Acceptance Test of Cava Smoothie as an Alternative Drink for Anemic Adolescent Girls

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Abstract. Anemia in adolescent girls can occur due to the lack of consumption of Vitamin C and Iron rich drinks. When consuming alternative drinks, the adolescent girls do not care much about their nutritional contents but their taste. Bananas and Avocados contain high levels of Vitamin C and Iron where in 100 g there are 55.1207 and 9.3015 mg of Vitamin C and 2.5726 and 1.7455 mg of Iron respectively. Cava Smoothie is a smoothie that stands for **Cav**endish Banana and **A**vocado Butter as the main ingredients and Pure Honey and Sukkari Dates as supporting ingredients. This study aims to determine the formulation, acceptability, and content of macro (Protein, Fat, Carbohydrates) and micro (Vitamin C and Iron) nutrients. This study used an experimental method using a non-factorial Completely Randomized Design (CRD) with 2 repetitions. The research subjects were 25 semi-trained panelists. The results of the acceptability test on the research panelists showed that F0 was the most preferred formula by the panelists, with the nutritional content of Protein of 4.1250%, Fat of 1.0111%, Carbohydrates of 30.5470%, Vitamin C of 41.23 mg/100 g, and Iron of 12.49 mg/100 g. F0 is the chosen formula because it has good receptivity and also nutritional content that can meet the needs of alternative drinks. Therefore, it can be used as a snack for anemic adolescent girls. Research can be continued with research on the effect of giving *Cava Smoothie* and iron supplementation to increase hemoglobin levels and erythrocyte index in anemic adolescent girls.

Keywords: Anemia · Banana · Avocado

1 Introduction

Adolescence is a transition from childhood to adulthood accompanied by several changes [1]. In experiencing change, adolescents encounter various problems regarding physical changes, nutritional adequacy, psychosocial, emotional, and intelligence development that affect health. As a result of physical, psychological changes, and nutritional adequacy problems in adolescents, several health problems arise [2]. One of the health problems that often arise in adolescents is anemia [3]. According to the World Health Organization (WHO), anemia is characterized by levels of hemoglobin in the blood below normal [4].

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Hemoglobin is needed to carry oxygen. If the hemoglobin level is less, there will be a decrease in the volume of blood to carry oxygen to body tissues. Iron is needed to synthesize hemoglobin, and low iron in the body is called iron deficiency anemia [5].

Iron deficiency anemia is the most natural nutritional problem in the world and affects more than 600 million people [6]. AM Mamohtob (2019) claims that the prevalence of iron deficiency anemia in adolescent girls is 29% in the world. The prevalence of anemia in adolescent girls in early adolescence to late adolescence reaches 41.5% in developing countries. Indonesia is one of the developing countries with the prevalence of anemia in adolescent girls, which is higher than that of iron deficiency anemia in the world which is 37% [7]. The high prevalence of iron deficiency anemia can occur due to several factors including chronic blood loss during menstruation, lack of adequate iron-containing foods, or a combination of both [8].

Iron is divided into two forms, namely heme iron and non-heme iron. Absorption of non-heme iron is affected by the individual's iron status, the amount of available non-heme iron, and the balance between inhibitory and enhancer factors of iron. Inhibitor factors that can inhibit iron absorption include caffeine, tannins, oxalate, phytate, which are found in soybean, tea, and coffee products as well as calcium, while enhancer factors that can accelerate iron absorption include Protein, Folic Acid, Zinc, and Vitamin C [9]. High sources of Vitamin C are found in bananas and avocados, where in 100 g there are 55.1207 and 9.3015 mg of Vitamin C respectively. Non-heme iron is also available in bananas and avocados where in 100 g there are 2.5726 and 1, 7455 mg iron respectively [10].

People in Indonesia really like and often consume interlude drinks, but the interlude drinks consumed by the community in general are concerned with good taste and do not pay too much attention to the nutritional contents so that the contribution of nutrients from interlude drinks to their daily needs is still very low [11]. Nutrients obtained from interlude drinks are used to add nutrients obtained from the main drink. Therefore the interlude drinks consumed should be nutritious and healthy; the interlude drink products are needed are not only tasty but also healthy and nutritious [12].

Smoothie is a mixed drink of fruits or vegetables that can be added with honey by means of a blender. *Smoothie* texture is thicker than juice [13]. Various types of fruits can be used as ingredients to makes *smoothies*, including Cavendish bananas and Avocado butter. Both are known to have functional properties that are beneficial to the health of the body because they both contain high levels of Vitamin C and Iron, so both are known to be good for maintaining health such as overcoming the incidence of anemia. Bananas are efficacious in overcoming anemia because bananas contain Vitamin C which can help increase iron absorption [14]. Vitamin C increases absorption because it reduces iron in the ferrous form to ferrous. Vitamin C increases the absorption of iron from food through the formation of ferrous ascorbate complexes. The combination of 200 mg of ascorbic acid with iron salts can increase iron absorption by 25%–50% [15]. Avocado contains iron which has benefits including lowering cholesterol levels, balancing blood sugar, strengthening kidney and bone function, improving brain function, as a blood enhancer, and reducing the risk of cancer [16]. The iron in avocados helps in the formation of red blood cells. Avocado can also monitor heart rate and keep the body's nervous function awake. The natural nutritional content possessed by avocado stimulates the body to produce blood platelets in accordance with the amount needed by the body [17].

Many studies have been carried out on the consumption of bananas and avocados, but those specifically highlighting the consumption of bananas and avocados in the form of *smoothies* are still rare. *Smoothie* products are made from real fruits combined with honey and vegetables without using sugar as a sweetener and without using preservatives [18]. *Smoothies* also have minimal processing so that the nutrients in the *smoothie* are not reduced much [19]. Smoothies are in great demand by people who like consuming fruits and vegetables. With their appearance that is quite attractive to photograph, and also taste delicious and is made from natural ingredients and is easy to find in everyday life, *Smoothies* are in demand by those from teenagers to adults [20].

Thus, an innovation has been made to make an interlude in the form of *Cava Smoothie*. This study aims to determine the formulation, acceptability, and content of macro (Protein, Fat, Carbohydrate) and micro (Vitamin C and Iron) *Cava Smoothie* as an alternative drink for anemic adolescent girls.

2 Research Methods

This study is used an experimental research method by using a non-factorial Completely Randomized Design (CRD) with 2 treatments [21]. This research was conducted from November 2021 to January 2022. Organoleptic tests were carried out at the Taste Testing Laboratory of the Tanjungkarang Health Polytechnics, and chemical analysis was carried out at the Laboratory of Lampung State Polytechnics and the Central Laboratory for Food and Nutrition Studies of Gadjah Mada University.

The research samples were *Cava Smoothies* with Cavendish Banana and Avocado Butter as raw materials. The samples were presented to the panelists as much as 200 g for each *Smoothie* formula. The process of providing Cavendish bananas and avocado butter through a Fruit Plantation in Lampung Province. Cavendish bananas have several characteristics that distinguish them from other types of bananas, the following are the characteristics of Cavendish bananas:

Cavendish banana tree is about 2.5 to 3 m high.

The color of the cavendish banana tree trunk is blackish green while the color of the leaves is dark green.

Cavendish bananas usually have bunches of eight to 13 combs, while each comb can have 12 to a maximum of 22.

Cavendish banana has a soft fruity texture and a sweet taste, but a bit sour.

Before ripening, Cavendish bananas have a green skin and look quite thick. After ripe, the color changes to a smooth yellow.

The seven characteristics of Avocado Butter:

(1) Purplish Green Skin Color.
(2) Smooth Fruit Skin Surface.
(3) Fruits are easy to peel from the skin.
(4) Seeds are easily separated from the flesh of the fruit.
(5) Soft Butter Avocado Fruit Texture.
(6) Flesh Soft & Clean.
(7) Green Fruit stalk.

Table 1. *Cava Smoothie* Formulas

Material Name	**F0 (135)**	**F1 (246)**	**F2 (357)**	**F3 (468)**
Cavendish Banana (gr)	100	100	50	75
Avocado Butter (g)	100	50	100	75
Pure Honey (gr)	0	25	25	25
Sukkari Dates (gr)	0	25	25	25
Total	200	200	200	200

Source: Primary Data (2022)

Panelists assessed *Cava Smoothie* by filling out an organoleptic test form covering color, aroma, flavor, texture, after taste, and overall on a 9 scale (1: very very much dislike, 2: very much dislike, 3: dislike, 4: somewhat dislike, 5: neutral, 6: somewhat like, 7: like, 8: very much like, 9: very very much like) [22]. Researchers used semi-trained panelists, namely 25 nutrition students.

The ingredients used in the process of making *Cava Smoothie* are Cavendish Banana, Avocado Butter, Pure Honey, and Sukkari Dates. The *smoothie* formulas in this study are presented in Table 1.

How to make *Cava Smoothie*:

(1) Freeze the Cavendish Banana and Avocado Butter for about overnight
(2) Prepare pure honey and sukkari dates
(3) *Blend* Cavendish banana, Avocado butter, pure honey and Sukkari dates
(4) Then pour it into a cup
(5) *Cava Smoothie* is ready to serve
(6) Store the *Cava Smoothie* in the freezer or ice cooling box.

The acceptability assessment was obtained from the organoleptic test form (color, aroma, flavor, texture, after taste, and overall) which had been assessed by the panelists.

This study was conducted in accordance with the collaborative agreement between the Master's Degree Program in Nutrition, Graduate School, Universitas Sebelas Maret and the Laboratory of Nutrition Department at Tanjungkarang Health Polytechnics, numbered: 1728/UN27.20.2.7/PN/2021 and HK.03.01/I.2/0027/2021.

Analysis of the data used in this study using a computer program. The data from the preference test on acceptability was processed with Microsoft Excel 2010 and then statistically analyzed by using SPSS 25.0 with data normality analysis first, then it was continued with One Way Analysis of Variance, whereas if it was not normal, then it was continued with Kruskall Wallis analysis [23].

3 Results

3.1 Descriptive

The result of this research is presented in order by initially presenting the distribution of panelists' level of preference for characteristics smoothies (Tables 2 and 3).

The descriptive table above shows that the minimum value of color was 3, and the maximum was 9 while the average was 6.11 with a standard deviation of 1.657. The minimum value of aroma was 1, and the maximum was 9 while the average was 5.62 with a standard deviation of 1.785. The minimum value of flavor was 1, and the maximum was 9 while the average was 5.16 with a standard deviation of 1.824. The minimum value of texture was 2, and the maximum is 9 while the average value was 5.60 with a standard deviation of 1.400. The minimum value of after taste was 1, and maximum was 8 while the average was 4.98 with a standard deviation of 1.781. Then, the minimum value of overall was 1, and the maximum was 9 while the average was 5.27 with a standard deviation of 1.863.

3.2 Normality Test

The result of the normality test shows that the significance value of all test parameters was small from alpha 0.05. Thus, the data were not normally distributed. Then further tests were carried out by using the Kruskal Wallis test (Table 4).

3.3 Kruskal Wallis

Kruskal-Wallis test is performed to see the significant differences among treatments.

3.3.1 Color Difference in Each Treatment

The Ranks table above shows that the highest mean rank of color in Treatment 3 with the mean rank of 61.18 while the lowest mean rank was 40.20 which was found Treatment 1. Then it was continued with the Kruskal-Wallis test as shown in the following Table 5.

The test statistics table above shows that, the significance value of the asymp. Was 0.067, which was greater than 0.05, meaning that there was not any significant difference of color among the four treatment categories consisting of Control, Treatment 1, Treatment 2, and Treatment 3 on color (Table 6).

3.3.2 To See the Difference in Aroma in Each Treatment

The Ranks table above shows that the highest mean rank of the aroma was found in Control, which was 58.84 while the lowest mean rank of aroma was found in Treatment 1with the mean rank of 36.00. Then it was continued with the Kruskal-Wallis test as shown in the following Table 7.

The test statistics table above shows that the significance value of the asymp was 0.014, which was less than 0.05, meaning that there were significant differences of aroma among the four treatment categories consisting of Control, Treatment 1, Treatment 2, and Treatment 3 (Table 8).

Table 2. Distribution of Panelists' Level of Preference for Characteristics Smoothies

Formulation	1	2	3	4	5	6	7	8	9	10	11	12
Color												
F0 (135)	3	5	4	9	4	4	7	7	5	5	8	9
F1 (246)	3	5	7	7	6	3	7	4	6	7	4	7
F3 (357)	7	3	7	9	5	3	8	5	7	5	5	9
F4 (468)	7	3	7	9	7	4	7	6	7	5	7	9
Scent												
F0 (135)	5	5	5	9	5	5	4	5	5	7	6	9
F1 (246)	1	5	3	7	4	2	7	5	7	5	3	7
F3 (357)	5	3	5	8	3	3	7	5	7	5	4	8
F4 (468)	7	5	7	9	4	4	7	5	6	5	7	9
Flavor												
F0 (135)	7	5	7	7	5	7	7	6	5	7	5	7
F1 (246)	1	4	3	4	4	3	5	4	3	3	3	7
F3 (357)	4	3	6	4	3	4	5	4	5	6	3	7
F4 (468)	6	3	7	6	5	4	4	6	6	6	5	7
Texture												
F0 (135)	7	4	5	7	5	6	4	7	7	6	5	7
F1 (246)	7	4	5	6	5	5	4	4	6	4	4	7
F3 (357)	7	3	7	5	4	6	5	4	7	7	4	6
F4 (468)	3	3	7	7	5	6	5	6	6	7	5	6
After Taste												
F0 (135)	4	5	7	7	6	7	5	6	7	5	4	7
F1 (246)	1	4	3	5	4	3	5	5	4	3	2	6
F3 (357)	1	3	5	7	4	4	7	5	4	5	3	6
F4 (468)	5	3	7	7	3	5	4	6	3	7	5	2
Overall												
F0 (135)	7	5	7	8	5	6	4	6	5	7	7	7
F1 (246)	1	4	3	6	4	3	6	5	4	4	3	6
F3 (357)	3	3	5	7	3	4	7	5	6	6	3	6
F4 (468)	7	3	7	7	4	5	6	6	5	7	5	3

(*continued*)

3.3.3 To See the Difference in Taste in Each Treatment

The Ranks table above shows that the highest mean rank of flavor was found in Control with the mean rank 67.78 while the lowest mean rank was found in Treatment 1 with

Table 2. (*continued*)

Formulation	13	14	15	16	17	18	19	20	21	22	23	24	25	Average
Color														
F0 (135)	8	3	6	6	6	6	7	5	8	7	7	6	4	5.96
F1 (246)	6	5	3	7	5	5	4	6	6	7	6	6	6	5.52
F3 (357)	8	7	3	7	6	7	5	9	8	7	5	6	5	6.24
F4 (468)	6	9	5	6	8	8	8	8	8	6	5	6	7	6.72
Scent														
F0 (135)	8	7	6	7	5	6	8	6	7	5	8	6	6	6.2
F1 (246)	7	3	3	3	3	4	3	7	7	5	4	4	7	4.64
F3 (357)	7	6	3	7	5	7	6	8	8	5	2	6	4	5.48
F4 (468)	6	8	5	3	7	6	7	8	8	5	4	7	5	6.16
Flavor														
F0 (135)	7	4	7	6	7	6	7	6	7	4	6	6	7	6.2
F1 (246)	4	6	1	3	3	4	2	2	4	2	3	7	6	3.64
F3 (357)	7	8	3	7	3	6	8	8	6	4	6	4	4	5,12
F4 (468)	7	9	4	3	4	6	9	3	8	3	7	8	6	5.68
Texture														
F0 (135)	8	6	6	6	6	7	6	6	6	5	7	7	6	6.08
F1 (246)	6	6	2	3	4	4	3	5	6	5	6	7	5	4.92
F3 (357)	7	7	3	7	4	5	8	8	7	5	5	7	5	5.72
F4 (468)	6	9	5	4	4	5	8	4	8	5	6	7	5	5.68
After Taste														
F0 (135)	8	4	7	6	6	7	7	5	7	5	7	4	7	6
F1 (246)	5	6	1	3	3	4	2	4	4	3	5	3	6	3.76
F3 (357)	7	8	3	7	3	5	8	7	6	4	4	3	4	4.92
F4 (468)	7	8	5	3	5	6	8	3	8	3	5	7	6	5.24
Overall														
F0 (135)	8	4	7	6	6	7	7	4	7	5	8	6	7	6.24
F1 (246)	7	6	1	3	3	3	1	3	4	3	4	3	6	3.84
F3 (357)	7	8	3	7	3	5	8	8	7	4	3	4	5	5.2
F4 (468)	7	9	5	4	6	7	9	3	8	3	5	8	6	5.8

*Obtained from Microsoft Excel Test results

the mean rank of 27.58. Then it was continued with the Kruskal-Wallis test as shown in the following Table 9.

Table 3. Descriptive Statistics

	N	Min	Max	mean	Std. Deviation
Color	100	3	9	6.11	1,657
Scent	100	1	9	5.62	1,785
Flavor	100	1	9	5.16	1,824
Texture	100	2	9	5.60	1,400
Aftertaste	100	1	8	4.98	1,781
Overall	100	1	9	5.27	1,863
Valid N (listwise)	100				

Table 4. Tests of Normality

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistics	df	Sig.	Statistics	Df	Sig.
Color	,154	100	,000	,944	100	,000
Scent	,160	100	,000	,954	100	,002
Flavor	,167	100	,000	,944	100	,000
Texture	,152	100	,000	,948	100	.001
After test	,142	100	,000	,943	100	,000
Overall	,143	100	,000	,942	100	,000

a. Lilliefors Significance Correction

Table 5. Mean rank of color in Treatment

Ranks			
	Treatment	N	Mean Rank
Color	Control	25	47.76
	Treatment 1	25	40,20
	Treatment 2	25	52.86
	Treatment 3	25	61.18
	Total	100	

The test statistics table above shows that the significance of the asymp was 0.000, which was less than 0.05, meaning that there were significant differences of flavor among the four treatment categories consisting of Control, Treatment 1, Treatment 2, and Treatment 3 (Table 10).

Table 6. Kruskal Wallis test on color difference

Test Statistics, b	
	Color
Chi-Square	7,174
Df	3
asymp. Sig.	,067

a. Kruskal Wallis Test
b. Grouping Variable: Treatment

Table 7. Mean rank of scents

Ranks			
Scent	Control	25	58.84
	Treatment 1	25	36.00
	Treatment 2	25	48,70
	Treatment 3	25	58.46
	Total	100	

Table 8. Kruskal-Wallis Test of Scents

Test Statistics, b	
	Scent
Chi-Square	10,661
Df	3
asymp. Sig.	0.014

a. Kruskal Wallis Test
b. Grouping Variable: Treatment

3.3.4 To See the Difference in Texture in Each Treatment

The Ranks table above shows that the highest mean rank of texture was found in Control with the mean rank of 60.52 while the lowest mean rank of 37.08. Then it was continued with the Kruskal-Wallis test as shown in the following Table 11.

The test statistics table above shows that the significance value of the asymp. Was 0.030, which was less than 0.05, meaning that there were significant differences of texture among the four treatment categories consisting of Control, Treatment 1, Treatment 2, and Treatment 3 (Table 12).

Table 9. Test on flavor/taste

Ranks			
	Treatment	N	Mean Rank
Flavor	Control	25	67.78
	1 treatment	25	27.58
	2 treatment	25	49.38
	3 treatment	25	57.26
	Total	100	

Table 10. Kruskal-Wallis test on Flavor

Test Statistics, b	
	Flavor
Chi-Square	26,733
df	3
asymp. Sig.	,000

a. Kruskal Wallis Test
b. Grouping Variable: Treatment

Table 11. Difference in Texture

Ranks			
	Treatment	N	Mean Rank
Texture	Control	25	60.52
	Treatment 1	25	37.08
	Treatment 2	25	53.38
	Treatment 3	25	51.02
	Total	100	

3.3.5 To See the Difference After Taste in Each Treatment

The Ranks table above shows that the highest mean rank of after taste was found in Control with mean rank of 67.24 while the lowest mean rank was found in Treatment 1 with the rank mean of 31.22. Then it was continued the Kruskal-Wallis test as shown in the following Table 13.

The test statistics table above shows that the significance value of the asymp. Was 0.000, which was less than 0.05, meaning that there were significant differences of after

Table 12. Kruskal-Wallis test on Texture

Test Statistics, b	
	Texture
Chi-Square	8,983
Df	3
asymp. Sig.	0.030

a. Kruskal Wallis Test
b. Grouping Variable: Treatment

Table 13. Difference in after taste

Ranks			
	Treatment	N	Mean Rank
After taste	Control	25	67.24
	Treatment 1	25	31.22
	Treatment 2	25	49.34
	Treatment 3	25	54.20
	Total	100	

Table 14. Kruskal-Wallis test on After taste

Test Statistics, b	
	Aftertest
Chi-Square	20,422
Df	3
asymp. Sig.	,000

a. Kruskal Wallis Test
b. Grouping Variable: Treatment

taste among the four treatment categories consisting of Control, Treatment 1, Treatment 2, and Treatment 3 (Table 14).

3.3.6 To See the Overall Difference in Each Treatment

The Ranks table above shows that the highest mean rank of Overall was found Control with the mean rank 65.92 while the lowest mean rank was found in Treatment 1 with the mean rank of 29.38 Then it was continued the Kruskal-Wallis test as shown in the following Table 15.

Table 15. Overall difference in each treatment

Ranks			
	Treatment	N	Mean Rank
Overall	Control	25	65.92
	Treatment 1	25	29.38
	Treatment 2	25	49.00
	Treatment 3	25	57.70
	Total	100	

Table 16. Kruskal-Wallis test on all elements.

Test Statistics, b	
	Overall
Chi-Square	22.585
Df	3
asymp. Sig.	,000

a. Kruskal Wallis Test
b. Grouping Variable: Treatment

The test statistics table above shows that the significance value of the asymp. Was 0.000, which was less than 0.05, meaning that there were significant differences of Overall among the four treatment categories consisting of Control, Treatment 1, Treatment 2, and Treatment 3 (Table 16).

4 Discussion

4.1 Color

Color is the first sense that could be seen directly by the panelists. Determination of the quality of food ingredients in general depends on the color it has, a color that does not deviate from the color that should give the impression of a separate assessment by the panelists [24]. Attractive color combinations will increase drink acceptance. The use of the same amount of bananas and avocados causes the resulting *smoothie* to be more greenish-yellow in color due to the pigments contained in bananas and avocados. The bright color of the drink attracts more attention so that the panelists liked it more. Panelists preferred the F0 treatment because the resulting color was brighter than those of F1, F2, and F3 treatments.

4.2 Aroma

Aroma is the reaction of the drink that will affect the consumers. Before the consumers enjoy the drink, they can smell the drink. Aroma is also one of the components of the

taste of a drink and can be a determinant of the deliciousness of the drink [25]. The aroma of each treatment had a significant difference when smelled due to the addition of bananas and avocados which differed between treatments in the manufacturing process. The distinctive aroma of bananas and avocados did not dominate. The aroma in the Cava Smoothie was not unpleasant because the bananas and avocados used were still fresh due to the overnight freezing process. Panelists preferred F0 treatment because the aroma of banana and avocado was not too strong and there was no unpleasant smell.

4.3 Flavor

Taste has an important role in human life. For example, flavor can affect human perception of the drinks they consume [26]. The flavor of the three *smoothie* treatments was influenced by the use of basic ingredients, namely bananas and avocados in different doses, making them slightly different from other *smoothie* products in general. The more different the use of bananas and avocados was, the more banana and avocado the *smoothie* would taste. The F0 treatment was preferred by the panelists because the banana and avocado flavors were not too conspicuous, so there was a balance between the banana and avocado flavors.

4.4 Texture

Texture is the sensation of pressure that can be observed with the mouth or touched with the fingers, and consistency is rough and smooth [27]. Treatment F1 which added less avocado produced a coarser texture than Treatment F2. Similarly, Treatment F2 which added less banana resulted in too soft texture, and Treatment F3 which added bananas and avocado in a balanced but less amount than F0 produced a too rough texture. Therefore, Treatment F0 preferred by panelists because the texture gained was more balanced, neither too rough nor too soft.

4.5 After Taste

After taste is related to the taste that remains in the mouth even though the stimulus is no longer there [28]. In the F1 treatment the taste left in the mouth was less sweet due to the use of more banana than avocado. In the F2 treatment, however, the taste left in the mouth was quite sweet due to the use of more avocado than banana. In treatment F3 the taste left in the mouth was too sweet due to the use of less banana and avocado but quiet much more honey and dates, so the panelists preferred Treatment F0.

4.6 Overall

Overall organoleptic testing is a combination of the previous parameters, namely color, texture, aroma, flavor, and after taste [29]. The results of the statistical analysis of the Kruskal-Wallis test at the 5% level shows that the F0 treatment interaction was significantly different to the overall attributes of the *Cava* Smoothie product ($P < 0.05$). Overall, the most preferred is F0 treatment, because in terms of color, texture, aroma, flavor, and after taste, F0 treatment had the highest score (Table 17).

Table 17. *Cava Smoothie* Nutritional Content per 100 g

Nutrient content	*Cava Smoothie*
Proteins (%)	4.1250
Fat (%)	1.0111
Carbohydrates (%)	30.5470
Vitamin C (mg)	41.23
Iron (mg)	12.49

Source: [30]

4.7 Protein Level

Protein is an important food substance for the body, because protein functions as fuel in the body and also functions as a building and regulatory substance [31]. Based on the proximate test table, the protein content of Cava Smoothie was 4.1250%.

4.8 Fat Level

Fat serves as an energy reserve in the form of fat cells [32]. Based on the proximate test table, the fat content in the Cava Smoothie was 1.0111%.

4.9 Carbohydrate Content

Carbohydrates function to prevent ketosis, excessive protein breakdown, mineral loss, and help protein and fat metabolism [33]. Based on the proximate test table, the carbohydrate content in Cava Smoothie was 30.5470%.

4.10 Vitamin C Level

Vitamin C functions in the formation of proteins used to make skin, tendons, ligaments. Vitamin C as an enhancer because vitamin C helps the absorption of non-heme iron by changing the ferric form into ferrous which is easily absorbed. Vitamin C forms an iron-oxalate group which remains soluble at a higher pH such as in the duodenum so that it is easily absorbed [34]. Based on the proximate test table, the level of vitamin C in the Cava Smoothie was 41.23 mg.

4.11 Iron Level

Iron levels function as a tool to transport oxygen from the lungs to body tissues, and as a means of transporting electrons into the body. To transport oxygen, iron combines with proteins to form hemoglobin in red blood cells and myoglobin in muscle fiber cells[35]. Based on the proximate test table, the iron content in Cava Smoothie was 12.49 mg (Table 18).

Table 18. Analysis of Needs for Intermediate Drinks for Young Women

Nutrient content	Proximate Analysis	Needs Analysis Drinks
Proteins (%)	4.1250	6.5
Fat (%)	1.0111	7
Carbohydrates (%)	30.5470	30
Vitamin C (mg)	41.23	22.5
Iron (mg)	12.49	1.5

Source: [36]

The protein contained in Cava Smoothie was 4.1250% per 100 g. When compared with the analysis of the need for interlude drinks, the Cava Smoothie product was insufficient to meet the intake of interlude drinks where consuming 2 servings (200 g) of Cava Smoothie contains 8.52% protein.

Cava Smoothie had a fat content of 1.0111% per 100 g. Cava Smoothie levels were lower than the analysis of the drink because it only used avocado as a source of fat. Adding avocado in addition to adding nutritional value to the fat in Smoothies can also make Smoothies softer.

The carbohydrate content of Cava Smoothie is 30.5470 g per 100 g. Based on the analysis of the need for an interlude drink, consuming 100 g of Cava Smoothie can fulfill carbohydrate nutrients. The carbohydrate content in Cava Smoothie was 30.5470 g and the analysis of the need for an interlude drink was 30 g.

The results of the analysis of the need for the Cava Smoothie interlude drink when viewed from the need for vitamin C and iron per 100 g of the interlude drink had 41.23 mg of vitamin C and 12.49 mg of iron respectively, in this case *Cava Smoothie* can qualify as a snack for anemic adolescent girls.

5 Conclusion

The best *Cava Smoothie* formula was the one in F0 treatment with 100 g of Cavendish banana and 100 g of avocado Butter. Based on color, aroma, flavor, texture, after taste, and overall treatment F0 was preferred with a score of 5.96, 6.20, 6.20, 6.08, 6.00, and 6.24 respectively. The results of the proximate analysis of the best *smoothies* per 100 g are protein 4.1250%, fat 1.011%, carbohydrates 30.5470%, vitamin C 41.23 mg/100 g, and iron 12.49 mg/100 g. *Cava Smoothie* can be used as an alternative drink for anemic adolescent girls, women of childbearing age, and the community. *Cava Smoothie* in order to meet the needs of interlude drinks can be modified with the addition of pure honey and sukkari dates to increase the nutritional value of iron.

6 Suggestion

Research can be continued with research on the effect of giving *Cava Smoothie* and iron supplementation to increase hemoglobin levels and erythrocyte index in anemic adolescent girls.

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