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Formulation and Analysis of Millennia Nutrition Content (Anti-Anemia Jelly Drink) to Increase Hemoglobin Levels in Young Girls

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Abstract

Anemia is a nutritional problem in young women that needs to be prevented and addressed because it will impact the First 1000 Days of Life (HPK) period. Creating functional food products in the form of contemporary drinks that are nutritious and liked by teenagers is very important as an alternative to preventing anemia. Delays in early treatment of anemia have an impact on women experiencing pregnancy, which can cause bleeding complications during childbirth, giving birth to babies with low body weight and stunting. This condition must be treated as early as possible, because anemia in young women can indirectly affect the quality of human resources in the future. The purpose of this study was to find out how the Formulation and Analysis of the Nutritional Content of Millenia (Anti-Anemia Jelly Drink) to Increase Hemoglobin Levels in Young Girls. This type of research is experimental research, using a completely randomized study design consisting of three factors, in this case the researchers used three treatments, namely red guava juice with the addition of moringa leaf jelly and beet jelly using the symbols A1, A2 and A3. In treatment A1, red guava fruit juice, honey, moringa leaf jelly, and beetroot jelly were added at the respective doses of 200 ml, 20 gr, 10 gr, 20 gr. This drink is expected to be a drink that is rich in iron and other nutrients that can increase hemoglobin levels in the blood and is liked by teenagers because it is made like a contemporary drink that is currently a trend.

Keywords: Aenmia, formulation, beets, hemoglobin.

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1. Introduction

Anemia is a condition where there is a decrease in the quantity of red blood cells in circulation or the amount of hemoglobin is below normal limits (Adams et al., 2022; Sunuwar et al., 2020). Anemia is a nutritional problem in young women that needs to be prevented and addressed because it will impact the First 1000 Days of Life (HPK) period (Adebiyi et al., 2021; Puspita et al., 2022; Syukur & Harismayanti, 2020). The World Health Organization (WHO) targets a reduction in the incidence of anemia by 50% in 2025, while anemia itself is still a significant nutritional problem in developing countries, one of which is Indonesia, the prevalence of anemia in developed countries is 9% and 43% in developing countries (Ghafuri et al., 2020).

Based on Riskesdas data in 2013, the prevalence of anemia in young women was 23% and it had increased in 2018 by 32%, meaning that 3-4 out of 10 adolescents suffer from anemia. The government's program to administer Blood Supplement Tablets (TTD) to young women aims to reduce the prevalence of anemia which is still high in young women (Zhu et al., 2020; Zofkie et al., 2022). This activity is in the form of giving blood-supplemented tablets for 4 months to young women which must be consumed according to the rules so that young women do not experience iron nutritional anemia. However, some adolescents are still reluctant to consume the iron tablets given because they feel the effects of nausea, constipation, black stools and an unpleasant taste make this program less effective (Shahverdiyeva & Aliyev, 2018).

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Provision of drugs and supplements for anemia therapy often causes side effects, which makes people look for natural alternative therapies in the treatment of anemia. One of these alternatives is to consume functional food. Functional food is a type of food that has been scientifically proven to provide health benefits, both for direct consumption and after passing certain stages (Petrou et al., 2015; Suminaga et al., 2022). Functional food consists of food and drink that has a shape and taste favored by the community, especially teenagers. Intervention in the form of drinks is generally preferred and accepted by the community compared to solid food, moreover the drinks served are contemporary drinks that are liked by teenagers, for example, jelly drinks (Kurkina et al., 2021; Setyaningrum et al., 2017). Therefore, an innovation is needed to make functional drinks that can prevent anemia, such as drinks made from moringa leaves, beets and red guava.

Moringa plant is a plant that has many benefits and is called a super food. Moringa (Moringa oleifera L.) belongs to the Moringaceae family. Moringa leaves contain 90 natural nutrients such as vitamins and minerals, 46 antioxidants which function as antidotes to free radicals, 36 anti-inflammatory compounds and 18 amino acids that the body needs (Milla et al., 2021; Sukmawati, 2019). Moringa leaves in dry form have a high nutritional content, including 15 times the potassium of bananas, 10 times the vitamin A of carrots, 25 times the iron of spinach, 17 times the calcium in milk, 9 times the protein in yogurt (Sari et al., 2023; Shokery et al., 2017).

Another food that is rich in iron is beets. Beets work by stimulating the circulatory system and helping to build red blood cells due to their folic acid and B12 content. Beets are of key importance in cellular metabolism and are required for the normal development of red blood cells (Deshpande et al., 2021; Pretini et al., 2019). Foods rich in iron and folic acid also require vitamin C for optimal absorption. One of them is red guava. Red guava fruit is a local fruit that is rich in antioxidants, especially vitamin C (50-300 mg/100 gr), fiber, minerals, and polyphenolic compounds (Nissa et al., 2019; Sukmawati E et al., 2018). Consumption of fruit in the form of juice is an alternative in meeting the needs of antioxidants which are very practical and easy to consume (Andarina & Djauhari, 2017; Nissa et al., 2019; Sukmawati, 2017).

Researchers created a new formulation, namely the functional drink "Millenia" (Anti-Anemia Jelly Drink). This drink is made from Moringa leaves, beets which will be processed into jelly and will be put into red guava juice. Moringa leaves and beets scientifically have a high content of iron and folic acid and red guava is a fruit that contains high vitamin C which can help the absorption of iron. This drink is expected to be a drink that is rich in iron and other nutrients that can increase hemoglobin levels in the blood and is liked by teenagers because it is made like a contemporary drink that is currently a trend.

2. Literature Review

2.1. Adolescence

Adolescence is a phase of life for individuals where psychological exploration occurs to determine self-identity. During the transition from childhood to adolescence, individuals begin to develop abstract characteristics and different self-concepts (Chiu et al., 2021; Rosales-Ortiz et al., 2019). According to WHO, youth is the period between the ages of 10 and 24 years. Meanwhile, according to The Health Resources and Services Administration Guidelines of the United States, adolescence is in the age range of 11-21 years which is further divided into three stages, namely early adolescence (11-14 years), middle adolescence (15-17 years), and adolescence. late (18-21 years). Then this definition is combined into one in the terminology of young people (young people) which includes those aged 10-24 years. According to the Indonesian Ministry of Health, the age limit for adolescents is between 10 and 19 years and not yet married (Chiu et al., 2021; Todd B. Kashdan, 2019). The definition of youth is divided into three points of view, namely:

a) Physically, that is, adolescents are marked by the characteristics contained in changes in physical appearance and psychological function, one of which is the sexual gland.

b) Chronologically, namely adolescents with an age range of 11-21 years to 20-21 years.

c) Psychologically, that is, adolescents during their individual years experience changes in cognitive, emotional, social, and moral aspects spanning from childhood to adulthood

2.2. Hemogblobin

Hemoglobin is one of the main components found in red blood cells which has the function of transporting oxygen from the lungs throughout the body. Hemoglobin has an affinity or affinity for oxygen which is then reformed into oxyhemoglobin in blood cells (Pretini et al., 2019). The factors that affect hemoglobin levels are:

a) Age

As you get older, your hemoglobin level will decrease.

b) Gender

Gender is a factor that greatly influences hemoglobin levels. In general, men have higher hemoglobin levels than women. This also affects male and female hormones, where women experience menstrual periods every month.

c) Nutrition

If the diet consumed contains a lot of iron or Fe, it will make the blood cells produced increase and increase. So that hemoglobin in the blood will increase, and vice versa.

d) Lifestyle

The pattern or unhealthy lifestyle will be a factor in decreasing hemoglobin levels. One of the activities that can reduce hemoglobin levels is staying up late.

Impact of Hemoglobin Deficiency in Young Women, namely:

a) Dizzy and dizzy eyes

b) Eyelids, lips, tongue, skin and pale palms

c) Easily tired, lethargic and tired

d) Reduces productivity (Sandra, 2017).

According to (Ministry of Health, 2018) ways to prevent and treat anemia and increase hemoglobin in young girls are:

a) Increase intake of food sources of iron

b) Fortification of foodstuffs with iron

c) Iron supplementation

2.3. Functional Food Product

Functional food products are food products that have physiological effects on the body, reduce the risk of a disease, and can even be used to cure several diseases. Food ingredients that are often consumed every day can also help raise Hb levels in the blood. The intended food sources include red meat, processed cow's milk, beef/chicken liver, seafood, nuts, green vegetables and fruits. Among all fruits, beet root is one of the fruits with high levels of folic acid, which is 108 mg than other fruits. The tubers of these beets contain iron and can be used to increase iron levels in the blood in cases of anemia, beets are very suitable to be combined with types of fruit that contain high levels of vitamin C.

Red guava is a fruit that is high in vitamin C, high vitamin C content in a food is believed to help optimize iron absorption. Red guava fruit is a local fruit that is rich in antioxidants, especially vitamin C (50-300 mg/100 g), fiber, minerals, and polyphenolic compounds. Consumption of red guava fruit in the form of juice is an alternative in meeting the needs of antioxidants. Many forms of functional food have been developed so that foodstuffs that have high nutrients can be utilized properly. Several types of functional food processing can be processed into cookies, jelly drinks, juices and other nutritious snacks, such as a study conducted by (Zuhraini, et al., 2021) discussing the effect of

giving beetroot juice to increase hemoglobin levels in female adolescents, from the results In this study, it was found that giving beetroot juice could increase the hemoglobin of female adolescents.

Other research related to Moringa leaves and beets is research conducted by (Masfufah, 2020) on the effectiveness of Moringa leaves and beets to increase hemoglobin levels in pregnant women. The intervention was carried out by administering Moringa leaf extract combined with honey at a dose of 2x2 500 mg per day, and beetroot intervention made in the form of 100 gr juice and combined with lemon at a dose of 5 g per day, the results showed that both had a role to increase hemoglobin. However, the comparison between the two states that beets are more effective than Moringa leaves in increasing hemoglobin.

3. Methods

This type of research is experimental research, using a completely randomized study design consisting of three factors, in this case the researchers used three treatments, namely red guava juice with the addition of moringa leaf jelly and beet jelly using the symbols A1, A2 and A3. In treatment A1, red guava fruit juice, honey, moringa leaf jelly, and beetroot jelly were added at the respective doses of 200 ml, 20 gr, 10 gr, 20 gr. In treatment A2, red guava fruit juice, honey, moringa leaf jelly, and beetroot jelly were added at the respective doses of 200 ml, 20 gr, 15 gr, 15 gr. And in treatment A3, red guava fruit juice, honey, moringa leaf jelly, and beetroot jelly were added at the respective doses of 200 ml, 20 gr, 20 gr, 10 gr. The location of the research on the manufacture of Millennia functional drinks was carried out at the Nutrition Laboratory of USU's Faculty of Public Health, Jalan Universitas No. 21 Campus USU Medan. The organoleptic test (acceptability test) was carried out at SMA Negeri 1 Binjai, Langkat Regency, Jalan Yos Sudarso, Sukamakmur Village, Binjai District, Langkat Regency. To test the iron content of Millenia, it was carried out at the Medan Industrial Research and Standardization Center, Jalan Sisingamangaraja No. 24 Medan. As well as to test the content of antioxidants and vitamin C Millennia was carried out at the USU Faculty of Pharmacy Phytochemical Laboratory, Jalan Tri Dharma Campus USU Medan. The time for this research to be carried out starts from September 2022 until it is planned to be until February 2023. The sample in the organoleptic test study was 30 students of SMA Negeri 1 Binjai, Langkat, Class X and XI. While the object of this research is Millenia Functional Drink (Anti-Anemia Jelly Drink) with a mixture of red guava juice, Moringa leaf jelly, and beet jelly. The data collection technique in this study was to use untrained panelists. The panelists in this study were young women who were taken by 30 students from SMA Negeri 1 Binjai, Langkat Regency, Classes X and XI. When asked to study the acceptability test, the panelists met the requirements as panelists, namely they were not sick, did not consume coffee, tea and milk, and did not take drugs. Because if in these conditions the sensitivity of the panelists' sense of taste will be reduced. The assessment of this test was carried out three times at different times, where on the first day testing functional drinks A1, on the second day testing functional drinks A2 and A3 which were carried out starting at 10.00 WIB and in one day it was estimated that 30 young women could be tested. When filling out the hedonic form, the researcher determines and writes down the amount of drink and the dose given to the panelists. The data that has been collected is then processed manually and then analyzed using descriptive percentages, then to find out whether there are differences in each different treatment. Then used fingerprint analysis. Descriptive analysis of percentages is used to review and rework deeper into the panelists' reactions to a material being tested. To find out the level of preference of the panelists, a qualitative descriptive analysis of percentages was carried out, namely the qualitative obtained from the panelists must be analyzed first to be used as quantitative data. The percentage interval and preference criteria above were made to find out how the panelists accepted Millenia (Anti Anemia Jelly Drink) with a mixture of red guava juice, beet jelly and Moringa leaf jelly.

4. Results and Discussion

The formulation of the anti-anemia jelly drink (Millenia) begins with making flour from beets and fresh Moringa leaves which will then be processed into jelly. The production of beetroot powder and moringa leaf powder was carried out in the nutrition laboratory at the Faculty of Public Health, University of North Sumatra.

4.1. The process of making beetroot flour and jelly

In the manufacture of beetroot flour, it begins with washing and peeling the beets, then slicing them thinly, then placing them on a tray and in the oven at 80oC for 8 hours. From 130 grams of beets, 39 grams of beetroot powder is produced.The results of the beets that have been baked are then put into the flouring tool. The time needed to grind the beets is 5 minutes. Then the flour is sifted through a 100 mesh sieve. The results of the flouring process can be seen in the figure 1.

Figure 1. Bit Flour

The beetroot powder is then processed into jelly using 1 pack of plain nutrijell, 1 pack of plain swalow agar, 3 spoons of beetroot powder. From these results obtained beet jelly as much as 500 gr.

Figure 2. Bit Jelly

4.1The Process of Making Moringa Leaf Flour and Jelly

In the manufacture of Moringa leaf powder, it begins with washing the Moringa leaves and separating them from the stalks, after which they are placed on a tray and heated in the oven at 80oC for 6 hours. From 100 grams of Moringa leaves produce 10 grams of Moringa leaf powder.

Figure 3. Moringa Leaves That Have Been Baked

The results of the roasted Moringa leaves are then put into the flouring tool. The time needed to grind the Moringa leaves is 3 minutes. Then the flour is sifted through a 100 mesh sieve. The results of the flouring process can be seen in the figure 4.

Figure 4. Moringa Leaf Flour

Moringa leaf powder is then processed into jelly using 1 pack of plain nutrijell, 1 pack of plain swalow agar, 2 tablespoons of moringa leaf powder. From these results obtained moringa leaf jelly as much as 500 gr.

Figure 5. Moringa Leaf Jelly

4.2. Formulation of Anti Anemia Jelly Drink

Based on the three Millenia drink formulas, namely a mixture of 200 ml of red guava juice and 20 grams of honey with the addition of beetroot jelly and moringa leaf jelly which differed in each treatment (A1 = 20 gr beet jelly, 10 gr moringa jelly; A2 = 15 gr jelly beets, 15 gr moringa jelly; and A3 = 10 gr beet jelly, 20 gr moringa jelly), it can be seen in each of the figure 6.

Figure 6. Millennia with treatment A1

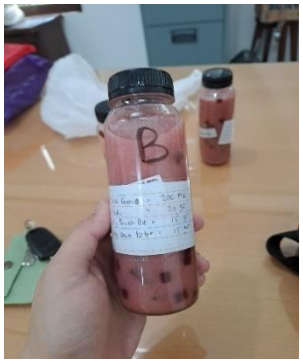

Figure 7. Millennia with A2 treatment

Figure 8. Millennia with A3 treatment

Based on the three treatments of Millennia with the addition of moringa leaf jelly and beet jelly, a different Millennia was produced in each treatment. The differences from the three Millennia are generally shown in the Table 1.

Table 1. Characteristics of Anti-Anemia Jelly Drinks (Millenia) with the Addition of Moringa Leaf Jelly and Beet Jelly

Characteristics	Jelly Drinks		
	A1	A2	A3
Flavor	Sweet	Sweet	Sweet
Aroma	The aroma of Moringa leaf jelly is dominant	The aroma of guava juice is dominant	Dominant fruit jelly aroma
Color	Pink	Pink	Pink
Texture	Rough	Rough	Rough

with:

A1 : 200 ml guava juice, 20 gr honey, 20 gr moringa leaf jelly, and 10 gr beet jelly
A2 : 200 ml of guava juice, 20 grams of honey, 15 grams of moringa leaf jelly, and 15 grams of beetroot jelly
A3 : 200 ml of guava juice, 20 grams of honey, 10 grams of moringa leaf jelly, and 20 grams of beetroot jelly

4.3. Results of Millennia Nutritional Content Analysis

This study examined the nutritional content of iron, vitamin C and antioxidants in drinks with a mixture of guava juice, moringa leaf jelly and beet jelly (Millenia). Nutritional content testing was carried out in 2 different laboratories. The iron content was carried out at the Medan Industrial Research and Standardization Center. As well as

to test the content of antioxidants and vitamin C Millennia was carried out at the USU Faculty of Pharmacy Phytochemical Laboratory. The results of millennial nutritional content can be seen in Table 2.

Table 2. Millennia Nutrition Content

Nutritional Substances	A1	A2	A3
Iron (mg/100 gr)	0.403	2.47	1.62
Vitamin C (mg EVIT.C/100 gr)	92.41	91.81	86.02
Antioksidan Ic 50 (ppm)	261.18	262.94	289.13

4.3.1. Results of Analysis of Iron Content in Millennia

Based on the results of laboratory tests that have been carried out on drinks with a mixture of guava juice, moringa leaf jelly and beet jelly (Millenia) it was found that the highest iron content was found in formula A2 with an iron content of 2.47 mg/100 gr millenia. The need for iron in young women aged 13-18 years is 15 mg/day (PMK No. 28 of 2019). Even though they have not been able to meet their daily needs for iron, millennials have a good contribution to consume as an additional intake of iron from plant foods. Because the biggest source of iron is in animal foods, such as beef, liver, eggs and others. Society must balance the intake of foods rich in iron by combining sources of iron from plant foods and animal foods.

4.3.2. Results of Analysis of Vitamin C Content in Millennia

Based on the results of laboratory tests that have been carried out on drinks with a mixture of guava juice, moringa leaf jelly and beet jelly (Millenia) it was found that the highest Vitamin C content was found in formula A1 with a Vitamin C content of 92.41(mg EVIT.C/100 gr).

The need for iron in young women aged 13-18 years is 65-75 mg/day (PMK No. 28 of 2019). Based on these results, the three Millennia treatments were proven to be able to meet the daily requirement of vitamin C. It is known that the main ingredient in this drink is red guava. Red guava is a fruit that is high in vitamin C, high vitamin C content in a food is believed to help optimize iron absorption. Red guava fruit is a local fruit that is rich in antioxidants, especially vitamin C (50-300 mg/100 g), fiber, minerals, and polyphenolic compounds.

4.3.3. Results of Antioxidant Content Analysis in Millennia

Based on the results of laboratory tests that have been carried out on drinks with a mixture of guava juice, moringa leaf jelly and beet jelly (Millenia) it was found that the concentration of antioxidant content in formula A1 was 261.18 Ic 50 (ppm), formula A2 was 262.94 Ic 50 (ppm) and the A3 formula is 289.13 Ic 50 (ppm). Referring to the table of antioxidant activity, the three formulas are in the category of very weak antioxidants. Weak levels of antioxidants can be caused by the processing or addition of an ingredient to the formula. The categories of antioxidant activity can be seen in Table 3.

Table 3. Antioxidant Activity Categories (Blois, 1985 in Molyneux, 2004)

No	Category	Concentration
1.	Very strong	< 50
2.	Strong	50-100
3.	Currently	101-150
4.	Weak	151-200
5.	Very weak	201-500

4.4. Organoleptic Analysis Results

Acceptance assessment is done by organoleptic test. Organoleptic test is a study using the senses. In this study, researchers conducted sensory (organoleptic) tests based on the taste, aroma and color of the drink which were assessed by the panelists.

4.4.1. Results of Organoleptic Analysis of Beverage Taste on Student Panelists

Based on the results of the organoleptic analysis in table 4, it shows that drink A2 has the highest score compared to the treatment of drinks A1 and A3. Based on the percentage value of the acceptability test results, the taste of drinks A2 and A3 is classified as favorable (percentage value > 77.99), while the taste of drink A1 is classified as less favorable (percentage value 56-77.99)

Based on the normality test using the Shapiro-Wilk test, the results of the Millennia taste organoleptic test distribution had a sig value of 0.000 <0.05, which means the data was not normally distributed. If the data is not normally distributed, then to find out whether there is a difference in taste for each Millennia, then the Kruskall Wallis test is carried out and it is found that the sig value is 0.085> 0.05. This can be interpreted that there is no difference in taste in each Millennia treatment.

Table 4. The results of the analysis of the taste acceptance test on the panelists

Flavor	A1			A2			A3		
	Panelist	Score	%	Panelist	Score	%	Panelist	Score	%
Like	11	33	36.7%	19	57	63.3%	18	54	60.0%
Do not like it much	12	24	26.7%	9	18	20.0%	5	10	11.1%
Do not like	7	7	7.8%	2	2	2.2%	7	7	7.8%
Total	30	64	71.2%	30	77	85.5%	30	71	78.9%

4.4.2. The results of the organoleptic analysis of the aroma of the drink on the panelists

Based on the results of the analysis of the acceptability of the aroma of the drink on the panelists, it was shown that drink A2 had the highest score compared to the total score for drinks A1 and A3. Based on the percentage value of the acceptability test results, the aroma of drinks A1, A2 and A3 is classified as less favorable (percentage value 56-77.99).

Based on the normality test using the Shapiro-Wilk test, the results of the organoleptic test distribution for the aroma of beverages have a sig value of 0.000 <0.05, which means the data is not normally distributed. If the data is not normally distributed, then to find out whether there is a difference in the aroma of each drink, the Kruskall Wallis test is then carried out and it is found that the sig value is 0.942> 0.05. This can be interpreted that there is no difference in aroma in each drink treatment.

Table 5. The results of the analysis of the acceptability test for the aroma of drinks on the panelists

Aroma	A1			A2			A3		
	Panelist	Score	%	Panelist	Score	%	Panelist	Score	%
Like	8	24	26.7%	6	18	20.0%	8	24	26.7%
Do not like it much	16	32	35.6%	21	42	46.7%	15	30	33.3%
Do not like	6	6	6.7%	3	3	3.3%	7	7	7.8%
Total	30	62	69.0%	30	63	70.0%	30	71	67.8%

4.4.3. Results of Organoleptic Analysis of Beverage Color on Panelists

Based on the results of the analysis of acceptance of the color of the drink, it shows that drink A1 has the highest score compared to the total score of the Millennia treatment A2 and A3. The three colors of the drink are classified as preferred (percentage value > 77.99).

Based on the normality test using the Shapiro-Wilk test, the organoleptic test results for the color of the drink have a p value below 0.01, which means the data is not normally distributed. If the data is not normally distributed, then to find out whether there is a color difference in each drink, the Kruskall Wallis test is carried out and it is found that the sig value is 0.248> 0.05. This can be interpreted that there is no color difference in each drink treatment.

Table 6. Results of the Analysis of the Acceptance Test for the Color of Drinks in the Panelists

Color	A1			A2			A3		
	Panelist	Score	%	Panelist	Score	%	Panelist	Score	%
Like	21	63	70.0%	17	51	56.7%	14	42	46.7%
Do not like it much	8	16	17.8%	12	24	26.7%	16	32	35.6%
Do not like	1	1	1.1%	1	1	1.1%	0	0	0%
Total	30	80	88.9%	30	76	84.5%	30	74	82.3%

4.4.4. Results of Organoleptic Texture Analysis of Beverages on Panelists

Based on the results of the analysis of the acceptability test for the texture of the drink, it shows that drink A2 has the highest score compared to the total score of drinks A1 and A3. Based on the percentage value of the acceptability test results, the texture of the A2 drink is classified as preferred (percentage value > 77.99), for the texture of A1 and A3 drinks it is classified as less preferred (percentage value 56-77.99).

Based on the normality test using the Shapiro-Wilk test, it was found that the organoleptic test results for the texture of the drink had a p value below 0.01, which means the data was not normally distributed. If the data is not normally distributed, then to find out whether there is a difference in texture in each drink, then the Kruskall Wallis test is carried out and it is found that the sig value is 0.644> 0.05. This can be interpreted that there is no difference in texture in each Millennia treatment.

Table 7. Results of the Texture Acceptance Test Analysis of Drinks on the Panelist

Texture	A1			A2			A3		
	Panelist	Score	%	Panelist	Score	%	Panelist	Score	%
Like	11	33	36.7%	13	39	43.3%	11	33	36.7%
Do not like it much	17	34	37.8%	16	32	35.6%	15	30	33.3%
Do not like	2	2	2.2%	1	1	1.1%	4	4	4.4%
Total	30	69	76.7%	30	76	80.0%	30	74	74.4%

5. Conclusion

From the results of the discussion above, it can be concluded that the highest iron content is found in formula A2 with an iron content of 2.47 mg/100 gr millenia. The need for iron in young women aged 13-18 years is 15 mg/day. Even though they have not been able to meet their daily needs for iron, millennials have a good contribution to consume as an additional intake of iron from plant foods. Because the biggest source of iron is in animal foods, such as beef, liver, eggs and others. Society must balance the intake of foods rich in iron by combining sources of iron from plant foods and animal foods. In addition, the results obtained from the organoleptic test distribution for the texture of the drink had a p value below 0.01, which means that the data was not normally distributed. If the data is not normally distributed, then to find out whether there is a difference in texture in each drink, then the Kruskall Wallis test is carried out and it is found that the sig value is 0.644> 0.05. This can be interpreted that there is no difference in texture in each Millennia treatment.

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