

## **EFFECTIVENESS OF BANGUN-BANGUN LEAF (COLEUS AMBOINICUS LOUR) ON BREAST MILK PRODUCTION IN POST PARTUM MOTHERS**

**Mendawaty Pandiangan\*, Lili Farlikhatun**

STIKES Abdi Nusantara, Jl. Swadaya No. 7, Jatibening, Pd. Gede, Bekasi, West Java 17412, Indonesia

[\\*bidan.menda@gmail.com](mailto:*bidan.menda@gmail.com)

### **ABSTRACT**

The target of achieving exclusive breastfeeding is still difficult to achieve optimally due to several things including disruption or non-smooth milk expenditure. Data in Indonesia shows exclusive breastfeeding coverage is only 42%. Various efforts were made, one of which was by exploring the potential of bangun-bangun leaf herbs to increase breast milk production. The purpose of this study was to measure the effectiveness of the bangun-bangun leaf intervention on breast milk production. This research was quasi experimental design. The location used for this research is in the PMB Mendawaty working area in May - June 2023. The study sample was 32 post partum in which there were 16 control groups and 16 intervention groups giving bangun-bangun leaf extract. The bivariate analysis used is the Chi-Square test. The results of the chi-square analysis resulted in an odds ratio value (OR: 2.14; 95% Confident Interval 1.08 – 4.23; p value 0.033) it can be concluded that giving bangun-bangun leaf extract can increase breast milk production up to 2 times compared to not consuming bangun-bangun leaves and is statistically significant.

Keywords: breast milk; bangun-bangun leaf; coleus amboinicus lour

### **INTRODUCTION**

The World Health Organization (WHO) and the United International Children's Emergency Fund (UNICEF) recommend four important things to do to achieve optimal growth and development, namely giving breast milk to babies immediately within 30 minutes after the baby is born, giving only breast milk or breastfeeding exclusively from birth to six months old, provide complementary foods for breast milk (MP-ASI) from six months to 24 months old and continue breastfeeding until the child is 24 months or older. Data in Indonesia shows exclusive breastfeeding coverage is only 42%. This figure is clearly below the WHO target which requires breast milk coverage of up to 50%. This figure indicates that only a few Indonesian children get adequate nutrition from breast milk. Though breast milk plays an important role in the process of physical and mental growth and development of children with long-term impacts.(North, 2022)(Fadllyyah, 2019)

The target of achieving exclusive breastfeeding is still difficult to achieve optimally due to several things, including disruption or non-smooth breastfeeding expenditure. The non-smoothness of breast milk production itself can be caused by several factors, both physical and psychological. Breast milk production is strongly influenced by psychiatric factors because maternal feelings can inhibit or increase oxytocin production, if the mother is depressed, sad, lack of confidence and various forms of emotional tension can reduce milk production (Hardiani, 2017) The proportion of reasons children aged 0-23 months have not been breastfed in Indonesia are because breast milk does not come out (65.7%), children cannot breastfeed (6.6%), hassle (2.2%), separation care (8.4%), medical reasons (5.7%), children separated from their mothers (5.4%), mothers die (1.5%), and others (4.5%). Meanwhile, according to the province, the highest proportion of reasons children aged 0-23 months have not been breastfed because breast milk does not come out occupied by Lampung Province, which is 55.4% (Riskesdas, 2018).

Bleaf plant or Latin *Coleus amboinicus* have a million benefits, especially for new mothers. This type of plant has characteristics where the stem is round and slightly hairy, rarely flowers and is very easy to develop. (Doloksaribu, 2021). Bangun-bangun plant (*Coleus Amboinus Lour*) is one type of plant consumed by new mothers in the North Sumatra area, especially by the Batak tribe. Bangun-bangun leaves are believed to increase the production of breast milk (ASI) and have high nutritional content, consumption of bangun-bangun leaves has a real effect on increasing levels of several minerals such as iron, potassium, zinc, and magnesium in breast milk and can result in a noticeable increase in baby weight.(Rambe, 2021)

Researchers conducted a preliminary study by distributing questionnaires to 5 pregnant women. The questionnaire contains simple questions related to whether the mother consumed herbs or herbal extracts, filled out the questionnaire on average milk production and whether the mother experienced problems or lack of breast milk. The result of the questionnaire was that 4 out of 5 mothers experienced breast milk deficiency. However, 3 of them were never given intervention or did not take supplements or herbs. Even the 5 pregnant women believe that during the puerperium should avoid fishy foods and supplements. From this background, researchers are interested in examining the effectiveness of bangun-bangun leaves in increasing breast milk production in postpartum mothers in Midwife Independent Practice. The purpose of this study was to measure the effectiveness of the bangun-bangun leaf intervention on breast milk production.

## METHOD

This research is a type of intervention research with *an experimental quasy design*. The location used for this research is in the PMB Mendawaty working area in June 2023. The study sample was 32 post partum in which there were 16 control groups and 16 intervention groups. The bivariate analysis used in this study is to determine whether there is a relationship between two variables (independent and dependent variables), namely the Chi-Square test Postpartum mothers on the first day who are willing to consume bangun-bangun leaves extract and do not experience comorbidities such as: SEZ, drug consumption, smoking, consuming alcohol. Bangun-bangun leaf extract is a preparation derived from bangun-bangun leaf plants with a dose @ 500 mg obtained by concentrating and drying liquid extract until it reaches the desired concentration according to a qualified way. Breast milk expenditure after childbirth where in this study it was seen that breast milk expenditure before the intervention was carried out and breast milk expenditure on the fourth day after the intervention was categorized with a cut off point of 500 ml (Zulharmitta, 2018)(Fatmawati, 2019).

## RESULT AND DISCUSSION

Table 1.  
Characteristics of Respondents

Characteristic	f	%
Age of Respondents		
< 20 Years	18	56.3
20 – 35 Years	12	37.5
> 35 Years	2	6.3
Parity		
Primipara	14	43.8
Multiparous	18	56.3

Characteristic	f	%
Work		
Housewives	21	65.6
Trader/ self-employed	7	21.9
Civil servants	4	12.5

Based on the results of research that has been conducted, the majority of pregnant women are depicted at a young age, namely < 20 years old with 18 people or equivalent to 56.3%, second or multiparous childbirth 56.3%, and working as housewives as many as 21 people or 65.6%.

Table 2.  
 Cross-Tabulation of Breast Milk Levels in the Bangun-bangun Intervention Group and Control Group

Breast milk content	Group		f	%
	Contro l	Percentag e		
< 500 ml	9	28.1	12	37.5
> 500 ml	7	21.9	20	62.5

Table 2 based on the cross-tabulation table, it can be seen that in the bangun-bangun leaf group, the majority of respondents around 13 respondents (40.6%) had breast milk levels of more than 500 ml, while in the control group only 7 respondents had breast milk levels of > 500 ml.

Table 3.  
 Chi-Square Analysis of the Effect of Bangun-bangun on Increased Breast Milk Levels

Risk Estimate	Value	95% Confident Interval		P Value
		Lower	Upper	
Odds Ratio for Breast Milk Levels	2.14	1.12	27.52	0.033

Table 3 based on the results of chi-square analysis, the odds ratio value (OR: 2.14; 95% Confident Interval 1.08 – 4.23; p value 0.033) can be concluded that giving wake-up leaf extract can increase breast milk production up to 2 times compared to not consuming wake-up leaves and is statistically significant. This result is also in line with research that states that giving bangun-bangun leaf extract can increase breast milk production, so it is highly recommended to be consumed during the puerperium.(Maulana, 2023)

Bangun-bangun leaves have a high content of nutrients such as iron and carotene. Consuming these leaves can increase iron, potassium, zinc, and magnesium in breast milk and can result in a noticeable increase in baby weight. Mothers who consume bangun-bangun leaves say that they feel fresh and not tired, where the content of bangun-bangun leaves contains vit C, vit B1, B12, beta carotene, niacin, carvakrol, calcium, fatty acids, oxalic acid, and fiber. While mentioning that the main chemical compounds in bangun-bangun leaves are *Karavkrol, Thymol, Humulene, Undecanal, Terpinene, Cymene, Caryophyllene Oxide, Terpeneol* and *Selinene* (Insani, 2021). In addition, the content of bangun-bangun leaves has been included as a component of herbal medicine for pregnant women which according to research has oxytotic properties, which are substances that have the property of stimulating strong contractions in breast milk secretion (Husna, 2021)

Torbangun leaves also have the potential to be developed in terms of their benefits as lactagogum and the administration of torbangun methanol extract to epithelial cells of human mammary glands increases the expression of glucocorticoid receptor genes that function in the lactation process. In relation to the function of lactogogum, the phytochemical test of bangun-bangun leaves has reported lactagogum indicators shown by the presence of saponins, flavonoids and piphenols. This lactagogum substance itself can increase the hormones prolactin and oxytocin so that it can increase breast milk production.(Ristiyana, 2023; Harefa, 2021)(Ariescha, 2019) The use of lactagogue is one way that can be done to increase the rate of secretion and production of breast milk. Various studies show that there are a number of food ingredients in Indonesia that have a function as lactagogum. The utilization and development of food crops that have a function as lactagogum can be one strategy to overcome the failure of exclusive breastfeeding due to low secretion and milk production. On the other hand, breastfeeding mothers are one of the targets of supplementary feeding because they require more nutrients than mothers who do not breastfeed. (Oktaviya, 2020)(Sariaty, 2021)(Amir, 2021)

The results of phytochemical screening of bangun-bangun leaves showed that the antioxidant activity (IC50) of strong/medium bangun-bangun leaf extract 63.53 µg/ml was found in 60oC and 90 min of bangun-bangun leaves, bangun-bangun leaf extract with positive temperature and time variants containing flavonoid compounds and negative steroid alkaloid compounds, in saponin compounds there were positive and negative results in bangun-bangun leaf extract with a drying temperature of 60oC for 150 minutes and 80oC for 120 minutes. (Siregar, 2022) This result is certainly inseparable from the many confounding factors such as the consumption of other foods, and also the psychological condition of breastfeeding mothers which can jointly affect breast milk production.

## **CONCLUSION**

Giving torbangun leaf extract or consumption of bangun-bangun leaves is effective in increasing breast milk production.

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