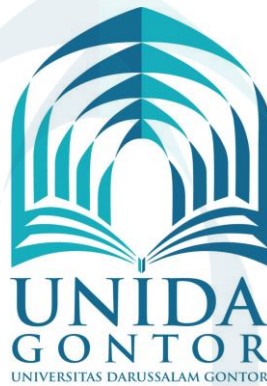


THESIS
***COOKIES* WITH MORINGA AND SOYBEAN FLOUR SUBSTITUTION AS**
AN ALTERNATIVE PMT FOR ANAEMIA PREGNANT WOMEN
(Analysis of Protein, Fat, Iron Content, and Organoleptic Test)



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2025

VALIDITY SHEET

It is hereby stated that the thesis with the title :

**COOKIES SUBSTITUTED WITH MORINGA LEAF FLOUR AND SOYBEANS AS
AN ALTERNATIVE SUPPLEMENTARY FOOD FOR PREGNANT WOMEN WITH
ANEMIA**

(Analysis of protein, Fat, Iron Content, and Organoleptic Test)

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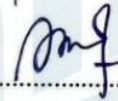
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ABSTRACT

COOKIES WITH MORINGA AND SOYBEAN FLOUR SUBSTITUTION AS AN ALTERNATIVE PMT FOR ANAEMIA PREGNANT WOMEN

(Analysis of Protein, Fat, Iron Content, and Organoleptic Test)

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Pregnancy was prone to health problems, one of which was anaemia. The prevalence of anaemia. Among pregnant women in Indonesia has increased to 49.5%. Supplementary feeding (PMT) made from local food is one of the strategies to deal with nutritional problems in pregnant women. *Moringa* leaves (*Moringa oleifera*) are rich in iron and protein, which are good for increasing hemoglobin levels and fetal development. Soybeans (*Glycine max*) have benefits because they contain high protein and fat to stimulate the production of blood cells. This study analyzes differences in protein, fat, iron, and organoleptic levels in *cookies* substituted with moringa leaf flour and soybeans. This study uses a type of *true experimental* research with a Completely Randomized Design (CRD) design using four formulas of moringa and soybean flour (F1= 0g:0g, F2= 47,5:2,5g, F3= 45g:5g and F4= 42,5g:7,5g) with three repetitions of analysis. The method used to test protein content with *Soxhlet*, fat with *Kjeldhal*, iron with UV-Vis spectrophotometry, and organoleptic test with 30 semi-trained panellists. The analysis of nutrient content using One Way ANOVA followed by Duncan's Post Hoc test showed significant differences in protein content ($p=0.000$), fat content ($p=0.003$), and iron content ($p=0.000$). The organoleptic test was analyzed using the Kruskal-Wallis test and the Mann-Whitney test. The results of the organoleptic analysis showed significant differences in taste ($p=0.17$), aroma ($p=0.49$), and texture ($p=0.08$), while no significant differences were found. The conclusion is that there are differences in the analysis of protein, fat, iron, and organoleptic levels in *cookies* substituted with moringa flour and soybean flour.

Keywords: Anaemia, *Cookies*, Moringa Leaf Flour, Pregnant Women, Soybean Flour.

ABSTRAK

COOKIES SUBSTITUSI TEPUNG DAUN KELOR DAN KACANG KEDELAI SEBAGAI ALTERNATIF PMT IBU HAMIL ANAEMIA

(Analisis Kadar Protein, Lemak, Zat Besi dan Uji *Organoleptik*)

Yunita Kumala

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Masa kehamilan rentan mengalami masalah kesehatan salah satunya anaemia. Angka prevalensi anaemia pada ibu hamil di Indonesia meningkat menjadi 49,5%. Pemberian Makanan Tambahan (PMT) berbahan pangan lokal menjadi salah satu strategi penanganan masalah gizi pada ibu hamil. Daun kelor (*Moringa oleifera*) kaya akan zat besi dan protein yang baik untuk meningkatkan kadar hemaglobin dan perkembangan janin. Kacang kedelai (*Glycine max*) memiliki manfaat karena mengandung protein dan lemak yang tinggi untuk menstimulasi produksi sel-sel darah. Penelitian ini bertujuan untuk menganalisis perbedaan kadar protein, lemak, zat besi dan organoleptik pada *cookies* substitusi tepung daun kelor dan kacang kedelai. Penelitian ini menggunakan jenis penelitian *true eksperimental* dengan desain Rancangan Acak Lengkap (RAL) menggunakan 4 formula dari tepung daun kelor dan kacang kedelai (F1=0%:0%, F2=2,5%:47,4% F3=95%:5%, dan F4=92,5%:7,5%) dengan 3 kali pengulangan analisis. Metode yang dilakukan pada uji kadar protein dengan *soxhlet*, lemak dengan *kjeldhal*, zat besi dengan spektrofotometri UV-Vis dan uji organoleptik dengan subyek panelis semi terlatih sebanyak 30 orang. Analisis data kadar zat gizi menggunakan *One Way ANOVA* dilanjutkan dengan uji *Post Hoc Duncan*. Uji organoleptik menggunakan *Kruskal-Wallis* dilanjutkan dengan uji *Mann Whitney*. Hasil uji analisis zat gizi menunjukkan bahwa ada perbedaan nyata terhadap kadar protein ($p=0,000$), kadar lemak ($p=0,003$), dan zat besi ($p=0,000$). Hasil organoleptik memiliki perbedaan yang signifikan antara perlakuan rasa ($p=0,17$), aroma ($p=0,49$) dan tekstur ($p=0,08$) sedangkan tidak memiliki perbedaan. Kesimpulan terdapat perbedaan pada analisis kadar protein, lemak, zat besi dan organoleptik pada *cookies* substitusi tepung daun kelor dan tepung kacang kedelai.

Kata Kunci: Anaemia, *Cookies*, Ibu Hamil, Tepung Daun Kelor, Tepung Kacang Kedelai.

FOREWORD

Bismillahirrahmanirrahim

Assalamu'alaikum Warahmatullahi Wabarakatuh

All praise to Allah SWT, who has given His grace and guidance. So that the author can complete the thesis title "*Cookies* Substituted with Moringa Leaf Flour and Soy Beans as an Alternative PMT for Anaemia Pregnant Women (Analysis of Protein, Fat, Iron Content and Organoleptic Test)". With the completion of this thesis, the author expresses his deepest gratitude to:

1. Al-Ustadz Prof.Dr.K.H. Hamid Fahmi Zarkasyi.M.A.Ed., M.Phil, as the Rector of Universitas Darussalam Gontor
2. Al-Ustadz Dr.Abdul Hafidz Zaid, M.A, Al-Ustadz Setiawan bin Lahuri, M.A, Al-Ustadz Dr.Khoirul Umam, M.Ec, and Al-Ustadz Dr. Royyan Ramdhani Djayusman, M.A as Vice Rectors of Universitas Darussalam Gontor.
3. Al-Ustadz apt. Amal Fadholah, S.Si., M.Si, as the Dean of the Faculty of Health Sciences, has provided motivation and direction until the completion of this thesis.
4. Al-Ustadzah Lulu' Luthfiya, S.Gz., M.P.H, as the Head of Nutrition Science Departement, has provided the best motivation for the author to complete this education smoothly Al-Ustadzah Nur Amala, S.Gz.,M.Gz as the first supervisor who patiently guided, directed, and motivated the author could complete this thesis.
5. Al-Ustadzah Qothrunnadaa Fajr Rooiqoh, S.Tr. Gz.,M.Gz is the second supervisor who has provided assistance, direction, and motivation until the end of writing this thesis.
6. Al-Ustadzah Ladyamayu Pinasti, S.Gz.,M.Gz, as the examiner who has provided input and consideration to improve the quality of this thesis.
7. My family, especially my beloved mother, father, brother, and sister, have strengthened, provided prayers, motivation, support, and trust, and always entertained when bored so that the author can complete the thesis with all my heart and extraordinary gratitude.
8. Friends of the Department off Nutrition Science, and all friends in arms, thank you for the support, enthusiasm, and experience given to the author.

9. All parties who have provided experiences from the beginning of studying in this college to writing this thesis that the author cannot mention altogether.

The author realizes that this writing is still far from perfect. Therefore the author opens himself to all suggestions and criticisms so that this thesis can benefit us all.

Ponorogo, 28 February 2025



The Author
Yunita Kumala



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STATEMENT OF RESEARCH AUTHENTICITY

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Hereby,

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I hereby declare that this thesis is my original work and is not based on copies or the research results of others. This work has never been submitted to any university for a degree. In addition, this work has not been previously published, except for references that have been included in this manuscript and listed in the bibliography. I understand that if in the future it is proven that this thesis contains elements of plagiarism, I am willing to accept academic sanctions by applicable regulations. I make this statement truthfully and without pressure from any party.

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