

KNOWLEDGE AND PRACTICE OF THE USE OF BORAX IN MEATBALLS SELLER AT THE CAMPUS A UNIVERSITY OF MUHAMMADIYAH JAKARTA

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Abstract

Meatballs is a food often consumed by people because it is practical, easily processed and can be served quickly. Meatballs is a food that can be easily damaged because meatballs high in protein, has a high water content, and pH neutral. Borax is the preservative of choice for preserving meatballs for durability, whereas its use in foods is prohibited because it is carcinogenic. In general, sellers do not aware of the dangers of using borax in the food. This study aims to describe the knowledge and the use of borax in meatballs sellers at Campus A the University of Muhammadiyah Jakarta 2015. This study is a qualitative descriptive study design using RAP (rapid assessment procedure). 11 Informants are 11 meatballs seller purposively selected based on adequacy and appropriateness. Triangulation resource and method were conducted to validate data. Data obtain from indepth interview to collect data on knowledge and practice, while laboratory test using reagent kit borax was used to detect borax in meatballs. Analysis is done by comparing the information in a different way, namely, comparing the results of in-depth interviews with test result. The results showed although most of the informants education is very low, as many as one person SD, SMP 6, SMA / STM as many as 3 people, but their knowledge was excellent in answering questions about borax. They know what is borax and what the health consequence of borax if it is eaten. Informants also state that they do not use borax in the meatballs they sold, and this is confirmed with laboratory result. None of meatballs sold by informants at the University of Muhammadiyah Jakarta Campus A contains borax that can harm human health. Nevertheless, it is expected the informant to maintain not to use borax as an additive in meatballs they sold, and continue to enrich themselves with information on the food additive that is allowed and not allowed.

Keywords: borax, knowledge, practice

INTRODUCTION

Synthetic food additive role has increased in line with advances technology in synthetic food additive production¹. One of the synthetic food additive that prohibited to be used as food preservative is borax², because it harm human health. Borax, when it is consumed continuously will cause dizziness, body lazy, depression, delirium, vomiting, diarrhea, cramps, convulsions, coma, and cyanosis kollaps³.

¹Cahyadi. Analysis and Health Aspect of Food Additive. Jakarta: PT. Bumi Aksara; 2006. Pemerintah Republik Indonesia. Peraturan Menteri Kesehatan Republik Indonesia No. 033 tentang Bahan Tambahan Pangan. 2012.

²Pemerintah Republik Indonesia. Peraturan Menteri Kesehatan Republik Indonesia No. 033 tentang Bahan Tambahan Pangan. 2012.

³I.R. Khamid. Effect Borax on Health. Jakarta: Kompas; 2006.

Although borax is prohibited to be used in food, there are many food use it as preservative for durability. One of the food is meatballs. Based on the results of a study of meatballs in the city of Medan on 10 samples of meatballs showed that 80% of the samples tested turned out to contain borax 0.08% - 0.29%⁴. Similar research conducted by Hikmawati⁵ to the meatballs sold at the market in Municipality of Semarang showed that of the 33 samples, 22 (66.66%) positive contain borax and 11 (33.33%) negative. Research conducted by Haq (2014)⁶ on 34 meatballs producer in the Village of South Tangerang, Ciputat found that 29.4% (10 meatballs producer) positive use borax.

Factor influenced meatball seller in using borax are many. One factor is knowledge about borax. Research conducted by Sugiyatmi⁷ in Semarang found that knowledge about danger of borax for health is significantly associated with practice (behavior) of using borax. This study aims to describe the knowledge and behavior of the use of borax in meatballs sellers at Campus A the University of Muhammadiyah Jakarta 2015.

METHODOLOGY

This study was a qualitative descriptive study design⁸ using RAP (rapid assessment procedure)⁹, conducted at the University of Muhammadiyah Jakarta Campus A. Subjects in this study is called the informant. The amount of 11 (eleven) informants are meatballs sellers purposively selected based on adequacy and appropriateness. Criteria of the informants are meatball sellers who sell meatballs in the University of Muhammadiyah Jakarta Campus A and willing to be interviewed.

The interview was conducted on 22-25 April 2015 while the laboratory tests carried out on 29 April 2015. Triangulation resource and method were conducted to validate data. Data obtain from indepth interview to collect data on knowledge and practice, while laboratory test using reagent kit borax was used to detect borax in meatballs.

Informed consent was given to the informant prior interview. The interviews were recorded with the tape recorder, can be done in informants' house and a place that has been approved by the informant. Interviews conducted about 60 minutes or at the time provided by the informant. Samples of meatballs then taken to the laboratory of the Department of Health of South Tangerang to detect borax in meatballs using the test kit borax.

Data processing is the process of simplification of the data in a form that more easily to be analyzed. In this study, the data processing was done by developing a transcript and matrix of data. Theme analysis was used to describe knowledge and practice about borax and then with borax test result.

RESULT

Results of this research were classified into 4 (four) main: informant knowledge of food additives, informant knowledge of borax, informant behavior in the use of borax in meatballs and laboratory borax test results.

Informant Characteristic collected from University of Muhammadiyah Jakarta is a private university located in Cirendeu South Tangerang. It has 7 (seven) faculties namely Religion, Law, Education,

⁴ Panjaitan. Examination of Borax content in Meatballs at Medan Municipality. University of North Sumatera; 2010.

⁵ Hikmawati. Study of Borax in Meatballs Sold at the Market in Semarang City. Diponegoro University, Semarang; 2004

⁶ Haq MN. Analysis of Risk Factors Pollution Toxic Materials Borax on the meatballs in the Ciputat Village. Universitas Islam Negeri Syarif Hidayatullah; 2014.

⁷ Sri Sugiyatmi. Makanan Jajanan Tradisional yang Dijual di Pasar-pasar Kota Semarang Tahun 2006. Diponegoro University, Semarang; 2006.

⁸ Moleong LJ. Qualitative Research Methodology. Bandung: PT. Remaja Rosdakarya; 2013

⁹ Scrimshaw SCM, Elena Hurtado. Rapid Assessment Procedures (RAP) for Nutrition and Primary Health Care. California: UCLA Latin American Center Publications; 1987

Economic, Agriculture, Social and Political Science, and faculty of Medicine and Health. Each faculty have a canteen that sells a wide variety of snack foods, such as meatballs.

Eleven informants of this study are meatball sellers located at canteen in 7 (seven) faculties at University of Muhammadiyah Jakarta Campus A and and peddlers who sell meatballs at surrounding campus. From 11 informants there were 5 informants ages above 40 years and the others below 40 years old. Almost all informants were male (8 of 11 informants), while 7 of them have education below senior high school (Table 1).

Tabel 1. Informan Characteristic

No	Informant	Characteristic		
		Age (yr)	Sex	Education
1	Informant 01	56	Female	SMA
2	Informant 02	34	Male	SMP
3	Informant 03	42	Male	SMP
4	Informant 04	42	Female	SMP
5	Informant 05	23	Male	SMA
6	Informant 06	45	Male	SMP
7	Informant 07	27	Male	SMP
8	Informant 08	35	Female	S1 Akuntansi
9	Informant 09	39	Male	STM
10	Informant 10	45	Male	SD
11	Informant 11	26	Male	SMP

Knowledge of food additives asked to the informant include questions on understanding food additives, intended use of the food additive, kinds of food additives, terms of use of food additives and why there are food additives that prohibited for consumption. Results of research on the definition of food additives found most informants said that the definition of food additives, it is a flavor enhancer. Here's the opinion of one informant: *"Foodis additives in foods such as in meatballs is Royco. If the original seasoning ie fried onion, garlic, pepper, so plus roiko and msg."* (2)

But not all of the informants answered that way. One informant answered as follows:

"The materials for making the food better. Materials that are not harmful to health." (8)

Questions about the intended use of food additives, is answered by most informants that the purpose of the use of food additives is to add flavor. The following statement of one of the informants:

"Let the food more palatable, savory, savory, nice color and durable." (5)

Questions about the kinds of food additives can not be answered by most informants. The following statement of one of the informants of the types of food additives:

"I still have not been wearing so did not know, at that meatball made tetelan let me add that a lot of good. It is also the additional material." (11)

There is also the informant who consider kitchen spices as the types of food additives. The following statement of one of the informants.

"Types of food additive, Yes onion, spices, sugar, salt, pepper, coriander pepper." (1)

And there were informants who consider flavorings are also the kinds of food additives. The following statement of one of the informants:

"The types of food additives that there roiko, there is also msg (sasa)." (2)

Informants knowledge about the terms of use of food additives are vary, Most informants said none of the conditions. The following statement of one of the informants:

" there are no a prerequisite. In accordance with the forecasts it feels that is salty or sweet." (5)

There is also the informant who states that the conditions of use are food additives which do not harm human health. The following statement of the informant:

"The requirements are not making adiptif substances, not addictive, should not use cannabis, should not use clothing or textile dyes. Which is of special importance for the food. That meet health. It means there are no side effects to the body. "(8)

Questions about why there are food additives that are prohibited for consumption, most informants stated the ingredients of food additive are harmful to health. The following statement of one of the informants:

"Materials containing the disease, can damage the brain." (4)

This theme will describe the informant knowledge of borax. This theme is divided by eight (8) sub themes, namely the understanding of borax, informant opinions about the addition of borax in meatballs, should add borax in making meatballs, the function of borax in making meatballs, the danger of borax, foods that normally uses borax as additional materials, regulations of borax in Indonesia and natural materials substitute borax. Most informants answered that sense it is a preservative borax corpse. Here's the opinion of one informant:

"Corpse Preservatives used in hospitals." (5)

But not all respondents answered that way. The following statement of the informant:

"A kind of food additive food let it last longer or favor." (10 and 11).

Most informants answer is not good. The following statement of one of the informants:

"That clearly does not good, if it is good, then why the government banned to use it, so it become media consumption because that is prohibited.. But there are some traders use it, while remaining durable, it will not get loss. "(11)

There is also another opinion informants. The following statement of the informant:

"As I told people, make meatballs harder, chewy." (4)

Most informants answered unnecessary to add borax in making meatballs. The following statement of one of the informants:

"No need. First detrimental to health, second borax is not included in the meatball seasonings. So there is no need. "(2)

There is also another opinion. The following statement of the informant.

"I think it depends. Because my family consumes so for me not necessary. ... I'm afraid that my family actually taxable. Although not directly after a long time become sick. "(10)

Function of borax in making meatballs

Most informants answered the function of borax in making meatballs was for preservatives. The following statement of one of the informants:

"The meatballs were so chewy, colors so bright, the meatballs become hard and it won't be stale when it stored for a week." (3)

There is also another opinion. The following statement of one of the informants.

"I do not use it, so I do not know." (6)

Danger of borax, Most informants answered the danger of borax is causing damage to internal organs. The following statement of one of the informants:

"If I read anyway, danger of borax is when it piles up over the years can cause kidney, can cause cancer but for a long time and taken continuously." (8)

Foods that typically use borax as a food additive, Most informants answered meatballs, tofu and noodles typically use borax as a food additive. The following statement of one of the informants:

"A lot of that is noodles, meatballs, fresh fish, chicken, sometimes porridge, tofu (10)

Regulation of borax in Indonesia, most informants answered that borax is banned to use in food. The following statement of one of the informants:

"Not to be used in food. Because borax is used as corpse preservative. "(5)

There is also the informant did not know anything about the regulation of borax in Indonesia. The following statement of one of the informants.

"I know it's borax preservative for the bodies. Never heard of the rules."(4)

Natural materials substitute borax, most informants answered no natural substitute for borax. The following statement of one of the informants:

"I think there is no for meatballs. Which naturally was not replaced but store it in the refrigerator or freezer for durability. This way makes food tastes are different"(10)

There is also one informant who said that there is a natural material substitute borax. The following statement of the informant:

"There is a natural replacement materials. In television, it is said said that natural material was citosan from shrimp shells."(8).

Theme of behavior of informants in using borax in meatballs divided into two sub-themes: food additives used in meatballs and where informants get the meatballs.

Most informants answered that food additive used in their meatballs was monosodium glutamat (msg) and royco. The following statement of one of the informants:

"Sasa and royco, while additional material preservative borax up to want to use it or not." (11)

Most informants answered that they get meatballs by produce themselves, but there are also some informants get meatballs by buying from others. The following statement of one informant who get a meatball from others:

"Buy from people. I know how he made it. It seems he use borax, cause the meatballs was hard. And in my opinion he used borax. And I still buy, what can we do. There is no choice anymore."(3)

Result of the laboratory test to detect borax in meatballs sold by informants were negative. It means none of the meatballs sold at University of Muhammadiyah Jakarta content borax (table 2).

Tabel 2. Result of Borax Test

N o	Informant	Color of examine paper	Color of standar paper	Result
1	01	Yellow	Yellow	Negatif
2	02	Yellow	Yellow	Negatif
3	03	Yellow	Yellow	Negatif
4	04	Yellow	Yellow	Negatif
5	05	Yellow	Yellow	Negatif
6	06	Yellow	Yellow	Negatif
7	07	Yellow	Yellow	Negatif
8	08	Yellow	Yellow	Negatif
9	09	Yellow	Yellow	Negatif
10	10	Yellow	Yellow	Negatif
	11	Yellow	Yellow	Negatif

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DISCUSSION

The majority of informants answer well regarding food additives. It means that informants have good knowledge about food additive. Although there are informants who still do not understand about food additives. It is because they rarely seek information about food additives.

This is in accordance with the opinion of Notoatmodjo¹⁰ which states that knowledge is the result of the know and this occurred after people perform sensing on a specific object. Most human knowledge is obtained from through the eyes and ears. Informants who do not understand about food additives due to the lack of knowledge that can be acquired through a variety of sources such as television, outreach activities and other sources of information.

Most informants answer well the question of borax. Those who could answer it correctly, have low education. Based on the informants characteristics, the data showed that the informant who sells meatballs at the University of Muhammadiyah Jakarta Campus A has a low education. Most of them graduated from junior high school, even there are informants graduated from elementary school.

Because education is low, the knowlegde they have limited come from their experiences and habits that they do everyday and acquired hereditary. According Notoatmodjo¹⁰ knowledge can be influenced by education. Education in general can be attributed to the level of knowledge. Low education levels are assumed to have links with a low level of knowledge, including knowledge of borax. This statement supported by Handoko research¹¹ that the relatively low level of education was assumed associated with lower knowledge about how to make meatballs that are safe for health.

But with the development of information technology, knowledge about the dangers of borax does not have to be obtained through formal education. The informant claimed to get information about the dangers of borax via electronic media alone so that they understand the risks that they get when using borax. This is supported by Habsah research¹² which states that the trader that have good tend to often watch on television shows around the borax so that the knowledge he has about the borax can be quite adequate. This proves that even though they do not have a high level of education, but they have a fairly good knowledge of the borax.

The results of this study indicate that none meatballs meatballs environment sold by seller at University of Muhammadiyah Jakarta campus A contains borax that can harm human health. The use of borax as a food additive is actually not allowed. It is already listed on PERMENKES No. 33 of 2012² which states that borax is a food additive that is prohibited for use in food products. However, borax was discovered in a number of areas as a preservative. As found by the Haq⁶ in her research that discovered borax content in ten (10) samples of 34 (thirty four) sample meatballs were found in the village Ciputat.

This study does not in line with a previous study in 2014 which of the meatballs samples taken from eleven meatballs sellers at the University of Muhammadiyah Jakarta Campus A which is 5 of 11 sample contain borax. This shows there is a good improvement of informants in practice the use of borax..

CONCLUSION

In general, knowledge about Food Additives and borax majority of informants was excellent in answering questions. But there are still informants who do not know about definition of food additives, types of food additives, definition of borax, regulation of borax and natural materials substitute borax.

The majority of the informants make their own meatballs. They claimed do not use borax in their meatballs..Based on laboratory test of meatballs were taken from 11 (eleven) informants, none of the meatballs containing borax.

The informants (meatballs traders) within the University of Muhammadiyah Jakarta are expected to remain not using borax to preserve their meatballs. To cope with the meatballs were not sold and become stale in the next day, it is recommended to produce the meatballs in the amount of one day sold. Further

¹⁰Sukidjo Notoatmodjo. Education and Health Behavior. Jakarta: Rineka Cipta; 2003.

¹¹Handoko et. a. Aspects of the Social Environment and the Potential Behavior of the Addition of Borax in the Production Process of Beef Meatballs in Pekanbaru City. J Ilmu Lingkungan. 2010;2(4).

¹²Habsah. Description of Knowledge of Wet Noodle Trader on the Use of Borax and Formalin in Wet Noodle at Canteens of University X Depok 2012. University of Indonesia; 2012.

research is needed about the content test of borax in meatballs with quantitative methods and For students who consume meatballs, it is important to choose and check carefully whether the meatballs contain borax..

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