



Analysis of Borax Content in Meatballs that are Sold in The Karang Jangu Environment

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Abstract

Meatballs are one of the foods that are popular with various groups in Indonesia. Borax is a prohibited substance used as a food additive. Borax is commonly used in soldering, glassmaking, porcelain and wood preservatives. The use of borax in crackers aims to increase the elasticity of the meatballs. The purpose of this study was to detect the presence of borax in meatball samples. This type of research is descriptive, the method used is a qualitative method. Meatball samples were taken from meatball traders who sold them in the Karang Jangu area, Meatball samples were taken from meatball traders who sold them in the Karang Jangu area and examined using tumeric paper, tumeric paper (curcumin paper) is filter paper that is dipped in turmeric solution and dried, after that the sample that has been diluted and homogenized is dripped onto the tumeric paper. Based on the results of the study of the five meatball samples that were examined qualitatively using tumeric paper, negative results were obtained or did not contain borax, this was made clear by the absence of a color change on the tumeric paper. It is hoped that future researchers can use other methods. which can detect the presence and levels of borax in meatballs.

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INTRODUCTION

Food safety in Indonesia be one of the problems need more attention, both inside surveillance and initial identification of these foodstuffs. Society may experience several harmful effects to the body due consuming less food healthy and nutritious. Food is said safe if free from biological hazard, chemical and physical hazards originating from foreign bodies (Azmi et al. 2021).

The majority of society or Merchant Adds Ingredients Food Additive (BTP) in food to change its nature and shape. Some of these BTP are nutrient dense, while others don't. During production, processing, maintenance, packaging, storage, or transportation, BTP is usually added to food for technological reasons. The goal is to influence color, shape, taste and texture food, either in person or indirectly, as well as preserving it periodically (Milehman & Napitupulu, 2020). Use of additive food and non-food is still a lot real society abuse it. It is shown with the widespread use of materials preservatives that shouldn't be used in food. For example formalin and borax, can no longer used as an additive Food (BTP) on food, however Some people stay use them (Berliana et al. 2021).

Food additives used in food production processes generally have to use FDA approved food additive Codex Alimentarius. Regulations regarding additives permitted and prohibited foods

described in the Codex Alimentarius along with the ADI (Acceptable Daily Intake) value of each – each food additive. Formalin and Borax are some of the prohibited ingredients to add in foodstuffs, but this ingredient is still common used by rogue manufacturers in producing processed food. Borax and formalin are commonly used as a preservative, and the price is cheap to make Rogue manufacturers still use this compound.(Birang et al 2018)

Meat is one such food popular with consumers, the meat has a savory taste and good nutritional content. Meat can be processed into processed foods such as meatballs and sausages. However, meat has a water activity content (Aw) high so it is very easy to be contaminated by microorganisms. One step to avoid contamination is by using preservatives, such as sodium benzoate, which is widely used. In Indonesia, there are still manufacturers who use of prohibited preservatives such as borax to preserve processed meat food.(Juwita et al 2021)

Food Additives explained that one of the food additives whose use is prohibited is borax and its compounds (Lestari et al,2021). Food additives (BTP), especially preservatives, are becoming increasingly important in line with technological advances in the production of synthetic food additives. Food additives (additives) are intended for several functions such as preservatives used to increase the useful life of food products and antioxidants used to protect food products against oxidation which can cause food to become rancid (Male et al,2020). Meatballs are one of the snacks that are very popular with the community, more and more meatball fans, the product is growing, both in type and variety. The large number of meatball traders, both large and small scale, will lead to business competition that is sometimes "unhealthy". However, you need to be careful when choosing ready-to-eat meatballs because there are usually additives or artificial ingredients used to thicken and preserve meatballs, for example borax, formalin and MSG (mono sodium gultamate), which are very harmful to our bodies (Birang et al 2018)

Borax, non-food preservatives, used to improve texture food and make it easier chewed, and the price is cheaper than other non-food preservatives which is not harmful to health (Misbah et al. 2017). Nor does the general public aware of the negative effects of use borax as an additive food; consequently, many merchants keep putting borax in food for the purpose of making it more supple, more attractive, and more durable (Birang et al 2018)

Regulation no. 1 issued by the Ministr RI Health 722/MenKes/per/IX/88 Borax is a additive prohibited foods (Fitri et al. 2018). One of the food sources often added non-additives food such as borax is dumplings. Meatball is basically processed cow and flour made in this way steamed and served with various variations in terms of food ingredients other accompaniments such as spices, onions fried and the sauce used (Berliana et al. 2021).

Borax is a crystalline powder soft textured and contains boron. White borax powder or transparent, easily soluble in water has no fragrance (Berliana et al. 2021)..Borax will harm the body by destroying the ability of the brain, heart, and kidneys to function normally if often consumed .According to Nurlaili (2021) borax if being in the body for a long time then it will continue to grow and accumulate and will have an effect side effects such as vomiting, dizziness, diarrhea, nausea, convulsions and coma.

According to Government Regulation no. 86 of 2019 food safety is a condition and effort that necessary to prevent food from possible biological, chemical and other contamination disturb, harm, and endanger human health and do not conflict with religion, belief, and culture of society so that it is safe for consumption. The processing of a food is inseparable from its presence food additive (BTP), which is an ingredient added to food to influence nature or form of food (PP RI No.18, 2019). Regulations regarding food additives already permitted and which are not permitted or prohibited to use are contained in the Codex Alimentarius.

Wrong one BTP that is prohibited from being added to food is borax. Borax is a chemical compound derived from the heavy metal boron (B) which is usually used as an anti-fungal agent, for wood preservative, and as an antiseptic in cosmetic products. (Rumanta, et al 2016.).

Borax often used by traders who want more profit in producing food because of the price cheap and preservatives using borax can make food can be stored for days, even for months, so traders can get bigger profits (Rumanta, et al 2016). The large number of manufacturers using borax in food additives raises concerns for consumers to consume food, especially meatballs. Even though borax is still found in low concentrations in food, if it continues to accumulate in the body it will cause organ damage. The purpose of this study was to determine the presence of borax in food products, especially meatballs that are sold in the Karang Jangu environment, Mataram City.

METHOD

Equipment and Materials

The pieces of equipment and materials used in this study are Analytical Scales, Knives, Cool boxes, Petri dishes, Filter paper, stirring rods, mortar, funnels, curcumin, Aquadest, Grate, Turmeric, and Meatball.

Research Procedures

Meatball Sampling

Samples were purchased at the Karang Jasi market from five meatball traders, purchased Meatball samples were then taken to the Mataram STTL laboratory using a Cool box.

Tumeric Paper Making

Before testing the borax content in meatballs, the first step after taking meatball samples from traders was making tumeric paper. The making of tumeric paper begins with cutting the filter paper into several parts, after which the filter paper is dipped in a liquid made from turmeric which has been grated and filtered and mixed with Aquades. After being dipped in the liquid, the paper is then drained and allowed to air dry.(Khalifah, 2018).

Borax Qualitative Test

After tumeric paper dry, the paper used to perform the test qualitative borax on the meatballs taken from five traders in karan jangu environment. before in puree, sample meatballs weighed first, after mashed sample meatballs put into the volumetric flask and mixed with distilled water then in homogenize, after that fitrat the sample is dripped on top of the tumeric. Test positive indicated by a change in color from ellow to yellow becomes brownish red then it can be concluded that the positive sample contains borax. (Khalifah, 2018).

RESULTS AND DISCUSSION

After testing borax content of 5 meatball samples circulating in the Karang Jangu Environment showed the results of all samples were negative or the sample does not contain borax. Matter This is proven by testing using tumeric paper reaction. Based on the test results, it is known that all the meatball samples examined did not contain borax. This proves that not all traders use hazardous Food Additives. This is in line with research Lestari D,et al (2020) The result of this study showed that all eight meatball samples that were qualitatively examined obtained negative result or did not contain borax.

Table 1. Examination results for the borax content of meatballs

No	Code	Results
1	A	Negative
2	B	Negative
3	C	Negative
4	D	Negative
5	E	Negative

There are several characteristics of food containing borax, according to BPOM meatball and pentol foods, namely the texture is chewy, the color tends to be slightly white and the taste is very tasty (Khalifah, 2018). The characteristics of borax found in crackers are usually very crunchy texture and cause bitterness. Early symptoms of borax poisoning can last from a few hours to a week after ingestion or contact in toxic doses. According to WHO, the fatal dose of borax ranges from 3-6 grams per day for small children and infants, while for adults as much as 15-20 grams per day can cause death. Clinical symptoms of borax poisoning can usually be characterized by several things such as experiencing upper abdominal pain, headache, vomiting and diarrhea, face looks pale and sometimes has bluish skin and shortness of breath, has blood circulation failure and does not have appetite (Rumanta, et al 2016.).

Eat foods that contain food additives Borax in large quantities and continuously is very dangerous for the health of the body because it can cause some of the diseases such as fever, anuria or not the formation of urine, damage to the kidneys and nervous system center, anemia, cyanosis, coma and can even cause death (Melani MS, E., et al 2021).

The advantage of research using this qualitative test is that the food sample testing is not too much difficult and the processing time as well as the test results obtained do not take a long time. While weakness in this study, namely the testing tools used are quite expensive and researchers can only find out] or analyze whether or not borax is present in the food samples that have been tested. Researchers don't know the content of other food additives that are harmful that may be present in food. So therefore, from some foods that get a negative result for borax, it is not certain that these foods are safe for you consumed because the researchers did not test other food additives that might be harmful to the body.

Therefore, supervision of food additives in food sold in the City of Banyuwangi must be improved and all traded food must be monitored more so that people are not worried and wary of buying food. Borax has a very effect harmful to the body. target organs borax if it enters the body ie brain and heart. Borax contains acids borates which can cause death if consumed more than 15-25 g for adults and for children should not exceed 5-6 g. According to Santi, A. U. P. (2017) initial symptoms are caused by consuming borax i.e. stomachache, headache, shortness of breath and can also cause failure blood circulation and reduce appetite Eat.

According to Septiani, T., et al (2018) regular consumption of borax will harm the body with affect how the liver, kidneys, and brain. As a result, consumers need be more careful when choosing food and realize the difference between foods containing borax and who does not. Despite the shape and color Interesting, containing food Borax is very dangerous for health and body. Containing foods Borax retains shape basically. Visually, variety foods containing borax and does not contain borax hardly indistinguishable. Instead, food containing borax has a texture which is more supple and more colorful white. According to Seran, M. N., et al (2021) foods containing borax has a more chewy texture and more attractive display in comparison with non-containing foods borax so flies don't like it.

The use of borax cannot be recognized easily, but overall the impact it has is extraordinary. The presence of these additional ingredients can reduce the body's immunity and even

complications will occur in human health. So to distinguish foods that contain borax is very easy, one of which is meatballs or pentols, the characteristics will feel more chewy, if thrown on the floor it will bounce like a ball, there are even some changes in color. If the food does not contain borax, the color will change. darker, while those using borax have a lighter color and don't smell fishy. Even food can last a long time, in contrast to non-borax which tends to spoil eas

CONCLUSION

In conclusion, of the five meatball samples examined, the fifth did not contain Borax. This is additional information for the people in the Karangjangu Environment so that people are no longer worried about consuming meatballs sold by traders in the area. It is hoped that future researchers can use other methods. which can detect the presence and levels of borax in meatballs.

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