FICUS CARICA L. AS COMPLEMENTARY FEEDING AFTER SIX MONTHS OF CHILD AGE

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(Received on Date: 10th May 2017 Date of Acceptance: 21st July 2017)

ABSTRACT

Complementary feeding at the right time will be very beneficial for the fulfillment nutrition and growth of the baby, Because after 6 months, breastfeeding alone can not support the baby's nutritional needs (macronutrients and micronutrients). It is important to understand the type of food as well as how much and how often complementary feeding is given [1].The aim of this research is to analyze the nutritional content of *Ficus carica L*. compare wwith standard'srrice porridge from WHO. The results showed that half-ripe's *Ficus carica L*. have highest nutrient content. compare with standard'srice porridge from WHO.

Keyword: Complementary feeding, *Ficuscarica* L, WHO standard

No: of Tables : 4 **No:of References:5**

INTRODUCTION

Exclusive breastfeeding is giving only breast milk to an infant from birth up to six months of age, with the exception of medications and vitamins. For the first six months of life, breast milk alone is the ideal nourishment to meet the nutritional demand of the growing child [2].After 6 months, breastfeeding alone cannot support the baby's nutritional needs (macronutrient and micronutrient) [1].In addition, the substances contained in the complementary feeding should match (what kind of food and how much and how often it's given) [3]. Initiating complementary feeding at the right time will be very beneficial for the fulfillment of infant needs and growth.Based on the results of research by Prof. J. A Vinson from Scranton University of the United States has made a study and proved that *Ficus carica L*. contains high efficacy when compared with other fruits. It does not contain salt, fat, and cholesterol, but contains higher potassium, fiber and iron[4].

AIMS AND OBJECTIVES:

The aim of this research is to analyze the nutritional content of *Ficuscarica L*. compare with standard's rice porridge from WHO

MATERIALS &METHODS:

Study design:
This ia a Descriptive Research's method. Where will be analyze the nutritional content of *Ficuscarica L*. compare with standard's rice porridge from WHO

Spesimen collection:

The data was collected at Akafarma Laboratory SunanGiriPonorogo, East Java, Indonesia.

Equipments for analysis:

Making extract a sample of *Ficuscarica L*. is divided into 3 samples, A sample for Ripe, B sample for half-ripe, and C sample for unripe.

Tin Fruit Testing
Carbohydrate test Using the *Luff-Schrool* method, which the reduction sugar plus the excessive crystalline cupric-sulfate reagent will result in a partial reduction reaction of the coupe.

The protein test

Using the *Kjeldhal* method. With titration process

Test moisture content

Using *Thermogravimetry* Method

Principle: Evaporate water from the material by heating to constant weight, until all the water has evaporated.
Weaknesses: volatile substances also vaporize and count as water.

Iron Test

Using the method of Permanganometry

Zinc Test (Zn)

UsingComplexometric method

Calcium Test (Ca)

UsingComplexometric method

Chloride Test (Cl)

UsingQualitative method

Vitamin B6 Test
Using Spektrofotometry method

Vitamin C Test

Using Iodimetry method

Fat Test
Using Soxhletasi method

Magnesium Test (Mg)
Using Complexometric method

RESULT & DISCUSSION:

Table 1. Sample description

No	Sample	Form	Color	Smell	Taste
1	Sample A	Ripe	Yellow	Typical fruit	Sweet
2	Sample B	Half-ripe	Yellowish green	Typical fruit	Sour
3	Sample C	Unripe	Green	Typical fruit	Sour

Table 2. Content analysis

Test Analysis	Unit	Sample contain		
		A	B	C
Carbohydrate	%	61, 45	53,16	12,15
Fat		-	54,26	42,84
Vitamin C	%	0,0346	0,0511	0,0336
	Ppm	34,6	51,1	33,6
Zinc (Zn)	%	0,70	1,23	0,47
Calcium (Ca)	%	20,687	21,824	17,347
Magnesium (Mg)	%	0,459	0,3859	0,2077
Chloride (Cl)		-	-	-
Iron (Fe)	%	1,287	0,0322	0,0092
Vitamin B6	%	9,16	8,72	9,00

Table 3. Protein and Water containt

No	Sampel	Test analysis	Units	Result
1	A, B and C	Protein	%	1
2	A, B and C	Water content	%	79,11

Discussion

From the results obtained, then converted into 40 grams ie the dose for infants aged 6-11 months, 50 grams of doses for infants aged 12-23 months and 60 grams of doses for babies aged 23 months and above, shown in the table below.

Table 4. *Ficuscarica L.*compare with standard'srice porridge from WHO

NO	CONTAIN	SAMPLE	The standard weight of the sample per-content (WHO)	LEVELS / %	WEIGHT / gr		
					40	50	60
1	CARBOHYDRATES	A	41.933	61.45	2,345	3,664	5,276
		B	15.296	53.16	5,561	8,689	12,512
		C	13.036	12.15	1,491	2,330	3,355
2	FAT	A	-	-	-	-	-
		B	9.3599	54.26	9,275	14,493	20,869
		C	3.1740	42.84	21,595	33,743	48,590
3	VITAMIN C	A	41.933	0.0346	1.320	2.063	2.970
		B	15.296	0.0511	5.345	8.352	12.027
		C	13.036	0.0336	4.124	6.444	9.279
4	ZINC (Zn)	A	41.933	0.70	26.709	41.733	60.096
		B	15.296	1.23	128.661	201.033	289.487
		C	13.036	0.47	57.686	90.135	129.794
5	CALCIUM (Ca)	A	8.4362	20.687	3,923	6,130	8,828
		B	7.3612	21.824	4,744	7,412	10,673
		C	10.514	17.347	2,640	4,125	5,940
6	MAGNESIUM (Mg)	A	8.4362	0.4590	87.053	136.021	195.870
		B	7.3612	0.3859	83.878	131.059	188.725
		C	10.514	0.2077	31.607	49.387	71.117
7	CHLORIDE (Cl)	A	-	-	-	-	-
		B	-	-	-	-	-
		C	-	-	-	-	-
8	IRON (Fe)	A	8.4362	-	-	-	-
		B	7.3612	0.0322	6.999	10.936	15.747
		C	10.514	0.0092	1.400	2.188	3.150
9	VITAMIN B6	A	0.401	9.16	36,549	57,107	82,234
		B	0.404	8.72	34,535	53,960	77,703
		C	0.407	9.00	35,381	55,283	79,607

Water

Water is very important; lack of water can result in death. Relatife water content in babies is higher (75-80% of body weight) than the adult (55-60%). The baby's and children's high-grade foods are high in water; Most of the solid foods in a child's diet contain 70% water [5].While water in 100 gr of fresh *Ficuscarica L*is 74%, which means that is enough standard of water in solid food of children that is 70%.

Carbohydrate energy

Carbohydrates are the most accessible source of energy and are important to the body. The need for carbohydrates in infants aged 6-11 months with a dose of 40 grams, infants aged 12-23 months with a dose of 60 grams and infants over 23 months with a dose of 60 grams, based on data from the Indonesian Pediatric Association requires carbohydrates as much as 440 Kcal. [1, 5].Shown in this study,*Ficuscarica L*is sufficient for the required carbohydrates, and the most adequate carbohydrate intake is the *FicuscaricaL* inB samples that are half-ripe samples, ie for 40 grams there are 5,561, 50 grams there are 8.689, 60 grams there are 12,512.

Protein

20% of the proteins in infants are shaped as the body weight. And the necessary requirement for protein intake per day that is for every 40 gram there is 7.5 -11.3 gr, for every 50 gr there is 6-11 gr, and 60 gram there is 6,7-10,6 gram [1].While in all samples have the same protein content that is for 40 grams there are 4, for 50 grams there are 5, for 60 grams there are 6 where the content is quite inadequate intake standard WHO.

Fat

Fat is a metabolic product that forms an integral part of the cellular membrane and is an efficient energy for infants. And is a carrier medium of vitamins A, D, E, K [5].Thefat needed for every 40 grams is 11,7 gr, for 60 gram there is 13,7 and for 50gr there is 12,7 gram [1]And in this study the most meet the nutritional standards in the diet of the complementary feeding is a C sample because for 40 grams there are 21,595, 50 grams there are 33.743 and for 60 grams there are 48,590.

Vitamin

Vitamins that can be assessed here are only vitamins B6 and C, both of which also meet WHO'sstandards. B6 required for 40 grams 0.35-0.50 mg, for 50 grams 0.35mg and 60 grams 0.44 grams. And vitamin C is needed every 40 grams 175-350, for 50 grams 83-167, 60 grams 140-280 gr [1].In the study obtained sample B is the most meet the intake of vitamin B6, for 40 grams there 34,535, for 50 grams there are 55,283, for 60 gram there 77,703. As for vitamin C, for 40 grams 5.345, 50 grams there are 8,352, 60 grams there are 12,027.

Mineral

The minerals tested here are Zinc (Zn), Calcium (Ca), Magnesium (Mg), Clorida (Cl), Iron (Fe).The zinc required for 40 grams is 10-12.5 mg, for 50 there is 6.7 mg,

for 60 there is 8.3 mg. [1].While the research that most meet the needs of the sample B obtained results for 40 grams there are 128,661, for 50 grams there are 201,033, for 60 grams there are 289,487.
Calcium required for 40 grams of dosage is 250-500, for 50 grams 1000-2000, and for a dose of 60 grams 1000-2000 [1].While in the research that most meet the standard requirements of the provision of complementary feeding is a sample B that is for the measure of 40 grams, 4744, for a dose of 50 grams there are 7,412, and for a dose of 60 grams there are 10,673.The magnesium needed in WHO's standard is for 40 grams there are 100-150 mg, for 50 grams 67-100 mg, for 60 grams of 80-120mg [1].While on the results of research that most meet standard needs isa sample A that is for the dose of 40 grams there are 87,053, for the dosage 50 grams 136,021, for the dose of 60 grams 195,870.And sample B also meets the standard requirement with the result for 40 gram dosage is 83,878, for 50gram dosage there are 131,059, and for dose 60 gram 188,725.The chloride in this study could not be tested because the sample did not meet sample test requirements.The iron needed for standard is for a 40 gram dose of 27.5mg, for 50 grams of 11.7mg, and for a dose of 60 grams 714mg [1].While on the results of research that most meet the standard requirements is sample B that is for the 40 gram dose there are 6.999, for the dose of 50 grams there are 10.936, and for 60 grams there are 15.747.From the results of research on nutritional content of *Ficuscarica L*is very meet the standard needs, especially half-ripe samples (B sample), with a dose that has been adjusted with WHO standards.

CONCLUSION:

Nutritional content of *Ficuscarica* L, as the complementary feeding tested in this study are carbohydrate, protein, fat, vitamin B6, vitamin C, mineral calcium, mineral chloride, magnesium minerals, iron mineral, zinc minerals. And they are all contained in the fruits tested by this study.The nutritional content of *Ficuscarica* L is in accordance with the standard of complementary feeding feasibility, especially for sample B.

ACKNOWLEDGMENTS

Research grant funded by Indonesian Directorate General of Higher Education. Ashief Hammam, dr. KusumaLuthfiana, dr. Princess DzuNafi'ah as editor and speaker, thanks to Dr.Anika Candrasari as research supervisor.

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