyarakat Universitas Negeri Malang*. 2021.

<sup>15</sup> Sugiarti, Munia Diana, Suwanto Suwanto, and Haryani Saptaningtyas. "Pemberdayaan kader

were 10 participants, seven of whom were *Posyandu* cadres, while the other three were pregnant women. *Posyandu* cadres are involved in this activity because they have the principle of empowerment and community participation through family empowerment. Pregnant women are also engaged so that they can directly apply processed Torbangun leaves as lactagogue when they are breastfeeding.

Socialization can provide change and empowerment of the community in every activity if it is carried out in a structured manner and involves the community<sup>16</sup>. Socialization and explanation of the activities that will be carried out at the beginning of the activity are crucial because, with socialization, we can place ourselves in the community environment in terms of participants in this activity, namely *Posyandu* Cadres and pregnant women in Antasan Senor Village, Martapura Timur District, Banjar Regency.

This socialization activity is expected to bridge activities designed to educate *Posyandu* Cadres and pregnant women at the activity location on breastfeeding management, get to know the Torbangun plant as a lactone suitable for cultivation, and develop Torbangun leaves product innovation and commercialization so that the expected benefits can be achieved optimally.

Exclusive breastfeeding counseling material is essential to be given because this activity is the basis of knowledge for *Posyandu* Cadres and pregnant women as agents of change to provide better information to pregnant women in the community of Antasan Senor Village, Martapura Timur District, Banjar Regency, South Kalimantan who are expected to provide exclusive breastfeeding to their babies. According to Wahyuningsih and Marni, exclusive breastfeeding material needs to be provided to improve and increase information for pregnant women regarding the preparation of exclusive breastfeeding so that pregnant women are able to prepare for exclusive breastfeeding from the period of pregnancy.<sup>17</sup>

The following material is about lactagogue (breastfeeding-promoting food), which introduces explicitly Torbangun leaves. Currently, the leaves, which are a plant native to Indonesia, have begun to be widely known, but they have not been commonly used in South Kalimantan. Damanik *et al.* and Iwansyah explained that Torbangun Leaves had been empirically used for a long time as a breast milk booster by the Batak people in

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kehatan dalam pencegahan stunting di Desa Woro Kecamatan Kepohbaru". *Innovative: Journal Of Social Science Research* 3.6 (2023): 2343-2350.

<sup>16</sup> Nadiyah, Nurfadhilah, Nurul Aisyah, and Nurwahdania Nurwahdania. "Sosialisasi Rumah Bibit Model Kebun Gizi Pada Kelompok Roo Jao Mandiri Sebagai strategi Ketahanan Pangan Keluarga Di Kelurahan Jatiwangi Kota Bima". *Jurnal Pengabdian Magister Pendidikan IPA* 4.1 (2021).

<sup>17</sup> Wahyuningsih, Wahyuningsih, and Marni Marni. "Peningkatan pengetahuan ibu hamil tentang ASI dan persiapan menyusui eksklusif". *Educate: Journal of Community Service in Education* 1.1 (2021): 20-25.

North Sumatra.<sup>18 19</sup> Torbangun leaves have been scientifically researched to increase breast milk production and are more effective than other lactagogues.

The public has a good perception of the different food processing alternatives that are available. Thus, it is necessary to be exemplified and trained on how to process Torbangun, which is delicious and nutritious, so that the community can better accept and utilize it. The introduction of Torbangun processed products is critical, with the information that Torbangun has many benefits and can also be processed into various food products that can be used by themselves and can also be an added value as a product that can be sold.

Torbangun itself has been researched not only to increase breast milk production but also to provide other benefits, such as anti-diabetes, anti-hypertension, and improved blood lipid profiles<sup>20</sup>. Thus, Torbangun leaves can provide wider benefits.

Based on the pre-post-test that has been carried out in terms of knowledge, attitudes, and behaviors, the average score has increased. However, when tested, no statistics were showing a meaningful relationship. This is because the knowledge, attitude, and behavior of the average mother are good.<sup>21</sup> In addition, previous research has shown no significant relationship.

## Conclusion

This activity has provided theory and practice of breastfeeding, cultivation of Torbangun lactose plants, and development of Torbangun leaves processed products for participants who are *Posyandu* cadres and pregnant women in Antasan Senior Village, Martapura Timur District, Banjar Regency as part of the work area of the Martapura Timur Health Center.

This activity has encouraged the awareness of participants to improve breastfeeding practices, cultivate Torbangun lactagogue plants, and develop Torbangun leaf processed products.

This activity provides opportunities for the application of science in real life

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<sup>18</sup> Damanik, R., Damanik, N., Daulay, Z., Saragih, S., Premier, R., Wattanapenpaiboon, N., and Wahlqvist, M. L. "Consumption of bangun-bangun leaves (*Coleus amboinicus* Lour) to increase breast milk production among Batakese women in North Sumatera Island, Indonesia". *Asia Pac J Clin Nutr* 10.4 (2001): S67.

<sup>19</sup> Iwansyah, Ade Chandra. "Efek komponen bioaktif ekstrak daun torbangun (*Coleus amboinicus* L) terhadap kadar dan ekspresi gen-gen reseptor hormon laktogenik pada tikus laktasi". *Diss. IPB (Bogor Agricultural University)*, 2018.

<sup>20</sup> Suryowati, T., Rimbawan, R., Damanik, R., Bintang, M., dan Handharyani, E. "Antihyperlipidemic activity of torbangun extract (*Coleus amboinicus* Lour) on diabetic rats induced by streptozotocin". *IOSR Journal of Pharmacy* 5.5 (2015): 50-54.

<sup>21</sup> Fitria, T. N., Alamsah, D., Asmi, N. F., Sophia, C., Aprilianti, P., Azzizah, R., and Dewi, R. "Sosialisasi pemberian asi eksklusif pada peserta ibu guna meningkatkan pengetahuan dan sikap". *SELAPARANG: Jurnal Pengabdian Masyarakat Berkemajuan* 7.1 (2023): 652-656.

through technical guidance activities ranging from breastfeeding practices and cultivation of Torbangun lactagogue plants to product development.

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