

Analysis of Micro Nutrition and Amino Essential Acids of Pempek Green Content

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Abstract - The problem of adolescent anemia is a serious problem, the national anemia rate is 21.7%, where 18.4% occur in males and 23.9% occur in females, mostly due to iron deficiency. Anemia in adolescents adversely affects the decline in immunity, concentration, learning achievement, adolescent fitness and productivity. To overcome the low Iron can be done by consuming foods high in Iron, Folic acid, Vitamin A, Vitamin C and Zinc, Pempek Green is a food containing 17 (seventeen nutrients and energy and water), including Iron, Folic acid, and Vitamin C). Pempek Green has been tested organoleptically through both panelists (60 students) and respondents (Palembang FKM Students as many as 120 students). Its Campus. With the results selected sample A3 Pempek Plain (Spinach Fortification), where the result is 80% good taste and very good, Aroma 74% tasty and very tasty, 98% attractive and very attractive color and texture 85.8% soft and very soft. And like and like 86 %. The purpose of this study was to determine the content of Fe, Folic Acid and Vitamin C and the content Pempek Green Amino Acids which were analyzed by Laboratory. This research method uses experimental analysis, which is a sample that has been determined to be observed in the nutrient content (Fe, Folic Acid and Vitamin C). and Amino Acids which are further analyzed in the Laboratory. The results showed that the nutrient content per serving (30 grams) Pempek Green: Protein 3.83% AKG, Iron 9% AKG, Calcium 8.8% AKG, Magnesium 5.4% AKG, 4% AKG Fiber, Phosphorus 2, 3% AKG and complete Amino Acid do not exceed the AKG (RDA <20) of the presentation as a snack. It is recommended that Pempek Green can be used by teenagers as a snack to increase Hb (5,74 Mg/100 gram) levels Teenager.

Keywords: *Pempek Green, micro nutrition, amino essential acids.*

I. INTRODUCTION

Nationally incidence of anemia in Indonesia by 21.7%, of which 18.4% were male and 23.9% in women, mostly due to iron deficiency [1] Furthermore, the results of the Basic Health Research, as many as 48 , 9 percent of pregnant women in Indonesia have anemia [2]. Lack of iron and folic acid are important causes of anemia in children and adolescents. Iron found in food sources Vegetable is the largest source of iron in the community in Indonesia [3]. Anemia in adolescents will result in decreased immunity, concentration, learning achievement, adolescent fitness and productivity. Furthermore, anemia experienced by young women will increase the risk of maternal mortality, premature birth and low birth weight (LBW) , because they are expectant mothers who will get pregnant and give birth to a baby [4].

Pempek Green is Pempek spinach fortification which contains nutrients (17 nutrients and energy and water, including Iron, Folic acid, and Vitamin it C). This product is has been tested organoleptic to 60 panelists and 120 respondents FKM Unsri Palembang students with selected results A3 Pempek Green sample, where the results are 80% taste, good and very good, Aroma 74% delicious and very delicious, 98% color: attractive and very interesting , texture 85.8% soft and very soft. And passions; likes and likes 86% [5]. Therefore, it is very important to analyze the micronutrient content and essential amino acids in green pempek it is necessary to analyze how much its nutrient content is based on laboratory analysis compared to the Nutrition Adequacy Rate [6].

II. METHODS

The design of this study was an observational analysis study where the determined sample was then observed for the content of Micro Fe, Nutritional Folic Acid and Vitamin C and Essential Amino Acids through laboratory examination.

The location of this research was conducted an examination of Laboratory Tests for Fe, Folic Acid and Vitamin C and Amino Acid Levels using the services of PT. Indo Saraswanti Genetech, Bogor.

Pempek Green Making Materials : Pempek required materials with the following composition :1 kg of mackerel fish or milled fish, 50 ml of ice / cold water, 1kg of sago flour or starch / tapioca flour, 50 grams of salt, 2 teaspoons of vetsin, 200 grams of spinach the ratio between fish and flour used in making pempek is 1: 1.

The process of making Green Pempek is as follows: Stage of grinding fish meat as the basic ingredients of the dough; 1 kg of fresh fish , weeded and cleaned first,.The skin is exfoliated from the flesh, Discarded all the bones, Small cut, ready to be threshed / ground.

Stage of making pempek green and boiling dough.Minced fish meat mixed with 350 ml of ice water and 150 grams of spinach juice. Then add 50 grams of salt and flavoring so that the taste becomes more savory. While continuing to stir, add 1 kg of tapioca flour to the fish and water mixture little by little until a smooth, non-sticky mixture is formed in the hand. Pempek shape printing: after the dough is formed, the dough is made into various types of pempek. Then boil it for about 5 minutes and become Pempek Green.

Tools used to make pempek: Stove, Blender Knife, Cutting Board, Basin, Measuring Glass, Drain, Pot, and Spoon. Laboratory equipment used for the examination of Pempek Green is a tool used by the Indonesian Center for Agro Industry and Saraswanti Indo Genetech Bogor, the Industrial Research and Development Agency, Bogor Ministry of Industry.

Analysis of the data used is to describe the results of research in the form of numbers needed. So in the end the conclusion of the research results will be in accordance with the objective.

III. RESULTS

Table 1.Results of Analysis of Essential Amino Acids

No	Essential Amino Acids	Unit	Result
1	L-Triptophan	Mg / kg	574.68
2	L-Phenylalanine	Mg / kg	3626.03
3	L-Isoleucine	Mg / kg	4071.82
4	L-Valin	Mg / kg	4832.98
5	L-Lysine	Mg / kg	6389.81
6	L-Leucine	Mg / kg	7461.33
7	Threonin	Mg / kg	4926.00
8	L-Histidine	Mg / kg	2693.02
9	L-Methionine	Mg / kg	1149.42

Source: Saraswanti Laboratory Results

Table 1 shows that the largest amino acid content is L-Leucine (7461.33mg / 1 kg) and the smallest is L-Histidine (2693.02). Furthermore, the analysis unit is processed into 100 grann and 30 grams per serving of Pempek Green as shown in Table 2.

Table 2. The content of Green Pempek amino acids Perserving / cut Pempek Green (30 g)

NO	Essential amino acids	Unit (100 grams) *	Perserving / cut Pempek Green (30 g)
1	L-Triptophan	57,468 mg / 100 g	17.24 mg
2	L-Phenylalanine	362.603 mg / 100 g	108.78 mg
3	L-Isoleucine	407,182 mg / 100 g	122.15 mg
4	L-Valin	483,298 mg / 100 g	144, 99 mg
5	L-Lysine	638,981 mg / 100 g	191.69 mg
6	L-Leucine	746,133 mg / 100 g	223.8 mg
7	Threonin	492,600 mg / 100 g	147.78 mg
8	L-Histidine	269,302 mg / 100 g	80.79 mg
9	L-Methionine	114,942 mg / 100 g	34.48 mg

From table 2. It is processed into the adequacy rate for adolescents aged (16-18), the results are as shown in Table 3

Table 3. Results of Percentage RDA of Pempek Green Amino Acid Per Serving for Adolescents

NO	Essential amino acids	Per serving / cut Pempek Green (30 g)	% AKG
1	L-Triptophan	17.24 mg	3.14%
2	L-Phenylalanine	108.78 mg	4.5%
3	L-Isoleucine	122.15 mg	6%
4	L-Valin	144, 99 mg	12.3%
5	L-Lysine	191.69 mg	7.5%
6	L-Leucine	223.8 mg	6.5%
7	Threonin	147.78 mg	15%
8	L-Histidine	80.79 mg	9.6%
9	L-Methionine	34.48 mg	3,685

From table 2 above, it is known that essential amino acids per serving can meet the needs of various adolescents, the largest is L-Valine (12.35%) and the smallest is L-Tryptophan (3.14%).

Table 4. Minerals, Fiber, Protein, Carbohydrates and Energy

Parameter	Unit (100 grams)	Per Green Pempek Serving (30 g)	% AKG Green Pempek Presentation
Calcium	351,48 mg	105.44 mg	8.76%
Magnesium	41.77 mg	12.53 mg	5,4%
Iron	5.74 mg	1.72 mg	9%
Protein	8.25 g	2.48 g	3.83%
Food fiber	4.38 g	1.31 g	4%
Carbohydrate	31.74 g	9,52 g	3%
Energy	171.01 g	51.3 g	2.2%

From table 4 above, the highest mineral content of the presentation is iron (9%), the smallest magnesium (5.4%). Important for the body that cannot be produced by the human body but are supplied from food or by supplements. The nine essential amino acids are lysine, leucine, isoleucine, valine, methionine, phenylalanine, threonine, tryptophan and Histidine [7].

From the research results, it is known that the green pempekperentation can fulfill; L-Tryptophan 3.14% AKG, L- Phenylalanine 4.5% AKG, L-Isoleucine 6% AKG, L- Valin12.3% AKG, L-Lysine 7.5% AKG, L-Leucine 6.5% AKG, L-Leucine 6.5% AKG, Threonin15% AKG, L-Histidine 9.6% AKG. and L-Methionine 3,685% AKG. This means that the essential amino acid pempek green per serving is less than 20% RDA.

Furthermore, the results of research on Minerals, Fiber, Protein, Carbohydrates and Energy are known to be Calcium 8.76% RDA, Magnesium 5.4% RDA, Iron 9% RDA, Protein 3.83% RDA, Food fiber 4% RDA, Carbohydrate 3% RDA, and Energy 2.2% RDA. This means that the essential amino acid pempek green per serving is less than 20% RDA. This means that the content of minerals, fiber, protein, carbohydrates and energy is less than 20% RDA.

A snack is a product that is consumed between main meals, that is usually consumed 2 times, namely between breakfast and meals lunch and between lunch and dinner. Interlude is very popular with children and adults alike.

A common requirement for intermittent foods is the RDA of fortified vitamins and minerals processed food products must not exceed the 20 % limit of presentation [8] From the analysis of Pempek Green the presentation contains essential amino acids <20%

RDA. Therefore, Pempek Green can be categorized as a snack.

Likewise with minerals, protein. Fiber, carbohydrates and energy contain nutritional content of <20%. This means that Pempek Green can be categorized as a snack.

IV. CONCLUSIONS

1. In each dish Pempek Green Per serving / cut Pempek Green (30g) has a Protein, Iron, Calcium, Magnesium, Fiber, Carbohydrate and Total Nutrient Nutrient Content in accordance with the RDA (<20) of the presentation as a snack.
2. In each serving Pempek Green has a complete Amino Acid that is complete and can meet the needs of the essential Amino Acid with an RDA <20% as a snack.

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