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Testing Of Acceptance And Nutritional Value Of Katuk Leaf Flour Flour Chips And White Sweet Flour As Additional Food For Breastfeeding Mothers

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ABSTRACT

Leaf katuk and sweet potato white potential are sources of substance nutrition because they contain neither macro nor micro substance nutrition. One _ form utilizes leaf katuk and sweet potato white; with the process, it becomes flour and is used to manufacture chips. Study this experiment with two treatments: chips with addition flour leaf Katuk 20%, sweet potato flour 10% white, flour leaf katuk 15%, and sweet potato flour white 15%. Organoleptic test chips were conducted by 30 panelists conducted on UCB students with Analysis content calcium, protein, fat in chips flour leaf katuk and sweet potato flour white carried out at the Laboratory of the Research and Standardization Agency Medan Industry. Test results laboratory show that content nutrition calcium, protein, and fat produced in treatment A1 (flour leaf Katuk 20% and Sweet Potato Flour white 10%) each with 487.0 mg /kg, 5.22% protein, 28.8% crude fat. While in treatment A2 (flour leaf katuk 15% and sweet potato flour white 15%) each of 338.9 mg/kg, 5.34% protein, 31.8% crude fat. Test to organoleptic data used with Wilcoxon Signed Rank method. Based on organoleptic test on taste, aroma, color, and texture, most favorite chips panelists are chips with addition flour leaf katuk 15% and sweet potato flour white 15% (A2) while on the addition of flour leaf Katuk 20% and sweet potato flour white 10% (A1) only liked panelists from aspect color and texture. Recommended to the community to make chips flour leaf katuk and sweet potato flour white as food Intermezzo because contain Calcium, protein, fat needed body specifically mother breastfeeding and valuable for health. Need Diversification is also carried out food besides leaf katuk and sweet potato white as rich food _ substance nutrition.

1. INTRODUCTION

Exclusive breastfeeding for six months is one of the global strategies to improve infant growth, development, health, and survival. Although exclusive breastfeeding benefits exist for babies, mothers, families, and communities, the coverage is still low in many countries, including Indonesia.The success of breastfeeding is determined by the food consumed by the mother who is breastfeeding. For the dose of calories alone, breastfeeding mothers must meet a higher level of 415 kcal than pregnant women, which is 2950 kcal. Several studies show that approximately 76% of mothers with good nutritional status can breastfeed their babies for six months. To fulfill these nutrients, at least the consumption of carbohydrates is about 50-60% of the total food consumed, 20-25% fat, 10-15% protein, and the rest is vitamins, minerals, and water.

Katuk leaf is a widely known vegetable consumed in the community. In addition to being relatively cheap and easy to obtain, these leaves are perfect for health because they contain high enough nutrients. Each 100 g of katuk leaves contains Vitamin A 10370 SI, Vitamin C 239 mg, Vitamin B1 0.10 mg, Calcium 204 mg, Phosphorus 83 mg, Protein 4.8 g, Fat 1.0 g, and Iron 2.7 mg.

Katuk leaves have a function as a source of nutrition, as well as an antioxidant. The content of katuk leaves includes phytochemical compounds such as saponins, flavonoids, tannins, and isoflavonoids that resemble estrogen and can slow down bone mass loss (osteomalacia). In contrast, saponins are efficacious as anti-cancer and anti-microbial and improve the immune system in the body. In addition, katuk leaves contain a type of substance that functions as a laktagogum.

Lactagogum itself is a compound that will increase levels of milk production. Katuk leaves contain steroids and polyphenols that can increase prolactin levels. The administration of katuk leaves increased levels of adrenal steroid hormones. High levels of prolactin will increase, accelerate and facilitate breast milk production. Katuk leaves also contain alkaloids, sterols, flavonoids, and tannins. Indonesia is a country that has uniqueness and biological wealth, one of which is rich in plants that can be used as ingredients for traditional or herbal medicines. Not all conventional medications are harmful to the health of pregnant and lactating women. Many studies have related to this, for example, plant materials that are efficacious in increasing breast milk production for nursing mothers. As written in the Minister of Health of the Republic of Indonesia Number 6 of 2016 concerning the Formulary of Original Indonesian Herbal Medicines to increase maternal milk production, including katuk leaves, fenugreek seeds, and to ban gun leaves.

One tropical plant with this potential is the katuk plant (Sauropus androgynus L. Merr). So far, katuk leaves in humans are known as plants that can increase breast milk production (ASI) or are laktagogums (Sa'roni, 2004). In addition, katuk leaves also contain chemicals, including tannins (catechins), resins, terpenoids, flavonoids, alkaloids, phenols, organic acids, essential oils, saponins, sterols, proteins, carbohydrates, vitamins, and minerals.

In Indonesia, katuk leaves are generally used to launch breast milk. This leaf has been produced as a phytopharmaceutical preparation which is efficacious in establishing breast milk. In addition, breastfeeding mothers' consumption of katuk vegetables can prolong the breastfeeding time of male babies only to increase the frequency and duration of breastfeeding. Katuk leaf is the only local plant that has high levels of chlorophyll. It contains large amounts of antioxidants which are very useful for preventing free radicals and premature aging. This leaf is also efficacious for tackling anemia, increasing the absorption efficiency of the digestive tract, preventing fatigue, and inhibiting chronic vascular disease.

A survey in Indonesia reported that 38% of mothers stopped breastfeeding due to a lack of milk production. Difficulty in milk production is caused by various factors such as maternal psychology and nutrition. Several types of plants have been traditionally used by nursing mothers to increase milk production. One of these plants is Sauropus androgynous L. Merr, known in Indonesia as katuk leaf. Katuk leaf extract can increase the mother's milk production up to 50.47% without reducing the quality of breast milk.Chips are snacks or snacks in the form of thin slices that are very popular among the public because they are crunchy, savory, not too filling, and available in various flavors such as salty, spicy, and sweet. Chips are efficient because they are dry, more durable, and easy to serve anytime.Making chips is simple because you don't have special skills to make them. The materials used are common among people, such as; tapioca flour, salt, margarine, eggs, and water. In addition, chips are snacks that some Indonesian people use as a favorite food. After all, in addition to the relatively low price, chips are also easy to obtain because many Indonesian people make it a home-based business. Katuk leaves are processed into chips to improve the taste and attract nursing mothers to consume katuk leaves by being served in the form of chips.

2. METHOD

The type of research used is an experiment using an utterly randomized research design. This study consisted of 2 (two) factors, namely, wheat flour, katuk leaf flour, and white sweet potato flour, with 2 (two) treatments using a comparison of the composition of katuk leaf flour, white sweet potato flour, and wheat flour, namely; 20%: 10%: 70%, 15%: 15%: 70% with symbols A1 and A2. AI treatment is a combination of 20% katuk leaf flour + 10% white sweet potato flour + 70% wheat flour Treatment A2 is a combination of 15% katuk leaf flour + 15% white sweet potato flour + 70 wheat flour

3. RESULTS AND DISCUSSION

1. Characteristics

Table 1. Characteristics

Criteria	70% : 20% : 10%	70% : 15% : 15%
Color	Brownish green	Yellowish green
Texture	Crispy	Crispy
Scent	Distinctive scent leaf domineering katuk _	Distinctive scent leaf katuk no too dominates. There is also a unique sweet potato aroma
Flavor	Typical leaves katuk	Typical leaves katuk

Based on table 1 above
A1: Chips with 70% wheat flour, 20% katuk leaf flour, 10% white sweet potato flour
A2: Chips with 70% wheat flour, 15% katuk leaf flour, 15% white sweet potato flour

2. Analysis

Table 2. Organoleptic results of the color evaluation of Katuk Leaf Flour Chips and White Sweet Potato Flour Chips

Criteria color	A1 Respondent	A1 Amount score	A1 %	A2 Respondent	A2 Amount score	A2 %
Like	13	39	65.0	9	27	45.0
Not enough	7	14	35.0	10	20	50.0
Not	0	0	0.0	1	1	5.0
Amount	20	53	100	20	48	100

Based on table 2, it can be seen that the highest total chip score on A1 is 53 (100%). So A1 belongs to the criteria. Here shows that many respondents like the A1 chips. While A2 has a total score of 48 (100%), A2 is also included in the liking criteria. Here, the color chips A1 and A2 are equally favored by the panelists, but A1 has a higher score.

Table 3. Results of Organoleptic Test Analysis of the Aroma of Katuk Leaf Flour Chips and White Sweet Potato Flour

Aroma Characteristics	A1 Respondent	A1 Score	A1 %	A2 Respondent	A2 Total Score	A2 %
Like	0	0	0.0	14	42	70.0

Not enough	13	26	65.0	5	10	25.0
Not	7	7	35.0	1	1	5.0
Amount	20	33	100	20	53	100

Table 4 Results of Organoleptic Tests on the Texture of Katuk Leaf Flour and White Sweet Potato Chips

Taste Characteristics	**A1**			**A2**		
	Respondent	**Total Score**	**%**	**Respondent**	**Total Score**	**%**
Like	2	6	10.0	16	48	80.0
Don't Like	14	28	70.0	4	8	20.0
Not Like	4	4	20.0	0	0	0.0
Total	20	38	100	56	56	100

Table 4 above shows that the highest total score is chipped on A2, 55 (100%), while A2 is included in the liking criteria. This shows that the A2 chips are often preferred by respondents based on texture indicators. While A1 has a total score of 53 (100%), A1 is also included in the liking criteria. This shows that the panelists favor the texture of chips A1 and A2, but A2 has a higher score.

Table 5 Analysis of the Nutritional Content of Katuk Leaf Flour Chips and White Sweet Potato Flour

Parameter	**A1**	**A2**	**Method**
Calcium	487.0	338.9	AAS
Protein	5.22	5.34	SNI 01-2891-1992
Fat	28.8	31.8	SNI 01-2891-1992

Based on table 6 above, it can be seen that there are differences in the nutritional content of the two treatments. It can be seen that the chips with the addition of 20% katuk leaf flour and 10% white sweet potato flour have a calcium content of 487.0 mg/kg, 5.22% protein, and 28.8% fat.

The chips made from katuk leaf flour and white sweet potato flour in a ratio of 20%: 10% (A1) are brownish green in color, have a characteristic taste of katuk leaves that dominate, taste typical of katuk leaves, and a crunchy texture. The character of the chips with the addition of katuk leaf flour and white sweet potato flour in a ratio of 15%: 15% (A2) has a yellowish green color, the distinctive aroma of katuk leaves does not dominate, there is also a unique sweet potato aroma, a distinct taste of katuk leaves, and a crunchy texture.

Based on the analysis of nutrients in katuk leaf flour chips and white sweet potato flour conducted at the Gambut Health Center, it was found that there were different Calcium, protein, and fat content in treatment A1 and treatment A2. Chips with the addition of 20% katuk leaf flour and 10% white sweet potato flour (A1) provided 487.0 mg/kg of Calcium per 100 gr chips, while the chips with 15% katuk leaf flour and 15% white sweet potato flour (A2) were added.) provides 338.9 mg/kg of Calcium per 100 g of chips using the AAS method. The protein content of the chips with the addition of 20% katuk leaf flour and 10% white sweet potato flour (A1) gave 56 5.22% protein per 100 g of chips, while the chips with the addition of 15% katuk leaf flour and 15% white sweet potato flour (A2) provides 5.34% protein per 100 g of chips using the SNI 01-2891-1992 method. While the fat content in chips with the addition of 20% katuk leaf flour and 10% white sweet potato flour (A1) was 28.8% per 100 g of chips,

while the chips with the addition of 15% katuk leaf flour and 15% white sweet potato flour (A2) provides fat of 31.8% per 100 g of chips using the SNI method 01-2891-199

Respondent's Acceptance of the Taste of Katuk Leaf Flour and White Sweet Potato Chips Organoleptic testing of the taste of chips by the panelists showed that the most preferred chips of katuk leaf flour and white sweet potato flour were chips with the addition of 15% katuk leaf flour and 15 white sweet potato flour. % (A2) with a score of 84 (93.3%), while for chips treated with A1 with a ratio of 20% katuk leaf flour and 10% white sweet potato flour, respondents with a score of 55 (61%). This means that the percentage of respondents' acceptance of the taste of chips decreases with the addition of katuk leaf flour. It gives a bitter taste to the chips. Taste is vital in determining whether or not a food product is acceptable. Although all parameters are expected but not followed by a good taste, the food will not be accepted by consumers. Preference involves a lot of taste buds (1) Even if the color, aroma, taste, and texture are good, if the taste is not good, then the food will not be accepted. Therefore, the taste is another important factor in the respondent's decision to accept or reject food.

According to (2), adding taste combines the sense of taste and the sense of smell but involves more of the five senses of taste, namely the tongue. The combination of taste and aroma gives a unique taste characteristic to each food; when we consume the food we usually eat, we already have certain expectations about the food. If the food does not meet our expectations, we are disappointed and may not want to eat it again. . There are many different types and shapes of chips sold in the market. This type of food depends on the type of raw material, while the variation in formation depends on the creativity of the maker (3)

4. Conclusion

Based on the results of the research analysis above, the following conclusions can be drawn:

1. Acceptance test results showed katuk leaf flour chips and 6 white sweet potato flour in treatment A2 with a ratio of 70%: 15% 7: 15% preferred color, texture, aroma, and taste by respondents. 8 In treatment A1 with a ratio of 70%: 20%: 10%, 9 Respondents preferred color and texture only. 10
2. Based on the results of the nutritional analysis of katuk leaf flour chips and 11 white sweet potato flour in the treatment 70%: 20%: 10%, there were 12 487.0 mg/kg or 4.8 grams of Calcium, 5.22% protein, 28 crude fat. 8%. While 13 in the 70% : 15% : 15% treatment contained 338.9 mg/kg 14 or 3.39 grams of calcium, 5.34% protein, and 31.8% crude fat. 15
3. Calcium, protein, and fat in these two chips have met 16 additional food requirements for breastfeeding mothers, according to SNI 01-2891-17 1992.

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