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Daily Food Content Test for Fifth Semester Students of Pgsd Uhamka

Erwin[1]

[1]Program Studi Pendidikan Guru Sekolah Dasar, University of Muhammadiyah Prof. DR. HAMKA
Jalan Tanah Merdeka No 6 Kampus FKIP UHAMKA Pasar Rebo, Jakart Timur
*Correspondence email: erwin.mycota@gmail.com

ABSTRACT

Research on the detection of daily food ingredients consumed by semester V PGSD UHAMKA students has been carried out. Retrieval of sample data trial. This study aims to identify daily foodstuffs consumed by students containing starch, fat and protein. Random sampling was taken at PGSD fifth semester students. Experimental processing techniques by testing various reagent solutions, using Lugol reagents to test the starch content, biuret reagents to test protein content, and oil paper to test fat content. From this research it has been identified. Carbohydrate test using Lugol reagents obtained data that is bananas, rice, biscuits, wheat flour and potatoes, this is evident because of a change in color from the original color of food ingredients to black or purplish blue, while apples, boiled eggs, white tofu, margarine, and sugar does not contain carbohydrates. Fat test obtained data of foodstuffs that were tested and left oil stains on brown oil paper that is peanuts, coconut milk, milk, oil, margarine, and hazelnut this happens because when food is smoothed and placed on brown paper will leave traces of transparent stains and proven food ingredients contain fat, while celery, carrots, corn, cassava, papaya, and water do not leave traces of oil stains. Protein test using Biuret reagents obtained data acquisition of types of food ingredients bread, tempeh, chicken meat, milk, and boiled eggs proved to contain protein this can be seen from changes in food color that had previously been mashed and then dropped by reagan biuret will change color from the color according to the color of food becomes purplish. While the types of food ingredients, sugar and wheat flour do not contain protein, this can be seen when the food is dropped by a biuret reagent there is no change in color of the food. From the results of the research data it can be concluded that some of the food ingredients used by students do not all contain carbohydrates, fats and proteins only a few foods that contain carbohydrates, fats, and proteins.

Keywords: food, fat, protein, reagents, starch

INTRODUCTION

There are many kinds of food that you eat everyday. Food contains different vitamins. The Functions of those vitamins are also different. To stay alive and to be able to do many activities, the humans needs foods. The foods that enter into the body will be oxidized to produce energy. The foods also has some other functions, those are; for the growing and the formation of the body, to replace broken body cells, to maintain body metabolism, to defend the body against many kinds of diseases, and to keep the body homeostatis.

The Foods that you eat must be nutritious. What is meant by nutritious is that the food contains some base goods, those are; carbohydrates, fat, protein, vitamins, minerals and water. The food containing all of the starting material in a balanced number is called balanced food. Beside nutritious, food has to be easy to digest and hygienic. The hygienic foods are the foods that do not have any disease and dangerous substance for the body in it. (Campbell et.al, 2010).

As a mentioned, the foods that you eat must contain some base goods, those are carbohydrates, fats, proteins, vitamins, minerals, and water. Crbohydrates are compounding arraged by carbon elements (C), hydrogen(H), and oxygen(O). The body needs carbohydrate as the main source of energy (every 1 gram of carbohydrate contains 4,1 calories); to keep the acid base balance of the body, as a substance to form cell structures, and as a substance to form organic compounds like fat and protein.

Carbohydrates are categorized into monosaccharide, disaccharides, and polysaccharides. Monosaccharide is a simple compound of carbohydrate that is composed of a group of sugar, e.g. glucose, galactose, and fructose. Glucose can be found in fruits like grape, onion, and honey. Galactose can be found in milk sugar. Fructose is the sweetes sugar anf normally can be found in fruits and honey. Disaccahride is a carbohydrate is a carbohydrate compounding with two clusters of sugar. Maltose, lactose and sucrose are examples of the most general of disaccharide. Two molecules of glucose from maltose, glucose and galactose molecules from lactose, while glucose and fructose molecules from sucrose. Sucrose can be found in sugar cane, banana, sweet fruits and certain tubers. Maltose can be found in millet's sprout. Lactose can be found in mammal's milk including mother's milk. Polysaccahride is compounding of carbohydrate that is arraged of many simple sugar molecules.e.g glycogen, amylum and cellulose.

Fat is compounding arraged from C, H, and O substance. Fat cannot be dissolved in the water. But it dissolves in a variet of fat solvent, like alcohol, chloroform, and ether. As carbohydrate, fat also functions as source of energy (1 gram of fat produce 9,3 calorie of energy). Even though produce the biggest energy, fat is not main energy producer for it is kept as back up energy. The other functions of fat, that is as vitamins A, D, E, K solvent; as protector of organs of body, such as heart, kidneys, and flank. Fat also functions as substance to form cell membrane, preventing losing body heat when the weather is cold so that body temperature is kept balance.

Based on the soure, fat is divided into fat derived from plants, and fat derived from animals. From plants for example coconut milk, coconut oils, nuts, and avocado. The examples of fat derived from animals are meat, eggs, milk, butter, fatty portion of meat, and cheese. In the body, fat is sundered and absorbed in the form of fatty aid and glycerol. Fatty acid divided into unsatured fasty acid and saturated fatty acid. Saturated fatty acid organized as liquid and normally derived from the plants. Satured fatty acid organized as solid and can be found in the brain, liver and meat. (Ngili, 2009).

Protein is arraged from C, H, O and N (Nitrogen) substance. Some kinds of protein also contain S (Sulphur), and P(Phosphor). Protein has some important functions, such as source of energy (1 gr protein produces 4,1 calorie); as substance to form hormone, enzyme, antibody, and chromosome. Besides, protein als functions as substance to form new cells and as solution of prop (buffer system). Solution of prop functions to defens the balance of acid and base of the body fluids.

Inside the body, protein is absorbed in the form of amino acid. Amino acids are divided into the essential amino acids and non essential acids. The essential amino acid id the one that the body needs, however the body cannot synthesize it, therefore the amino acids must be supplied outside the body through food. The examples of the essential amino acids are arginine, histidine, isloleucin, leusin, methionine, phenyalanine, threonine, trypophan, and valine. Whilst, non essential amino acid is the one that can be synthesized by the body, for example alanine, arginine, asparagine, aspartatic acid, cysteine, glycine, and glutamic acid, glutamine, proline, serine, and tyrosine. There are two kinds of protin, protein derived from plants and the one derived from animals. Protein derivied from plants can be fpund in beans and its product especially soybean. Protein derived from animals can be found in meat, eggs, milik and fish.

To have a healthy body and a normal body, every person needs food substances such as carbohydrates, protein, fat, vitamins, minerals, and water. Food is an ingredient, usually derived from animals or plants, eaten by living things to provide energy and nutrition. Every living thing needs food. Without food, living things will find it difficult to do their daily activities. Food can help us get energy, help the body and brain growth. Eating nutritious foods will help our growth, both brain and body. Each food has a different nutritional content. Protein, carbohydrates, fats, etc. are examples of the nutrients we will get from food.

Carbohydrates or starch is a compound consisting of elements of carbon, hydrogen, and oxygen. To find out starch in food can be tested by giving iodine solution. Food that is doped with iodine solution will turn blue-purple. To find out the characteristics of food sources that contain fat can be done as follows. For example cooking oil, if the material is held or touched it will feel slippery and if it is placed on newspaper, then the paper will be seen leaving traces of oil on the paper. Protein is an important food for growth, development and replacing damaged body cells. If the food ingredients are dropped with biuret, the food will turn purple. The purpose of this study is to identify daily food items that are usually consumed that contain carbohydrates, fats and proteins.

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RESEARCH METHOD

This research was carried out in the Integrated Science Laboratory PGSD UHAMKA, conducted in November 2018. The food tests carried out were the carbohydrate test, fat test and protein test. The tools used include: pipette, drip plate, knife, brown paper cover, flashlight, label paper, pen. Ingredients used include: bananas, apples, rice, boiled eggs, white tofu, margarine, biscuits, flour, granulated sugar, potatoes, hazelnut, carrots, celery, corn kernels, boiled cassava, peanuts, papaya, coconut milk, cooking oil milk, water, bread, tempe. Food test solutions used were lugol reagents, greaseproof, and biuret reagents.

Carbohydrate Test work procedures as follows:

Pounded each food material tested. Foodstuffs in the form of flour and sugar are given a small amount of water to become a concentrated liquid, put foodstuffs to be tested on a drip plate, lugol drops on foodstuffs to be tested two to three drops, observe what happens and note the observations on the observation sheet.

Fat Test Work Procedure as follows:

Apply water on one brown paper, oil on the other brown paper, left the two papers for about five minutes. After that checked both with facing the light. Observe and note the state of the paper surface. Taken ten pieces of the same brown paper. Give the number and name of the type of food material tested in the form of hazelnut, margarine, celery, carrots, corn kernels, cassava, beans, papaya, coconut milk and milk. Mashed hazelnut, rubbed on brown paper about ten times and cleaned of the remaining hazelnut, then left for about five minutes. While waiting for time, something similar was done for the other nine ingredients. Melt margarine on a spoon using heat from the flame of the candle. Put margarine on brown paper. Allow about 5 minutes. After 5 minutes, observe the brown paper one by one. Use the lamp or flashlight kerarah former strokes of food ingredients tested. Which paper leaves oil stains. Observation results are recorded in a table on a worksheet.

Protein Test Working Procedure as follows:

Pound each food material to be tested, and dissolve the sugar and flour with water so that it becomes a concentrated liquid. Arranged food ingredients to be tested on a drip plate, then name the food ingredients using a label. Give two drops of biuret for each food item to be tested. Observe and record the color changes that occur in the worksheet that is already available

RESULTS AND DISCUSSION

Based on observations in the food test for starch using the lugol reagent the results are listed in the table below.

NO.	FOOD MATERIAL	COLOUR		DESCRIPTION
		BEFORE GIVEN LUGOL	AFTER GIVEN LUGOL	
1.	Banana	same as the original color	+	✓✓✓✓✓
2.	Apple	same as the original color	+	✓✓✓✓
3.	Rice	same as the original color	+	✓✓✓✓✓
4.	Boiled eggs (white)	same as the original color	-	✓✓
5.	White tofu	same as the original color	-	✓✓
6.	Margarine	same as the original color	-	✓
7.	Biscuit	same as the original color	+	✓✓✓✓✓
8.	Wheat flour	same as the original color	+	✓✓✓

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9.	Sugar	same as the original color	-	✓✓
10.	Potato	same as the original color	+	✓✓✓✓✓
11.	Boiled chickens	same as the original color	+	✓✓✓
12.	Boiled Corns	same as the original color	-	✓✓✓✓

Based on observations in the food test for fat using brown paper or greaseproof paper, the results are listed in the table below.

NO.	TESTED MATERIAL	LEAVING USED OIL STAINS		DESCRIPTIONS
		Yes	No	
1.	Celery	√		✓✓✓✓
2.	Carrot		√	Doesn't contain flat
3.	Corn	√		✓✓✓✓
4.	Cassava	√		✓✓✓✓
5.	Peanut		√	Doesn't contain flat
6.	Papaya		√	Doesn't contain flat
7.	Coconut milk	√		✓✓✓✓✓
8.	Milk powder	√		✓✓
9.	Water		√	Doesn't contain flat
10.	Cooking oil	√		✓✓✓✓✓
11.	Margarine	√		✓✓✓✓
12.	Candlenut	√		✓✓✓✓
13.	Tempe	√		✓✓

Based on observations on food tests for protein using biuret reagents, the results are listed in the table below.

NO.	TESTED MATERIAL	COLOUR		DESCRIPTIONS
		BEFORE GIVEN BIURET	AFTER GIVEN BIURET	
1.	Sugar	same as the original color	-	Doesn't contain protein
2.	Bread	same as the original color	+	✓✓
3.	Tempeh	same as the original color	+	✓✓
4.	Chicken	same as the original color	+	✓✓✓✓✓
5.	Wheat flour	same as the original color	-	Doesn't contain protein
6.	Milk	same as the original color	+	✓✓✓✓✓
7.	Boiled eggs (white)	same as the original color	+	✓✓✓✓✓
8.	Biscuit	same as the original color	-	✓✓

Descriptions:
✓✓✓✓✓ : Very high
✓✓✓✓ : High
✓✓✓ : Medium

✓✓ : Low
✓ : Very low

Carbohydrate Test

Through these observations it is proven that the food ingredients prepared have various carbohydrate contents. After dropping by lugol these food ingredients change color with different color thickness. For those who have a very high carbohydrate content are bananas, rice, biscuits, and potatoes. With high carbohydrate content, namely apples and boiled corn. Which has a moderate carbohydrate content, boiled chicken and flour. For kabohhid with a low content of boiled eggs, white tofu, and sugar. And that has a very low carbohydrate content is margarine.

Fat Test

Through these observations can prove that the food ingredients carried contain fat. It is known after applying to oil paper that it can be seen that if the spots are left transparent, it indicates that the material contains food. Each food ingredient has a different fat content. Very high fat content, namely coconut milk and cooking oil. For those who have high fat content, namely cassava, peanuts, margarine and hazelnut. Milk powder and tempeh have a low fat content. And besides it has no fat content.

Protein Test

Through observations, after dropping biuret food ingredients will turn purple. Boiled chicken meat, milk powder and boiled eggs have a very high protein content. For bread, tempeh and biscuit have a low content. And for other ingredients do not contain protein.

CONCLUSIONS

Foodstuffs brought by the 5th semester students of PGD Uhamka. Foods that contain carbohydrates are bananas, rice, biscuits, flour, and potatoes. Ingredients that contain fat are peanuts, coconut milk, milk, oil, margarine and hazelnut. Meanwhile, food ingredients that contain protein are bread, tempeh, chicken meat, milk, and boiled eggs. The rest does not contain carbohydrates, fats and proteins.

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