

The Effectiveness Of Providing Torbangun Leaf Extract (*Coleus Amboenicus* Lour) On Breast Milk Production For Postpartum Mothers At PMB Nalom Tangerang In 2022

Engelin P Sembiring^{1*}, Ita Herawati²

^{1,2}Abdi Nusantara College of Health Sciences, Indonesia

*Corresponding Author:

Email: engelinasutine@gmail.com

Abstract.

The present study reports the first comprehensive study on the freshwater macroinvertebrates and its habitat preferences in Bilah River, the largest river in the Northern Sumatra. The riverside is characterized by the presence of anthropogenic and industrial activities which may alter the macroinvertebrate assemblage and biodiversity. Five months of investigation on 10 sampling stations from December 2016 to October 2017 was conducted based on the river flow in Bilah River. Principal component analysis indicated a decrease in trophic status from upstream to downstream of the river. A total of 27 taxa were recorded, with the most abundant group were members of Odonata, Gastropoda, and Decapoda. The highest density of macroinvertebrate was observed from station 1 (160 ind m⁻²), while the lowest density was observed from station 9 (38.64 ind m⁻²). Based on species distribution and similarity, two groups of habitats may be distinctively recognized based on the Bray-curtis similarity coefficient. Group 1 consisted of station 1, 2, 3 and 4 while group 2 consisted of station 5, 6, 7, 8, 9, and 10. Based on the diversity indices as ecological parameters, the habitat condition in Bilah River is categorized from low to moderately polluted. Spatial patterns in both environmental conditions affecting the macroinvertebrate assemblage was observed using canonical correspondence analysis (CCA) revealed the preferences from each macroinvertebrate species towards environmental conditions.

Keywords: *Bivalvia, bray-curtis, canonical correspondence analysis, density and gastropoda.*

I. INTRODUCTION

Exclusive breastfeeding is something that is expected of all postpartum mothers or breastfeeding mothers by not providing complementary foods or other foods besides breast milk even though this is in the form of formula milk. Based on law no. 36 of 2009 concerning health in article 128 paragraph (1) Exclusive is one of the government programs which states that every baby has the right to receive Mother's Milk (ASI) from birth for 6 months except for medical indications. However, there are many problems found in breastfeeding mothers who do not give exclusive breastfeeding, namely the production of milk that is not smooth or little milk production. Various articles or journals that cause breast milk are not smooth, namely, nutrition or food consumption is lacking, nursing mothers who experience stress, there are factors caused by babies who do not want to breastfeed, nipples that do not protrude so that there are difficulties for babies when breastfeeding. According to Sitiyaroh, 2020 who stated in his research on non-pharmacological treatments or a type of natural treatment or actions that do not use chemicals. Based on previous research, actions that can increase breast milk production with non-pharmacological treatment methods, consumption of local plants, lactagogue or lactagogue, are foods, drinks or special herbs that people believe can increase milk supply. The local lactagogue plant that has been used for generations is the consumption of tor wake leaves. According to Oktavia (2020) who states that torbangun leaves are also a food source that can be proven to be able to increase prolactin levels and breast milk volume so that the quality of breast milk is better while it also increases appetite.

This is because according to Mengkuji, 2018 which stated that the leaves of Bangun- Bangun contain other ingredients such as immunoglobulin antioxidants, anti-hypertension, anti-inflammation, and the content of vitamins C and vitamin B12 found in Bangun- Bangun leaves will help mothers to meet their nutritional needs, because The need for breastfeeding mothers lies in the nutritional content so that in their research the content of torbangun leaves contains vitamins, namely vitamin C, vitamin B1, vitamin B12, beta carotene, niacin, carvacrol, calcium, fatty acid origin, axalic acid and fiber. Apart from that, according to Imaniar, M.

S. 2020) who stated that the leaves of Bangun- Bangun are believed to increase milk production and have high nutritional content, especially iron and carotene. Based on the explanation and opinion of previous research which explains that torbangun leaves are very useful for increasing milk production. If the mother's milk production is smooth, the baby's nutritional adequacy will be maximally fulfilled, besides that, the benefits of exclusive breastfeeding have many benefits for both mother and baby. Therefore, researchers are interested in conducting research related to torbangun leaves, so the research title is the Effectiveness of Giving Torbangun Leaf Extract (*Coleus ambonicus* Lour) on breast milk production in postpartum mothers at PMB Nalom Tangerang in 2022

II. METHODS

This research is an experimental study that assesses the effect of giving the leaves of wake-waking tea on milk production in nursing mothers with a one group pretest – posttest design approach or research design. This research will be conducted at PMB Nalom Tangerang. The reason for choosing this location was based on an initial survey conducted by the researcher that research had never been conducted in the highlands of the city of Tangerang on the effect of consuming the boiled extract of wake-waking leaves on milk production for nursing mothers. The population referred to in this study were all breastfeeding mothers at PMB Nalom Tangerang as many as 30 respondents. Exclusions, namely breastfeeding mothers who cancel being respondents, mothers who have abnormal nipples and breasts, mothers who experience psychological disorders. Sampling is done by taking respondents who happened to be there or available at the place where the research was conducted.

The instrument for recording the data sources studied used a checklist sheet for the consumption of wake-waking leaf tea carried out by the mother and an observation sheet for breast milk production in the form of questions that became the researcher's assessment to determine smooth, moderate, and substandard milk production. As well as baby scales to assess body weight before and after whether there is weight gain or not after giving torbangun leaf extract. Different test to determine milk production in postpartum mothers. Different test using paired sample T test in a non-parametric manner. This test was used to determine whether or not there was an average difference between before and after milk production in the intervention group (giving torbangun leaf extract). In addition to the before and after assessment in the control group (without giving torbangun leaf extract). If there is a difference, which average is higher? In statistical tests using SPSS. Basis for decision making in the independent test sample T-Test.

III. RESEARCH RESULT

A. Univariate Analysis

1. Frequency Distribution of Breast Milk Production to Postpartum Mothers Before and After Administration of Torbangun Leaf Extract (*Coleus Ambonicus* Lour) at PMB Nalom Tangerang in 2022

Milk production	Pre-test		Post-test	
	(f)	(%)	(f)	(%)
Fluent	0	0	21	70
smooth enough	13	43,3	9	30
not that smooth	17	56,7	0	0
Total	30	100	30	100

Based on Table 1, it can be concluded that, before being given Sari Daun Torbangun (*coleus ambonicus* Lour), the majority of breast milk production was substandard, namely 17 people (43.3%) and milk production was quite smooth as many as 13 people (43.3%) then after being given Sari The majority of Torbangun leaves (*Coleus ammbonicus* Lour) produce smooth milk, namely 21 people (70%) and quite smooth milk production, as many as 9 people (30%)

2. Average Assessment of Breast Milk Production in Postpartum Mothers Before and After Administration of Torbangun Leaf Extract (*Coleus Ambonicus* lour) at PMB Nalom Tangerang in 2022

Variabel	n	Milk production		
		M	SD	Min-Max
Pre-test	30	55,00	12,798	40-70
Post-test	30	82,00	10,635	70-100

n = Sampel; M = Mean; SD = Standard Deviation

Based on Table 2 it is known that, of the 30 postpartum mothers before consuming Sari Daun Torbangun (*coleus ambonicus* lour) the average value of breast milk production was 55.00 and in the assessment of breast milk production a minimum value of 40% was obtained, which means that postpartum mothers only answered Yes in total 4 out of 10 questions and a maximum score of 70% who answered Yes amounted to 7 out of 10 questions based on questions about breast milk production. Whereas after consuming Sari Daun Torbangun (*Coleus ambonicus* lour) the average value of breast milk production is 82.00 and in the assessment of breast milk production a minimum value of 70% is obtained, which means that postpartum mothers only answer Yes totaling 7 out of 10 questions and a maximum value of 100%. those who answered Yes were 10 out of 10 questions based on questions about breast milk production based on questions about milk production.

3. Hasil Uji Normalitas Berdasarkan Uji Shapiro - Wilk

	Data Pretest			Data Posttest		
	Statistic	n	p-value	Statistic	n	p-value
kolmogorov	,213	30	,001	,241	30	,000
shapiro-wilk	,803	30	,000	,848	30	,001

Table 3 shows that the normality test before and after consuming Torbangun Leaf Extract (*Coleus ambonicus* lour) on milk production before and after the Kolmogorov-Smirnova test ($p < 0.05$) and Shapiro-Wilk ($p < 0.05$). It is said to be normal or not by looking at the sig number, if sig > 0.05 then it is normal and if sig < 0.05 it can be said to be abnormal. Therefore, based on these results, the data before and after 1 were not normally distributed, the Shapiro – Wilk test was taken because the number of samples was less than 100. Then, the researcher then carried out the Wilcoxon test if the normality test results were found to be abnormally distributed.

B. Results Of Bivariate Analysis

1. The Effectiveness of Providing Torbangun Leaf Extract (*Coleus ambonicus* lour) on Breast Milk Production for Postpartum Mothers at PMB Nalom Tangerang in 2022

Before and after the intervention group	N	Maean Ranks	Sum Of Ranks	Asymp. Sig (2 – Talled)
Negatif Ranks	0	0,00	0,00	
Positif Ranks	29	15,00	435,00	0,000
Ties	1			
Total	30			

In table 4, the results of the Wilcoxon test which consisted of being carried out before and after consuming Torbangun Leaf Extract (*Coleus ammbonicus* lour) on milk production obtained the majority in the positive ranks with a total of 29 people, meaning that the 29 breastfeeding mothers experienced an increase in the level of milk production from the value pre test and post test. The mean rank or average increase is 15.00 while the total sum rank is 435.00. there is an assessment of the similarity before and after as many as 1 person. Then know Asymp. Sig (2 – Talled) has a value of 0.000. This means that there is a difference before and after consuming Torbangun Leaf Extract (*Coleus ambonicus* lour) so that the results of this study can be concluded that there is an Effectiveness of Giving Torbangun Leaf Extract (*Coleus Ambonicus* Lour) on Breast Milk Production in Postpartum Mothers at PMB Nalom Tangerang Year 2022

Discussion

This study shows the results of the analysis of the relationship between knowledge and efforts to prevent complications. The results of this study were proven by the results of the Wilcoxon test which consisted of being carried out before and after consuming Torbangun Leaf Extract (*Coleus ambonicus* lour) to get Asymp. Sig (2 – Tailed) is worth 0.000. This means that there is a difference before and after consuming Torbangun Leaf Extract (*Coleus ambonicus* lour) so that the results of this study can be concluded that there is an Effectiveness of Giving Torbangun Leaf Extract (*Coleus Ambonicus* Lour) on Breast Milk Production in Postpartum Mothers at PMB Nalom Tangerang Year 2022. In the physiological state of breastfeeding, the mother's nutritional needs increase due to the need to produce breast milk. One of the efforts that can be made to increase the rate of secretion and production of breast milk is through the use of traditional herbal medicines. In improving the quality and quantity of breast milk, for example, the leaves of the leaves of Bangunbangun (*Coleus amboinicus*) (Ministry of Health, Republic of Indonesia, 2016). The results of the study are in line with Husna, et al (2021) which stated that the implementation of the socialization activities for giving torbangun leaves has gone well as expected, with the results of socialization for three days that postpartum mothers can breastfeed their babies in an average of 11.6 minutes with the longest breastfeeding time is 17 minutes at a time. As for tor wake leaves or wake up leaves, they have benefits for increasing breast milk according to the opinion of research conducted by Hutajulu and Junaidi (2013).

There is also research by Marlina, et al (2022) which states breast milk before and after giving torbangun leaf drinks. The average milk production of breastfeeding mothers as seen from the baby's weight in the control group was 108.3 grams. The average milk production of breastfeeding mothers as seen from the baby's weight in the experimental group was 356.6 grams. There is an effect on the production of breast milk for breastfeeding mothers after consuming torbangun leaf drink. The torbangun plant has various active ingredients such as carvacrol, forskolin, coleol, phytosterols, barbatucin, and other phytochemicals which are useful for stimulating milk production, restoring balance after childbirth, uterine cleansing agent, antioxidant, stimulating enthusiasm, treating canker sores, fever, asthma, coughs, epilepsy, bloating and as an aphrodisiac. The chemical ingredients are saponins, flavonoids, polyphenols and essential oils, and the compounds used as antipyretics are flavonoids. One of the natural ingredients used to overcome the problem of breast milk production is torbangun leaf drink (*Coleus amboinicus* lour). The essential oil in torbangun leaf drink can increase milk secretion, which leads to an increase in child weight and prevents infant death. In addition, torbangun leaves are easy to find in various areas at prices that are affordable for the middle-low income class. In addition, torbangun leaf drink (*Coleus amboinicus* lour) is very rich in antioxidants, and contains lactogogum which functions to increase the rate of secretion and increase milk production. Extract from torbangun leaves (*Coleus amboinicus* lour) also contains high vitamin A and is an excellent source of polyphenols to help increase milk and prolactin production. According to Mangkuji B 2018 which states that torbangun leaves contain lactagogum which functions to stimulate the production of the mammary glands in nursing mothers.

In general, three main components have been found in torbangun leaves. The first component is a compound that is lactagogum, namely a component that can stimulate the production of the mammary glands in lactating mothers. The second component is nutrition. The third component is pharmacoetics, namely compounds that are buffers, antibacterial, antioxidants, lubricants, plasticizers, dyes and stabilizers. Bangun-Bangun leaves contain other ingredients such as antioxidant immunoglobulin, anti-hypertensive, anti-inflammatory, and contain vitamins C and vitamin B12. contained in the leaves of Bangun- Bangun will help the mother to fulfill her nutritional needs. Apart from that, Imanar, M.S, (2020) also clarified the advantages of torbangun leaves, which stated. Bangun- Bangun leaves contain vitamin C, vitamin B1, vitamin B12, beta carotene, niacin, carvacrol, calcium, fatty acid origin, axalic acid and fiber. The leaves of this structure are believed to increase milk production and have a high nutritional content, especially iron and carotene. Based on the theory and explanation of the results of previous research which stated that tor wake leaves have benefits for postpartum mothers in terms of expediting milk production so that every breastfeeding mother

can be given education and knowledge so that she can provide tor wake leaves with consumption according to the tastes of breastfeeding mothers. However, the researcher gave Tor Bangun leaves by means of the data collection procedure carried out on the 4th day of the puerperium for 14 days by giving 120-150 grams of torbangun leaves per day and then boiled with 3 cups of water until 1½ cups remained. Provision of 1½ cups is given in 3 times a day. To achieve that giving tor leaves has benefits by increasing milk production, it would be nice if the research results were applied to the community by providing counseling or knowledge in the form of health promotion.

This is supported by the research of Husna, et al (2021) which states that the socialization begins with collecting data on the number of postpartum patients who are breastfeeding. Furthermore, education is carried out through lectures and discussions about the benefits of torbangun leaves to increase milk production. A demonstration of the presentation of torbangun leaves was carried out directly along with a leaflet about information on torbangun leaves and the number of doses so that partners could do it at home. During the implementation of the activity, discussions and questions and answers were carried out.

IV. CONCLUSION

The effectiveness of giving Torbangun Leaf Extract (coleus ambonicus lour) on breast milk production for postpartum mothers at PMB Nalom Tangerang in 2022 was obtained:

1. It can be concluded that, before being given Sari Daun Torbangun (Coleus ambonicus lour), the majority of breast milk production was substandard, namely as many as 17 people (43.3%) and milk production was quite smooth as many as 13 people (43.3%) then after being given Sari Daun Torbangun (Coleus ambonicus lour) has the majority of smooth milk production, namely 21 people (70%) and quite smooth milk production, as many as 9 people (30%)

2. It is known that, from 30 postpartum mothers before consuming Sari Daun Torbangun (coleus ambonicus lour) the average value of breast milk production was 55.00 and in the assessment of breast milk production a minimum value of 40% was obtained, which means that postpartum mothers only answered Yes, totaling 4 out of 10 questions and the maximum value of 70% who answered Yes was 7 out of 10 questions based on questions about breast milk production. Whereas after consuming Sari Daun Torbangun (Coleus ambonicus lour) the average value of breast milk production is 82.00 and in the assessment of breast milk production a minimum value of 70% is obtained, which means that postpartum mothers only answer Yes totaling 7 out of 10 questions and a maximum value of 100%. those who answered Yes were 10 out of 10 questions based on questions about breast milk production based on questions about milk production.

3. The results of the Wilcoxon test which consisted of being carried out before and after consuming Torbangun Leaf Extract (Coleus ambonicus lour) on milk production found the majority in the positive ranks with a total of 29 people, meaning that the 29 breastfeeding mothers experienced an increase in the level of milk production from the pre test value and posttest. The mean rank or average increase is 15.00 while the total sum rank is 435.00. there is an assessment of the similarity before and after as many as 1 person. Then know Asymp. Sig (2 – Talled) has a value of 0.000. This means that there is a difference before and after consuming Torbangun Leaf Extract (Coleus ambonicus lour) so that the results of this study can be concluded that there is an Effectiveness of Giving Torbangun Leaf Extract (Coleus Ambonicus Lour) on Breast Milk Production in Postpartum Mothers at PMB Nalom Tangerang Year 2022.

REFERENCES

- [1] Girsang, B. M. (2021). Assistance "Mb TESI" (Making Breast Milk Booster) Torbangun Tea Leaves. *Bareleng Service Journal*, 3(01), 1–5. <https://doi.org/10.33884/jpb.v3i01.2692>
- [2] Husna, N., Panjaitan, R., & Panjaitan, D. B. (2021). Socialization of Giving Torbangun Leaves to Increase Breast Milk Production for Postpartum Mothers at Grandmed Lubuk Pakam Hospital. *Journal of Social Welfare Service (Jpk)*, 1(1), 45–48. <https://doi.org/10.35451/jpk.v1i1.716>
- [3] Iwansyah, A. C., Damanik, M. R. M., Kustiyah, L., & Hanafi, M. (2017). Potential of the Ethyl Acetate Fraction of Torbangun (Coleus amboinicus L.) Leaves in Increasing Milk Production, Body Weight of Rats, and *Rats. Journal of Nutrition and Food*, 12(1), 61–68. <https://doi.org/10.25182/jgp.2017.12.1.61-68>

- [4] Prawita, A. A., & Pasaribu, S. E. (2020). The Effect of Torbangun Leaf Consumption on Breast Milk Production in Post Partum Mothers in Ononamolo Village, South Gunungsitoli District, Gunungsitoli City. Proceedings of the 4th Asahan University Multidisciplinary National Seminar 2020, September, 1214–1221. <https://core.ac.uk/download/pdf/353892186.pdf>
- [5] Marlina, M., Trianingsih, I., & Sari, A. J. (2022). The Effect of Consumption of Torbangun Leaves on Breast Milk Production. *Journal of Health*, 13(1), 72. <https://doi.org/10.26630/jk.v13i1.3094>
- [6] Febry Harissa Surbakti. (2015). Functional Effects of Drinking Torbangun (*Coleus Amboinicus* Lour) and Lemon (*Citrus Medica* Var Lemon) on Adolescent Premenstrual Syndrome. Bogor. Bogor Agricultural Institute.
- [7] Fitry Tafzi, Nuri Andarwulan, Puspo Edi Giriwonom, Fitriya Nur Anisa Dewid. (2017). Efficacy Test of Torbangun Leaf Ethanol Extract (*Plectranthus Amboinicus*) on Human Mammary Gland Epithelial Cells-MCF-12A. Bogor. *Indonesian journal of pharmaceutical sciences* Vol. 15 No. 1 p. 17-24
- [8] Hastuti, P., & Wijayanti, I. T. (2017). Descriptive Analysis of Factors Affecting Expenditure of Breast Milk in Postpartum Mothers in Sumber Village, Sumber District, Rembang Regency. *Journal Ummgl*, 223–232.
- [9] Hadiani, D. N., & Resmana, R. (2018). Progression of Labor Associated with Nutritional Intake. *Scientific Journal of Health Sciences*, 6, 231–238.
- [10] Hellen Febriyanti, Wike Sri Yohanna and Eva Nurida. (2018). The Smoothness of Breast Milk Production in Post Partum Mothers Viewed from Early Breastfeeding Initiation and Baby Suction. *Journal of Health Sciences*, 3(1), 39-46.
- [11] Indah Safitri, et al. (2018). The Relationship between Breast Care and Smooth Breast Milk Production. *Permas Scientific Journal*. Vol, 8. No, 1.
- [12] Dwinanda, A. R., Wijayanti, A. C., & Werdani, K. E. (2017). The Relationship Between Mother's Education And Respondents' Knowledge With Early Marriage. *Andalas Public Health Journal*, 10(1), 76. <https://doi.org/10.24893/jkma.v10i1.166>
- [13] Harahap, Arman ,2018, Macrozoobenthos diversity as bioindicator of water quality in the Bilah river, Rantauprapat, Medan. *J. Phys.:* Conf. Ser. 1116 052026.
- [14] A. Harahap, P. Hrp, N.K.A.R. Dewi, Macrozoobenthos diversity as anbioindicator of the water quality in the River Kualuh Labuhanbatu Utara, *International Journal of Scientific & Technology Research*, 9(4), 2020, pp. 179-183.
- [15] A. Harahap, et, all, Macrozoobenthos diversity as anbioindicator of the water quality in the Sungai Kualuh Labuhanbatu Utara, AACL Bioflux, 2022, Vol 15, Issue 6.
- [16] Harahap, Arman. 2020. Species Composition & Ecology Index Of The Family Gobiidae At The Mangrove Belawan Of *Sicanang Island International Journal of Scientific & Technology Research* Volume 9, Issue 04, April 2020.
- [17] Harahap, A., et all (2021), Monitoring Of Macroinvertebrates Along Streams Of *Bilah River International Journal of Conservation Sciencethis link is disabled*, 12(1), pp. 247–258.
- [18] Mamangkey, J., Suryanto, D., et all (2021). Isolation and enzyme bioprospection of bacteria associated to *Bruguiera cylindrica*, a mangrove plant of North Sumatra, Indonesia, *Biotechnology Reports*, 2021, 30, e00617.
- [19] Elisabeth Putri Lahitani Tampubolon. (2021). Problems of Early Marriage in Indonesia. *Indonesian Journal of Social Science*, 2(5), 738–746. <https://doi.org/10.36418/jiss.v2i5.279>
- [20] Handayani, E. Y. (2014). Factors Associated with Early Marriage in Young Women in North Tambusai District, Rokan Hulu Regency. *Journal of Maternity and Neonatal*, 1(5), 200–206. <https://ejournal.upp.ac.id/index.php/akbd/article/view/1112/812>
- [21] Kristina. (2018). The Relationship between Parental Education and the Incidence of Early Marriage in Kasihan District, Bantul Regency.
- [22] Liesmayani, E. E., Nurrahmaton, N., Juliani, S., Mouliza, N., & Ramini, N. (2022). Determinants of Early Marriage Incidence in Adolescents. *Nursing Care and Health Technology Journal (NCHAT)*, 2(1), 55–62. <https://doi.org/10.56742/nchat.v2i1.37>
- [23] NHS England. (2019). Maternity and Neonatal Services. The NHS Long Term Plan, 10, 28–35.
- [24] Indonesian Ministry of Health. 2018. Indonesia Health Profile 2017. Jakarta: Ministry of Health
- [25] Lovita Bebi(2018). The effect of brewing Bangun- Bangun leaf tea on breast milk production in Selayang Village, working area of the Puskesmas. [pdfiew/14708/14276](https://doi.org/10.24893/jkma.v10i1.166)