



Research Article

Analysis Implementation of Hygiene and Sanitation of Ice-Based Beverage Products In The Canteen At Universitas Negeri Padang

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ABSTRACT

Food is an essential need for human survival. Various types of food are consumed with numerous processing procedures. Food contamination can be harmful. As a result, community efforts to protect food health and safety must be increased based on the Decree of the Minister of Health of the Republic of Indonesia (number 942/Menkes/SK/VII/2003 concerning Guidelines for Sanitation and Hygiene Requirements for Snack Food). This study was descriptive and observational with a quantitative approach. The instruments are in the form of a checklist. The sample was selected using a purposive sampling technique. The research variables were related to hygiene and sanitation in selecting materials, equipment, food processing, and food serving. The results of this study indicate that the level of implementation of hygiene and sanitation regarding the selection of materials and sanitation of equipment is in the excellent category, while the level of implementation of hygiene and sanitation regarding food processing and food serving is in the good to excellent category.

Keywords: Canteen, Food, Hygiene and Sanitation

INTRODUCTION

Food is an essential requirement for human survival. Diverse food varieties are consumed using various processing methods. These foods are susceptible to inducing changes in body systems, resulting in illness. Consuming food, which is clean and free of wholesomeness, is one strategy to keep healthy. Contamination is one of the many factors that may make food dangerous (Agustina et al., 2009).

Contamination in food and beverages can cause these foods to become a medium for disease. Diseases caused by contaminated food are called "foodborne diseases" (Susanna & Hartono, 2003). Several microbes, including *Salmonella*, *Listeria monocytogenes*, *Escherichia coli*, and others, cause contamination. Indonesia has low food safety since there are 20 million food poisoning



incidents yearly. Foodborne illnesses are caused by low food safety due to incorrect food preparation (Hadi et al., 2021).

According to Minister of Health Regulation No. 02 of 2013, food poisoning is an illness with signs and symptoms comparable to poisoning induced by ingesting food suspected of harboring biological or chemical pollutants. An exceptional food poisoning incident (outbreak) is the occurrence of one or more instances of sickness caused by a kind of food. In contrast, occurrences are single cases of lethal poisoning (A. W. Sari, 2021). Food safety is a community requirement that must be prioritized since safe food will avoid and predict the onset of illnesses or health issues caused by improper food. It is vital to enhance the health of food and drinks and regulatory elements that cause pollution, the development of germs, and increased addictive chemicals in food. Prevention is a community effort to preserve food health and safety. Food and beverage processing methods can affect disease transmission and health issues (Jiastuti, 2018).

Several aspects of snack food handling are regulated by the Minister of Health of the Republic of Indonesia's Decree (number 942/Menkes/SK/VII/2003 concerning Guidelines for Snack Food Sanitation and Hygiene Requirements), including food handlers, equipment, water, food ingredients, food additives, serving, and peddlers. Some of these factors significantly impact the condition and quality of food. According to Kusmayadi, four crucial aspects become food hygiene and sanitation principles: healthy and clean conduct of individuals who handle food, food sanitation, equipment sanitation, and processing site sanitation (Wulandari, 2014).

Based on the preceding, the researcher wishes to conduct research on the sanitary hygiene of ice-based beverage products in the Universitas Negeri Padang canteen by the Minister of Health of the Republic of Indonesia's Decree No. 942/Menkes/SK/VII/2003 concerning Guidelines for Snack Food Sanitation Hygiene Requirements. This study aimed to assess how food sellers on the Universitas Negeri Padang campus will use hygiene and sanitation in 2022.

METHODS

This study is a descriptive, observational study with a quantitative methodology. This study includes hygiene and sanitation, material selection, equipment, food processing, and food serving. The evaluation of the hygiene and sanitation description of ice-based beverage products in the canteen is based on the Minister of Health of the Republic of Indonesia's Decree No. 942/MENKES/SK/VII/2003 about Guidelines for Snack Food Sanitation and Hygiene Requirements. This study was carried out in the Universitas Negeri Padang campus canteen. The frequency distributions and percentages for each hygiene and sanitation variable (selection materials, equipment, food preparation, and food serving) were determined using univariate analysis. The formula was used to calculate the proportion of questionnaire responses from respondents (Alen et al., 2014):

$$P = \frac{f}{n} \times 100\%$$

Description:

P = Percentage

f = Frequency of Answers

n = Respondents

To categorize the value of the achievement of respondents used the classification proposed by (Riduwan, 2012) as follows:

81% - 100% = Excellent category

61% - 80 % = Very good category

41% - 60%	= Good category
21% - 40%	= Fair category
0% - 20%	= Unsatisfied category

RESULTS AND DISCUSSION

This study was carried out at Universitas Negeri Padang's (UNP) main campus cafeteria. Campus canteens play a significant role in satisfying the academic community's consumption demands. The central campus of UNP's cafeteria was chosen as the research location since each faculty already has canteen amenities scattered across every academic building, school, and supporting facility.

Respondents in this study were all canteen food handlers, including staff and canteen proprietors. **Table 1.** shows the distribution of respondents in this survey depending on the number of canteens on UNP's central campus. According to **Table 1**, nine canteens were surveyed, and each canteen had 21 respondents who worked as food handlers. These responses are from canteen proprietors or staff who assist canteen owners with their duties. The respondents in this research had a variety of features. Most responders were female, with 19 (90.5%), while the remainder were male, with 2 (9.5%). Those aged 45 years or older received the most responses, with 9 persons (42.8%), and those aged less than 25 years or between 25 and 34 years received the fewest, with 2 persons (9.52%). According to the education of respondents who had the most recent high school education, there were 14 (66.67%), and the least were respondents who did not go to school, 1 (4.76%), and had a diploma, 1 (4.76%), and the remainder were bachelors, 5 (24.0%).

Table 1. Distribution of Respondents Based on the Number of Canteens on the Campus of UNP

No.	Canteen	Respondent
1	FMIPA	1
2	Mbak Ning	1
3	Onang	4
4	Surya	2
5	Lesehan 67	2
6	Mimi	3
7	Mama	2
8	Petak 9	3
9	FT	3
Total		21

This study examines how much food service sanitation and hygiene (canteen) is applied in material selection, equipment sanitation, food processing, and food serving. **Table 2.** shows the results of a study on the implementation of hygiene and sanitation in the selection of materials by food processors in the UNP central campus canteen. Regarding materials in the UNP central campus canteen, the water used had been boiled. The materials used were fresh and not rotten, and the processed materials used had been registered with the Ministry of Health. They were not expired or faulty, and the major components or auxiliary materials must be stored separately.

According to Kusmayadi (2008), raw material storage ensures that a food component is not readily degraded and loses its nutritional quality. Foodstuffs must be cleaned before storage. It is cleaned by washing the food, then drying it, so there is no water in the food, wrapping it in a clean wrapper, and storing it in a cool area.

This research summarises the cleanliness of material selection at the UNP central campus canteen, revealing that all 20 respondents (95.2%) have implemented the hygiene standards for material selection, with just one respondent (4.8%) failing to comply with the water use element. Drink because food machines prepare food without first heating or preparing it with replenished gallons of water. In addition, the responder did not employ processed ingredients registered with the Ministry of Health. Overall, the respondents' level of cleanliness and sanitation execution was outstanding, as was their material selection for food preparation. Food storage is one of the variables associated with *E. coli* in food (p-value = 0.041) (Nuryani et al., 2016).

Table 2. Distribution of Respondents based on Hygiene and Sanitation Material Selection

No.	Observational Object	Condition				TOTAL		Categories
		Quality		Not Eligible		n	%	
		N	%	n	%			
1.	The water used in handling snacks must be water that meets the standards and Sanitation Hygiene Requirements that apply to clean water or drinking water.	20	95,2	1	4,8	21	100	Excellent
2.	Clean water used to make drinks must be cooked until it boils.	21	100	0	0,0	21	100	Excellent
3.	All ingredients that are processed into snacks must be of good quality, fresh and not rotten	21	100	0	0,0	21	100	Excellent
4.	All processed ingredients in packaging that are processed into snack foods must be processed ingredients that are registered with the Ministry of Health, not expired, not defective or damaged	20	95,2	1	4,8	21	100	Excellent
5.	Foodstuffs, as well as food additives and ready-to-eat snack food aid materials must be stored separately	21	100	0	0,0	21	100	Excellent
6.	Food ingredients that spoil or spoil quickly should be stored in separate containers	21	100	0	0,0	21	100	Excellent

Use an evaluation in the form of cooking and eating utensils that satisfy hygiene and sanitation criteria and food processing equipment according to its classification; the equipment used is intact, not faulty, and simple to clean. Wash used equipment with clean water and soap regularly; dry used equipment with a dryer or clean cloth regularly; and keep the equipment storage room clean and free of contamination. Based on this research, an overview of equipment sanitation at the UNP central campus canteen demonstrates that it has adopted hygiene and sanitation principles in the equipment provided (**Table 3.**) The findings of this study are inversely proportionate to those of Agustina (2010), who discovered that the majority of respondents (65.2%) possessed poor-quality sanitary equipment.

Based on this research, an overview of equipment sanitation at the UNP central campus canteen demonstrates that it has adopted hygiene and sanitation principles in the equipment provided (**Table 3.**) This study's findings are inversely proportionate to Agustina (2010), who discovered that most respondents (65.2%) possessed poor-quality sanitary equipment. Kurniasih (2015), in her research, also found a significant relationship between sanitation and equipment *E. coli* in food (p-value = 0.001) [11]. Similarly, Firdausi (2017) revealed in his study that the quantity of germ contaminations in smoked fish is connected to equipment cleanliness (p-value = 0.0001).

According to this study, the 21 food processors inspected were in the "good" category for implementing equipment cleanliness and sanitation. This evidence is demonstrated by the fact that all food processors (100.0%) reported using their designated cooking and eating utensils, routinely

cleaning the equipment they had used with clean water and detergent, and routinely drying the equipment with a tumble dryer or clean cloth. Then, regarding having a clean and pollution-free equipment storage space, 21 people (100.0%) of food processors acknowledged having clean and contamination-free storage locations, and 21 people (100.0%) of food processors admitted not employing return equipment designated for single use only.

Good equipment drying techniques must be used to limit the number of germs on silverware. This finding was demonstrated by Fadhila (2015), who discovered a link between equipment drying processes and the number of germs on cutlery (p-value = 0.007). Based on research and observations, all UNP campus canteens have satisfied the standards for cleanliness and sanitation of equipment outlined in the Minister of Health of the Republic of Indonesia's Decree No. 942/MENKES/SK/VII/2003.

Table 3. Distribution of Respondents based on Equipment Hygiene and Sanitation

No.	Observational Object	Condition				TOTAL		Categories
		Qualify		Not Eligible		n	%	
		N	%	n	%			
1.	Equipment used to process and serve snack food must be in accordance with its designation and meet the requirements of sanitary hygiene.	21	100	0	0,0	21	100	Excellent
2.	Equipment that has been used is washed with clean water and soap	21	100	0	0,0	21	100	Excellent
3.	Dry the equipment that has been washed with a dryer/clean cloth	21	100	0	0,0	21	100	Excellent
4.	Clean equipment is stored in a place free of pollution	21	100	0	0,0	21	100	Excellent
5.	Do not reuse equipment designed for single use only	21	100	0	0,0	21	100	Excellent

The handlers were assessed by washing their hands each time they handled food. The open wounds were closed; keeping hands, hair, and nails clean; wearing clean clothes, aprons, and head coverings, and not suffering from easily transmitted diseases such as coughs, colds, influenza, and stomach ailments; using gloves; not smoking when preparing food, and not sneezing or coughing at food..

This section describes an overview of food processing hygiene and sanitation (**Table 4.**). According to the findings, one respondent (4.80%) did not wash their hands with soap before processing food, and seven (33.30%) did not use an apron. Prior research (Zaenab, 2021), aprons and head coverings should be used when processing food since aprons prevent garments from getting dirty and offer protection for the covered sections. Meanwhile, two respondents (9.50%) did not wear head coverings, although head coverings safeguard food by preventing hair or hair particles from falling when processing food. Four respondents (19.00%) used gloves when handling the food to be processed. Nine respondents (42.90%) were found to engage in activities that were extremely detrimental to the condition of the food being processed, namely smoking and scratching limbs until coughing in front of food that was prepared or served. Overall, respondents' hygiene and sanitation implementation levels in food processing range from outstanding to good.

Table 4. Distribution of Respondents based on Food Processing Hygiene and Sanitation

No.	Observational Object	Condition				TOTAL		Categories
		Qualify		Not Eligible		n	%	
		N	%	n	%			
1.	Handlers wash their hands every time they want to handle food	20	95,2	1	4,8	21	100	Excellent

2.	Closing the wound (on open wounds/ulcers or other wounds)	21	100	0	0,0	21	100	Excellent
3.	Clean hands	21	100	0	0,0	21	100	Excellent
4.	Clean hair	21	100	0	0,0	21	100	Excellent
5.	Nails are short and clean	21	100	0	0,0	21	100	Excellent
6.	The clothes worn by the touchers are clean	21	100	0	0,0	21	100	Excellent
7.	Uses an apron	14	66,8	7	33,2	21	100	Very good
8.	Uses headgear	19	90,5	2	9,5	21	100	Excellent
9.	Not suffering from easily transmitted diseases, for example, coughs, colds, influenza, diarrhoea, or similar stomach ailments;	21	100	0	0,0	21	100	Excellent
10.	Handlers touch food using tools/equipment or with gloves	17	81,0	4	19,0	21	100	Excellent
11.	The handler is not doing smoking activities	12	57,1	9	42,9	21	100	Good
12.	Handlers do not use scratch limbs (ears, nose, mouth or other parts)	12	57,1	9	42,9	21	100	Good
13.	Handlers Do not cough or sneeze in front of the snacks being served and or without covering their mouths or noses	12	57,1	9	42,9	21	100	Good

Sari's research (2018) found that most (84.6%) street food vendors still needed to meet personal hygiene requirements. Handler hygiene practices are linked to food safety. According to Riana (2018), handler hygiene actions have a significant relationship with food safety, the MPN indicator. (p-value = 0.005) Coliform.

In terms of providing food, the packaging must be clean and not contaminate the food. The containers must not be blown; the food delivered must be appropriately wrapped and closed; and the food conveyed must be isolated from raw materials to protect it from contamination. This section describes an overview of food hygiene and sanitation (**Table 5.**). According to the study's findings, four respondents (19.00%) claimed that blowing the food container was not an issue while serving food, despite the fact that when blown, germs in the mouth might transfer via the air that was blown into the container to be used. Of course, this will harm the customers who will consume these items. Containers in food cannot be blown, notwithstanding the need in the Decree of the Minister of Health of the Republic of Indonesia, Number 942/Menkes/SK/VII/2003, concerning Guidelines for Snack Food Sanitation Hygiene Requirements. The most crucial thing to consider is knowing how to serve meals. Inadequate food service education can lead to food contamination in the environment and among food workers.

Table 5. Distribution of Respondents based on Food Serving Hygiene and Sanitation

No.	Observational Object	Condition				TOTAL		Categories
		Qualify		Not Eligible		n	%	
		N	%	n	%			
1.	Snacks that are sold must be wrapped and or closed	21	100	0	0,0	21	100	Excellent
2.	The packaging used and or covering the snack food must be clean and not contaminate the food	21	100	0	0,0	21	100	Excellent
3.	Food containers, as intended, must not be blown	17	81,0	4	19,0	21	100	Excellent
4.	Snacks that are transported must be closed or wrapped and in a clean container	20	95,2	1	5,8	21	100	Excellent
5.	Snacks that are transported must be in separate containers from raw materials so that they are protected from contamination	12	57,1	9	43,0	21	100	Good

One of the cornerstones of food hygiene and sanitation is serving food. Serving substandard or immoral food decreases appetite and may lead to bacterial infection (Mundiatun & Daryanto, 2015). According to the findings of this study, up to four food processors (19.0%) engaged in actions that demonstrated they smelt food. This finding is opposed to the principle of sanitary hygiene since, while there are many germs in the mouth when someone blows on food, it is evident that bacteria in the exhaled mouth might transfer to the food given. This condition will lead to food contamination, rendering food unsuitable and unsafe for eating.

Furthermore, it was discovered that one food processor (5.8%) did not pay attention to food packing containers, which might be a vector for disease transmission by contamination from filthy containers. This finding was made worse because nine food processors (43.9%) were still mixing food ingredients with processed food items when they were served, thus contaminating the meal with potentially dangerous food ingredients. However, in providing food, the degree of cleanliness and sanitation execution is outstanding.

Food contamination by the environment, whether through the air, dust, automobile emissions, or even insects, can raise the danger of selling food in an open area. Food served on the side of the road will be extremely vulnerable to dust and pollutants emitted by flying automobiles. According to Djaja's research, the average period for food storage at street vendors is 406.7 minutes or 6.8 hours. Storage and serving durations (6-7 hours) will allow germs to proliferate to 1 million within 6 hours (Djaja, 2010). The contamination and quantity of germs in the food served by the food processor will increase as a result. As a result, customers are more likely to contract foodborne infections.

Susanna et al. (2015) discovered that serving food in closed settings showed a solid protective connection against the occurrence of *E. coli* contamination in food (p-value = 0.002, OR = 0.214) [16]. Food wrappers should not contaminate food because, according to Indraswati (2017), packaging must be able to shield the product from dirt and contamination so that the product remains clean to operate correctly.

CONCLUSION AND SUGGESTION

According to the Minister of Health of the Republic of Indonesia's Decree (number 942/Menkes/SK/VII/2003 concerning Guidelines for Snack Food Sanitation and Hygiene Requirements), several aspects of snack food handling are regulated, including food handlers, equipment, water, food ingredients, food additives, serving, and peddlers. Some of these factors significantly impact the condition and quality of food. This study found excellent hygiene and sanitation implementation regarding material selection and equipment sanitation. In contrast, the level of hygiene and sanitation implementation relating to food processing and serving is good to exceptional.

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