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The Benefits of Tamarillo Fruit for Increasing Hemoglobin Levels in Pregnant Women in the First Trimester as Local Wisdom in 2025

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ABSTRACT

Anemia in pregnant women is a health problem that can increase the risk of complications during pregnancy and childbirth, as well as impaired fetal development. One non-pharmacological method to increase hemoglobin (Hb) levels is to consume natural ingredients rich in iron and vitamin C, such as tamarillo fruit.

Objective: This study aims to determine the benefits of consuming tamarillo fruit on increasing hemoglobin levels in pregnant women in the second trimester at the Hanna Kasih Clinic in Medan in 2025.

Methods: This study used a **pre-experimental design** with **a one-group pretest-posttest approach** . The study sample consisted of 15 pregnant women in their second trimester who met the inclusion criteria. Respondents were given 200 ml of tamarillo juice per day for 30 days. Hb levels were measured before and after the intervention using a digital hemoglobinometer. Data were analyzed using **a paired t-test** to determine the difference in mean Hb levels before and after treatment.

Results: The results of the Community Activity Implementation showed an increase in Hb levels from 10.2 g/dl to 11-11.8 g/dl after administering tamarillo juice. Statistical tests showed a *p -value* <0.05, which means there was a significant difference between Hb levels before and after the intervention.

Conclusion: Consuming tamarillo juice significantly increases hemoglobin levels in pregnant women in the second trimester. The iron, vitamin C, and antioxidants in tamarillo play a role in aiding iron absorption and hemoglobin formation. Tamarillo fruit can be a natural alternative to prevent anemia in pregnant women.

Keywords: tamarillo, hemoglobin, pregnant women, second trimester, anemia

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INTRODUCTION

Tamarillo fruit contains vitamin C and iron, which are beneficial for pregnant women. Vitamin C in tamarillo helps increase the body's absorption of non-heme iron, which is crucial for increasing hemoglobin (Hb) levels in pregnant women who often experience anemia, especially in the second trimester. Regularly consuming or juicing tamarillo can increase Hb levels in pregnant women, thus helping prevent anemia and pregnancy complications that pose risks to both the mother and fetus.

The benefits of tamarillo fruit are highly relevant for application in maternal health programs, especially in areas with a high prevalence of anemia. The use of tamarillo juice as an alternative or supplement to natural iron consumption is expected to increase pregnant women's adherence to maintaining their health, reduce the side effects of iron tablets, and support meeting iron needs in a more natural and accessible way.

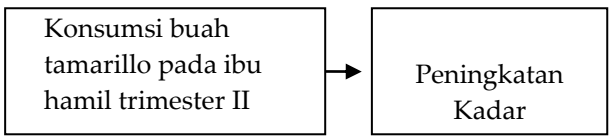
Locally, tamarillo fruit is often used as a traditional medicine to maintain health during pregnancy because it is readily available and considered natural and safe for both the mother and fetus. This community service project demonstrates that using tamarillo fruit as a natural intervention can be an effective alternative for treating anemia in pregnant women in the second trimester by prioritizing local values and traditional knowledge already present within the community.

METHOD

This study was quasi-experimental with *pre-test* and *post-test approach* with a control group, which aimed to analyze the effect of tamarillo consumption on hemoglobin levels in second trimester pregnant women in the working area of Hanna Kasih Clinic, Medan City, North Sumatra in 2025. The reason for choosing thise location is the high incidence of anemia in pregnant women in the area and the absence of research related to nutritional interventions using tamarillo. The study was conducted from May to September 2025. The population in this study was all second trimester pregnant women who visited the Hanna Kasih Clinic and Posyandu Ibu Hamil. Purposive sampling was used *purposive sampling,* with the number of samples divided into two groups the intervention group and the control group. The intervention group received 200 gof tamarillo puree/day for four4 weeks, while the control group did not receive any intervention.

The conceptual framework of the research is explained in the form of a diagram, where the independent (free) variables are the consumption of tamarillo and the dependent variable is hemoglobin levels. The control variables included age, pregnancy, iron-rich food intake, and maternal Hb status. The conceptual framework is as follows

Independent Variable n Dependent Variable



2.1. Measurement Aspects

a. Hemoglobin levels (pre-test and post-test) using the HB Check tool

b. Anthropometric data (body weight and LILA)

c. Consume foods that are sources of iron and vitamin C, namely Tamarillo fruit juice 200 grm per day using a glass bottle.

2.3. Data Analysis > Statistical Tests

a. Hemoglobin level difference test

- *Paired t-test* (to compare pre-post within groups).
- *Independent t-test* (to compare the intervention and control groups).

Significance: Statistical significance was set at P <0.05.

RESULTS AND DISCUSSION

A quasi-experimental study conducted on 15 pregnant women at the Hanna Kasih Clinic found that pregnant women with anemia at <32 weeks of gestation showed significant benefits from regular tamarillo juice consumption. The group receiving tamarillo juice daily and drinking it regularly showed an increase in hemoglobin levels of 0.51 g/dL in the first week and 0.95 g/dL in the second week.

In the third week, Hb levels increased again by 0.6 g/dL. This was compared to the control group taking only iron supplements, which experienced an increase of 0.2 g/dL in the first week and 0.5 g/dL in the second week. These findings suggest that regular consumption of tamarillo juice as a natural supplement to increase hemoglobin levels can accelerate the recovery of anemia in pregnant women, while reducing the side effects often associated with consuming synthetic iron supplements.

Table 3.1

Data Tabulation Giving Juice Eggplant Dutch during 4 Sunday

Name Mother Pregnant	Amount HB based on inspection HB check				
	Hb beginning (gr%/dl)	Sunday I	Sunday II	Sunday III	Sunday IV
Iis	10.2	10.6	10.8	11.0	11.5
Yanti	10.8	11.0	11.00	11.0	11.5
Pomegranate	9.6	9.8	9.8	10.6	11.0
Noryanti	10.4	10.8	11.9	12.0	14.5
Desy	10.6	10.6	10.8	11.0	11.5
Yenni	10.2	11.0	11.00	11.0	11.5
Alda	10.8	9.8	9.8	10.6	11.0
Rifatul	11.00	10.8	10.9	11.00	11.02
Siti Aisha	9.6	10.9	11.0	11.5	11.9
Tika	9.8	10.6	10.8	11.0	11.5
Goddess	9.6	11.0	11.00	11.0	11.5
Miranda	9.7	9.8	9.8	10.6	11.0

Febry	**10.2**	10.8	10.9	11.00	11.02
Lily	**11.0**	10.8	10.9	11.00	11.02
Derna	**10.6**	10.8	10.9	11.00	11.02

CONCLUSION

Based on the results of research conducted in 2025 regarding the benefits of tamarillo fruit in increasing hemoglobin levels in pregnant women in the second trimester as part of local wisdom, the research results prove that tamarillo

1. Increased Hb levels through iron absorption and stimulation of erythropoiesis.
2. Safe consumption by pregnant women with minimal side effects.
3. Has the potential to be a sustainable, locally based anemia intervention strategy.

1. SUGGESTION

a. Providing education on the importance of iron and the benefits of tamarillo fruit for pregnant women.
b. The consumption of tamarillo fruit should be encouraged as a natural alternative to increase hemoglobin levels.
c. Innovations in tamarillo processing should be developed to make it more attractive and easier for pregnant women to consume.
d. Involving health workers and integrated health post (posyandu) cadres in a nutritional support program for pregnant women.

Conduct training and outreach regarding healthy eating patterns based on...

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