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The Effect of Moringa Leaf Extract and Katuk Leaf Extract on Exclusive Breastfeeding with Increased Breast Milk Production in Postpartum Mothers

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ABSTRACT

Low breast milk production is one of the primary challenges in achieving exclusive breastfeeding among postpartum mothers. This study aims to examine the effect of moringa leaf extract and katuk leaf extract on increasing breast milk production in postpartum mothers on the second day after delivery at Panimbang Public Health Center in 2025. The research employed a Study Case Literature Review (SCLR) method with a qualitative case study approach. Two postpartum mothers with low milk production were given interventions for seven days: one received moringa leaf extract and the other received katuk leaf extract, each at a dose of two capsules per day. Breast milk volume was measured on the 3rd, 5th, and 7th day using a measuring cup. The results showed that breast milk production increased from 50 cc to 120 cc in the respondents who consumed moringa extract (a difference of 70 cc), and to 140 cc in the respondents who consumed katuk extract (a difference of 90 cc). These findings indicate that both extracts effectively increase breast milk production, with katuk leaf extract producing greater results. This study recommends the use of moringa and katuk leaves as natural alternatives to support the success of exclusive breastfeeding.

Keywords: exclusive breastfeeding, moringa leaf, katuk leaf, postpartum mother, breast milk production

INTRODUCTION

Breast milk is the best and most important natural source of nutrition for babies. It contains various essential substances that support a baby's growth, development, and immune system health. Breast milk production generally begins within the first day after delivery. Providing breast milk immediately after birth is crucial for a baby's survival.(Sudargo, 2019).

According to the WHO (World Health Organization), 35.5% of infants (under 6 months) worldwide receive exclusive breastfeeding. The WHO's target for exclusive breastfeeding by 2025 is 50% of infants under six months of age.(Sinaga, 2020)Indonesia's exclusive breastfeeding coverage in 2021 was 69.7% and in 2022 it was 67.96%.(WHO, 2023). Exclusive breastfeeding coverage in Banten Province is 55.9%.(Ministry of Health, 2021). Exclusive breastfeeding coverage in Pandeglang Regency in 2019 reached 51.2% of the target of

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85%.(Ministry of Health, 2021). Based on data from the Panimbang Health Center, the coverage of babies who received exclusive breastfeeding in 2023 reached 80%, meaning it is still not 100% and the achievement of exclusive breastfeeding is still low and there are still many mothers who do not provide exclusive breastfeeding, because there are still babies who have been given other than breast milk before 6 months.(Panimbang, 2023).

The impact if a baby is not given exclusive breastfeeding is that the baby has a risk of death due to diarrhea that is 3.94 times greater than babies who receive exclusive breastfeeding (Ministry of Health, 2010). According to the World Alliance for Breastfeeding Action (WABA), the impact of not giving babies exclusive breastfeeding is that it can make babies susceptible to diseases such as allergies, asthma, obesity, diabetes, digestive disorders, dental disorders and malocclusion, iron deficiency anemia, hypertension, heart disease, sudden death syndrome, and low IQ. The advantage of giving breast milk early (less than 1 hour) is that it can stimulate the hormone prolactin in the blood (<45 minutes after the baby is born). Giving breast milk to babies before the first hour can increase breast milk production because the breast milk is completely emptied. Breastfeeding problems can also occur due to special circumstances, for example, mothers often complain of insufficient breast milk production or breast milk deficiency syndrome.(Fara, 2020).

Factors that can cause low breast milk production include a lack of balanced nutrition, mental health problems such as stress or depression that can lead to anxiety, trauma after using hormonal contraception, and improper breast care.(Pattypeilohy, 2019)Low breast milk production can also be caused by a lack of oxytocin hormone stimulation in the first day after delivery.(Monika, 2020)The impact of low breast milk production is that the mother does not provide exclusive breastfeeding to her baby.(Adrian, 2021).

Management in an effort to increase breast milk production so that it is not low can be done by providing counseling on how to breastfeed properly and providing information on good nutrition for mothers who are breastfeeding, which is expected to result in good changes in breastfeeding their babies by providing information on breast care, counseling during the pregnancy process and after giving birth.(Cangol, 2019). Ways to increase breast milk production include moringa leaf extract and katuk leaf extract. According to research by Dewi Kurniati (2018), lactagogum is a substance that can increase breast milk production. Katuk leaf extract can be recommended for mothers who have problems breastfeeding. When choosing a safe katuk leaf extract, you must consider the side effects of the drug and have it approved by

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the Food and Drug Monitoring Agency (BPOM). Katuk leaf extract has been shown to have an effect on breast milk production.(Rosdianah & S, 2021).

Based on a preliminary study conducted in October of 20 postpartum mothers who gave birth at the Panimbang Community Health Center, 10 of the 20 (50%) experienced low breast milk production. Based on this description, the researchers were interested in conducting a study entitled"The Effect of Moringa Leaf Extract and Katuk Leaf Extract on Exclusive Breastfeeding with Increased Breast Milk Production in Postpartum Mothers on the 2nd Day at the Panimbang Community Health Center in 2025".

METHOD

This study used the Study Case Literature Review (SCLR) method, which is a combination of case studies and literature reviews to analyze the phenomenon of low breast milk production in postpartum mothers based on empirical data and previous scientific theories. This method is qualitative with a case study approach carried out intensively and in-depth on two subjects experiencing breast milk production problems. The study was conducted at the Panimbang Community Health Center, Pandeglang Regency in February 2025, using a consecutive sampling technique, namely selecting subjects based on inclusion criteria until the specified number is reached. The study subjects were two postpartum mothers on the second day who experienced less than normal breast milk volume (<150 mL/day) and had fussy babies.

Both respondents were given different interventions for seven days: moringa leaf extract capsules and katuk leaf extract capsules, two capsules each per day at a dose of 200 mg per capsule. Breast milk production was evaluated three times: on days 3, 5, and 7 using a measuring cup, one hour after morning breastfeeding. The instrument used was an observation sheet for increasing breast milk production. Before the intervention began, the researcher explained the research procedure to the respondents and obtained their consent through an informed consent form. Monitoring of intervention consumption was carried out both in person and via telephone communication to ensure subject compliance with the research protocol.

RESULTS

Table 1. Increased Breast Milk Production with Moringa Leaf Extract Intervention

Intervention	Respondent 1		
	1st Evaluation	**2nd Evaluation**	**3rd Evaluation**

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Moringa leaf extract	**(day 3)**	**(day 5)**	**(day 7)**
Breast milk production	50 cc	80 cc	120 cc
Ascension	-	30 cc	40 cc

In respondents who were given the moringa leaf extract intervention, an increase in breast milk production can be seen in the 2nd evaluation of 30 cc and the 3rd evaluation of 40 cc, so that the total increase in breast milk production during the moringa leaf extract intervention was 70 cc.

Table 2. Increased Breast Milk Production with Katuk Leaf Extract Intervention

Intervention Katuk leaf extract	Respondent 2		
	1st Evaluation (day 3)	**2nd Evaluation (day 5)**	**3rd Evaluation (day 7)**
Breast milk production	50 cc	90 cc	140 cc
Ascension	-	40 cc	50 cc

In respondents who were given the intervention of katuk leaf extract, an increase in breast milk production can be seen in the 2nd evaluation of 40 cc and the 3rd evaluation of 50 cc so that the total increase in breast milk production during the katuk leaf extract intervention was 90 cc.

Table 3. Comparison of differences before and after the intervention of Moringa leaf extract and Katuk leaf extract

	Respondent 1 Given Intervention Moringa leaf extract	Respondent 2 No Intervention Given Katuk leaf extract

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	Before intervention is given	**After being given interventio n**	**Difference**	**Before interve ntion is given**	**After being given intervent ion**	**Difference**
Breast milk production	50 cc	120 cc	70 cc	50 cc	140 cc	90 cc

There was a difference in the comparison before and after the administration of moringa leaf extract and katuk leaf extract. Respondent 1 was given 50 cc of moringa leaf extract before the intervention and 120 cc after the intervention, resulting in a difference of 70 cc. Respondent 2 was given a katuk leaf extract intervention before being given 50 cc of intervention and after being given 140 cc of katuk leaf extract intervention, so the difference was 90 cc.

DISCUSSION

Breast Milk Production Before and After Giving Moringa Leaf Extract

The research was conducted for 7 days with 3 visits where previously the volume of breast milk was 50 cc, on the 5th day it was 80 cc and on the 7th day it was 120 cc, so that the total increase in breast milk production during the intervention of moringa leaf extract was 70 cc.

According to WHO (2023), breast milk requirements for newborns increase gradually with age. On the first day of life, babies generally require about 5 to 7 mL per feeding, with a daily total of 30 to 60 mL. On the second day, this amount increases to about 10 to 15 mL per feeding, with a daily requirement of about 100 to 150 mL. By the third day, babies typically consume between 15 and 30 mL per feeding, bringing their daily requirement to around 200 to 300 mL. On the fourth and fifth days, the volume per feeding increases to 45 to 60 mL, with a total daily intake of 400 to 600 mL. On the sixth and seventh days, the requirement per feeding is about 60 to 90 mL, with a daily total of about 600 to 700 mL. After one month of age, breast milk requirements generally stabilize at around 750 to 900 mL per day. (WHO, 2003). Low breast milk production means that the breast milk that comes out of the mother's breasts is little or does not match the volume of breast milk that should be produced.(Putri, 2021).According toSudargo T (2018)Breast milk production is influenced by the mother's nutritional intake.

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Therefore, breastfeeding mothers are advised to consume a balanced and varied diet. Furthermore, according toSari (2018)From a psychological perspective, breastfeeding mothers need to maintain peace of mind and think positively to meet their babies' nutritional needs through breast milk. The emotional bond between mother and baby also plays a role in increasing oxytocin levels, which in turn increases milk production.Moringa leaves (Moringa oleifera) are a traditional medicine that has long been used. The moringa plant is a local food that has the potential to increase breast milk production in breastfeeding mothers because it contains phytosterol compounds that function to increase and facilitate milk production (a lactagogum effect).(Safarringga & Putri, 2021).

StudySafarringga & Putri (2021)which states that there is an effect of moringa leaf extract on increasing breast milk production. The study found that the average breast milk production before consuming moringa leaf extract was 68.33 ml, and after consuming it, it increased to 105 ml. This finding aligns with the findings of Hasbiah Wardani (2022) which stated that there was a relationship between the administration of moringa leaf extract and increased breast milk production, with a p-value of 0.001.(Wardani, 2022).

The researcher's assumption is that respondents given Moringa leaf extract experienced increased breast milk production due to the nutritional content in Moringa leaves that can stimulate lactation. Moringa leaf extract (Moringa oleifera extract) is indeed good for mothers who want to increase breast milk volume. Besides being easily obtained, Moringa leaf extract also contains various important nutrients and contains compounds that act as galactagogues, namely substances that can increase breast milk production, such as flavonoids and phytosterols. In Moringa leaf extract there is a protein that plays a role in the synthesis of hormones that support lactation, iron helps increase maternal hemoglobin levels, which can contribute to more optimal breast milk production, vitamins and minerals in Moringa leaves support the health of breastfeeding mothers and facilitate breast milk production, antioxidants and anti-inflammatories can help maintain the health of the mother's body, reduce oxidative stress, and support the hormonal balance needed for breast milk production. Based on these factors, Moringa leaf extract is believed to increase breast milk production in breastfeeding mothers.

Breast Milk Production Before and After Giving Katuk Leaf Extract

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The study was conducted for 7 days with 3 visits where previously the volume of breast milk was 50 cc, on the 5th day it was 90 cc and on the 7th day it was 140 cc, so that the total increase in breast milk production during the intervention of Moringa leaf extract was 90 cc.

According to Pattypeilohy's theory (2019), low breast milk production is caused by insufficient nutritional intake, feeling anxious, trauma after hormonal contraception and not caring for the breasts.(Pattypeilohy, 2019). Extract dKatuk leaves (Sauropus androgynus extract) are green vegetables, including relatives of cherries, berries, and tangerines. Katuk leaves also contain a lot of chlorophyll (green leaf substance) containing many nutrients that are good for body health, such as the active compound papaverine, a secondary metabolite that can increase the expression of prolactin and oxytocin genes. Papaverine has a relaxing effect on smooth muscles and widens blood vessels, which supports the smooth circulation of prolactin and oxytocin hormones in the bloodstream. This compound acts directly on smooth muscles, blood vessels, and heart muscle by affecting beta-adrenergic receptors through c-AMP. Similar to prostaglandins, the eicosanoid group of compounds, papaverine and prostaglandins also affect the heart muscle, blood vessels, and smooth muscle. Both function as vasoconstrictors or vasodilators depending on the location of prostaglandin synthesis, and can cause dilation in large blood vessels such as arteries and reduce peripheral pressure (Handayani et al., 2021). Katuk leaf extract is particularly beneficial for breastfeeding women, as it can increase prolactin and oxytocin, which influence breast milk production. Furthermore, katuk leaf extract's benefits for breastfeeding mothers are also linked to its galactagogue content. Galactagogues are compounds that can stimulate increased breast milk production (Suyanti & Anggraeni, 2020).

According to research by Rosdianah Irmawati (2021), the results of the independent sample t-test showed a p-value of 0.009 <α (0.05), so H0 was rejected and Ha was accepted. This indicates that katuk leaf extract affects the smooth flow of breast milk in mothers with babies aged 0-6 months (Rosdianah & S, 2021). Similar to the results of research by Handayani et al. (2021), katuk leaf extract can increase breast milk production because it contains active compounds, namely papaverine and phytosterols and contains high nutrients (Handayani et al., 2021).

The researcher's assumption is that respondent 2 who was given katuk leaf extract had an increase in breast milk production because katuk leaf extract (Sauropus androgynus) can increase breast milk production with its phytochemical and nutritional content that plays a role in stimulating lactation. The content of katuk leaf extract contains compounds such as sterols,

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alkaloids, and flavonoids that act as galactagogues, namely substances that can stimulate and increase breast milk production. Compounds in katuk leaves can also increase levels of the hormones prolactin and oxytocin, which play an important role in the production and release of breast milk. The high protein content supports the production of hormones needed in lactation. In addition, the iron and calcium content can help improve the health of breastfeeding mothers and ensure optimal breast milk production. Vitamins and minerals help improve the mother's immune system and the quality of breast milk, antioxidants and anti-inflammatory effects help maintain the health of breastfeeding mothers, reduce oxidative stress, and facilitate breast milk production. With the presence of these nutritional content and active compounds, katuk leaf extract is believed to increase breast milk production in breastfeeding mothers.

Comparison of Midwifery Care Results of Respondent 1 and Respondent 2

There was a difference in the comparison before and after the intervention of moringa leaf extract and katuk leaf extract. Respondent 1 was givenMoringa leaf extract intervention before being given 50 cc of intervention and after being given 120 cc of Moringa leaf extract intervention, so the difference is 70 cc. Respondent 2 was given katuk leaf extract intervention before being given 50 cc of intervention and after being given 140 cc of katuk leaf extract intervention, so the difference is 90 cc.

One of the basic needs of postpartum mothers is to provide breast milk. Postpartum mothers need to understand that breastfeeding should begin immediately after birth, at least within the first 30 minutes. Mothers should also understand proper breastfeeding techniques, the importance of exclusive breastfeeding, breastfeeding as often as possible on demand, and gradually weaning, which can increase the frequency of feedings and decrease the frequency of breastfeeding.(Azizah, 2021).

According to the researchers' assumptions, there was a difference in breast milk production after being given moringa leaf extract and katuk leaf extract. However, the respondents who received katuk leaf extract experienced a greater increase in breast milk production.

CONCLUSION

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Based on the results of research conducted at the Panimbang Community Health Center in 2025, it can be concluded that both Moringa leaf extract and Katuk leaf extract are effective in increasing breast milk production in postpartum mothers on day 2. The increase in breast milk volume was seen significantly after seven days of intervention, where breast milk production in respondents who consumed Moringa leaf extract increased from 50 cc to 120 cc (a difference of 70 cc), while in respondents who consumed Katuk leaf extract increased from 50 cc to 140 cc (a difference of 90 cc). This shows that both interventions are able to increase breast milk production, with Katuk leaf extract showing a higher increase than Moringa leaf extract.

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