

## Food and Beverage Sanitation Hygiene Monitoring and Food Quality Served by Traders in the Elementary School Environment, Alafan District, Simeulue Regency

<sup>1</sup>Fitri Rahma Yunita, <sup>2</sup>Ihsan Murdani

<sup>1,2</sup> Teuku Umar University

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### ABSTRACT

Food is a basic need for human life. Cases of food poisoning and infectious diseases due to food tend to increase. Children often become victims of the disease. One of the reasons is due to not paying attention to personal hygiene and the environment in the process of food management. Food hygiene and sanitation supports the prevention of food poisoning. The purpose of this study was to monitor Food and Beverage Sanitation Hygiene and the Quality of Food Served by Traders in the Elementary School Environment, Alafan District, Simeulue Regency. The method used in analyzing and studying is observational with a descriptive approach, namely wanting to know the conditions of food and drinks sold in elementary school canteens in terms of sanitary hygiene. This research is an observational study with a descriptive approach, namely wanting to know the conditions of food and drinks sold in elementary school canteens in terms of sanitary hygiene. The results of this study indicate that the hygiene description of snack food handlers in the elementary school environment, Alafan District, Simeulue Regency shows that the hygiene of all handlers does not meet the requirements. The description of the sanitation of snack food equipment in the elementary school environment in Alafan District, Simeulue Regency shows that only 2 canteens meet the hygiene and sanitation requirements for snacks in the canteen in the elementary school environment in Alafan District, Simeulue Regency. The description of the sanitation of serving snacks in the elementary school environment in Alafan District, Simeulue Regency shows that the sanitation of serving food in all canteens (75%) does not meet the requirements. The description of the sanitation of the snack food vendor facilities in the elementary school environment, Alafan District, Simeulue Regency shows that out of 4 canteens, only 1 canteen fulfills the sanitation requirements for serving this because the canteen owners do not pay attention to the serving container as what is sold must be wrapped and closed and avoid contamination. vector (disease-carrying flies) shows that the sanitation of the vendor facilities in 2 canteens (70%) does not meet the requirements. only 1 canteen fulfills the sanitation requirements for serving this because the canteen owners do not pay attention to the serving container as what is sold must be wrapped and closed and avoid contamination. vector (disease-carrying flies) shows that the sanitation of the vendor facilities in 2 canteens (70%) does not meet the requirements. only 1 canteen fulfills the sanitation requirements for serving this because the canteen owners do not pay attention to the serving container as what is sold must be wrapped and closed and avoid contamination. vector (disease-carrying flies) shows that the sanitation of the vendor facilities in 2 canteens (70%) does not meet the requirements.

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Email :  
Fitriahmayunita60@gmail.com

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### 1. INTRODUCTION

Based on the Hygienic Requirements and Hygienic Guidelines for Snacks stipulated in the Decree of the Minister of Health of the Republic of Indonesia Number 942/MENKES/SK/VII/2003 concerning Guidelines for Hygienic Requirements for Snacks, there are several things that greatly affect

the quality of food, namely handler hygiene, equipment sanitation, introduction sanitation and sanitary supply facilities. Several studies have also shown that personal hygiene and hygiene practices during food preparation can influence microbial contamination. The hygiene practices of food handlers are related to food safety as shown by Riana and Sumarmi (2018) in their research which showed that the hygiene behavior of food handlers is related to food safety, the MPN coliform indicator in snack sellers in school canteens. There is a significant relationship with cellular providers ( $p = 0.005$ ). Azhar (2018) in his research stated that food sanitation is related to the number of bacteria on food and beverage equipment in school canteens.

According to a preliminary survey in several elementary schools in the Alafan sub-district, Simeulue Regency, there were 9 elementary schools and only 4 elementary schools that had canteens. Food sold in the cafeteria is generally in the form of snacks made such as fried foods, rice, noodles, iced tea and so on. Researchers' monitoring of elementary school canteens in Alafan District shows that the sanitary condition of snacks in these canteens is still not good, such as the absence of food covers, food handlers do not wash their hands when choosing to eat. This is because it still shows the consumption level of food safety knowledge is still lacking for canteen owners.

Based on these descriptions, the researcher is interested in conducting research on the description of snack food hygiene and sanitation which includes handler hygiene, equipment sanitation, serving sanitation and vendor sanitation facilities in the Elementary School environment, Alafan District, Simeulue Regency

## **2. LITERATURE REVIEWS**

### **Hygiene and Food Sanitation**

Sanitation is an effort to prevent disease that focuses on sanitation work (Rejeki, 2017). Sanitation, therefore, is an effort or action taken by a person towards his environment to keep it clean and healthy. A clean and healthy environment means no disease. Therefore, the environment must be created in such a way as to prevent the emergence of pathogenic bacteria that can harm humans.

According to the definition of the World Health Organization (WHO), food hygiene is the conditions and measures necessary to ensure the safety of food from production to consumption. Food can become contaminated at any time during slaughtering or harvesting, processing, storage, distribution, transport and preparation. Improper food hygiene can cause foodborne illness and death among consumers.

### **Hygiene and Food Sanitation in the School Canteen**

Snack food is food and drink that is processed by food artisans at the point of sale and or served as ready-to-eat food for sale to the public other than those served by catering services, restaurants/restaurants, and hotels (Kepmenkes RI No. 942/MENKES/SK/ VII /2003). Food sanitation hygiene is an effort to control food factors, people, places and equipment that can or may cause disease or health problems (Kepmenkes RI No. 942 / MENKES / SK / VII / 2003).

### **Hygiene Food Handlers**

Snack food handlers are people who are directly or indirectly in contact with food and equipment from the stage of preparation, cleaning, processing, transportation to serving (Kepmenkes RI No. 942 / MENKES / SK / VII / 2003).

### **Equipment Sanitation**

Equipment are goods used for handling snack food (Kepmenkes RI No. 942/MENKES/SK/VII/2003). Anies (2019) said that kitchen equipment for processing food and the personal hygiene of the processor are important factors. Not infrequently cases of food poisoning occur due to lack of attention to it.

### **Presentation Sanitation**

Presentern food is one of the principles of food hygiene and sanitation. Serving food that is not good and unethical, not only can reduce one's appetite but can also be a cause of contamination of bacteria (Mundiatun & Daryanto, 2015).

### Vendor Facilities

Meaccording to 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, vendor facilities are facilities used for handling snack food both permanently and on the move. Snacks that are sold with hawker facilities must be constructed in such a way as to protect the food from contamination (Kepmenkes RI No.942/MENKES/SK/VII/2003).

### 3. METHODS

This research is an observational study with a descriptive approach, namely wanting to know the condition of food and drinks sold in elementary school canteens in terms of sanitary hygiene. Location This research was conducted in the elementary school environment in Alafan District, Simeulue Regency, by observing the canteens in that location. Time This research was conducted in June-August 2022.

The objects of this study are all school canteens, which are 4 canteens and all canteen owners in the elementary school environment, Alafan District, Simeulue Regency.

Hygiene Check BasedToDecree of the Minister of Health of the Republic of Indonesia Number 942/MENKES/SK/VII/2003 concerning Guidelines for Snack Food Sanitation Hygiene Requirements, stated:

1. If the inspection value reaches 70 or more, then it is stated that it meets the physical eligibility requirements.
2. If the inspection value is <70, then it is stated that it has not met the physical eligibility requirements and the entrepreneur is asked to immediately repair the problem object.
3. If the value has reached 70 or more, but object number 38 does not meet the requirements, it means that the person concerned does not meet health requirements.

Data processing is done by manual technique. And the data obtained is tabulated and analyzed descriptively by referring to the Regulation of the Minister of Health of the Republic of Indonesia No. 43 of 2014 concerning Food and Beverage Sanitation Hygiene.

### 4. RESULTS AND DISCUSSION

Table 1. Higiene Food Handler atelementary school environment in Alafan District, Simeulue Regency

No	Observatio n Location	Hasil research	
		Memescomply with the conditions	Tdk qualifies
1.	Canteen E	70%	30%
2.	L canteen	76%	24%
3.	R canteen	30%	70%
4.	K canteen	30%	70%

Based on the table above the researcher can explain that only 2 canteens meet the requirements hygiene of snack food handlers in the canteenelementary school environment in Alafan District, Simeulue Regency,others do not meet the requirements, this is due to the lack of knowledge of canteen owners in terms of food hygiene

Table 2. Equipment Sanitationinelementary school environment in Alafan District, Simeulue Regency

No	Observation Location	Hasil research	
		Memescomply with the conditions	Tdk qualifies
1.	Canteen E	75%	25%
2.	L canteen	75%	25%

3.	R canteen	50%	50%
4.	K canteen	25%	75%

Based on the table above on sanitation equipment, researchers can explain that only 2 canteens meet the requirements sanitation hygiene in snacks in the canteen the elementary school environment in Alafan District, Simeulue Regency, this is because the canteen owners do not pay attention to the need to maintain cleanliness of the equipment used.

### Serving Sanitation

Table 3. Serving Sanitation Makanan in elementary school environment in Alafan District, Simeulue Regency

No	Observation Location	Hasil research	
		Memescomply with the conditions	Tdk qualifies
1.	Canteen E	67%	33%
2.	L canteen	67%	33%
3.	R canteen	50%	50%
4.	K canteen	67%	33%

Based on the table above on the sanitation presentation the researcher can explain that all canteens do not meet the requirements hygiene and sanitation serving snacks in the canteen the elementary school environment in Alafan District, Simeulue Regency, this is because canteen owners do not pay attention to serving containers such as covering food and maintaining cleanliness around it.

Table 4. Sanitation of Mak's Peddler Facilities in elementary school environment in Alafan District, Simeulue Regency

No	Observation Location	Hasil research	
		Memescomply with the conditions	Tdk qualifies
1.	Canteen E	25%	75%
2.	L canteen	50%	50%
3.	R canteen	50%	50%
4.	K canteen	75%	25%

Based on the table above on the sanitation of the vendor facilities the researcher can explain that out of 4 canteens only 1 canteen meets the sanitation requirements for serving this is because canteen owners do not pay attention to serving containers such as they must be in a sealed and closed condition and protected from vectors (disease-carrying flies).

## DISCUSSION

### Higiene Food Handlers

At the stage of food or beverage processing, one thing that needs to be considered is the handler.

In order to produce food or drink that is clean, healthy, safe and beneficial for the body, proper and correct processing is needed (Chenliyana, 2007). Food or drink handlers must at least use personal protective equipment such as aprons and head coverings to avoid contamination of drinks, because hair, skin and other body parts are sources of contamination from the human body (Ministry of Health 2004).

Based on the results of research conducted from all canteens, totaling 4 canteens regarding the description of the hygiene of snack food handlers in the canteen elementary school environment in Alafan District, Simeulue Regency, which shows that only 2 canteens fulfill the hygiene requirements for snack food handlers and the other 2 canteens do not meet the hygiene requirements for food handlers in accordance with 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.

Based on these regulations, handlers will fulfill the requirements if they meet all the hygiene requirements of the handlers.

Handler hygiene practices are related to food safety as revealed by Riana and Sumarmi (2018) in their research on the relationship between Coliform contamination and sanitation hygiene behavior scores in snack vendors in school canteens and mobile vendors stating that handlers' hygiene actions have a significant relationship with food safety. MPN Coliform indicator ( $p$  value = 0.005).

another source, Yuniatun et al. (2017) in their research on the relationship between sanitation hygiene and microbiological quality of gado-gado food in Tembalang District, Semarang City, stated that seller hygiene practices were significantly related to microbiological quality of gado-gado food ( $p$  value = 0.008).

Hasil Observations showed that the respondent did not pay attention to cleanliness, especially to clean nails. The respondent left his nails long, the handlers did not pay attention to cleanliness, especially for hand hygiene. The respondent left his hands dirty, the handlers did not pay attention to cleanliness, especially hair hygiene. The respondent left his hair untied, the householders did not pay attention to cleanliness, especially clothes. The respondent did not use an apron, the handler did not pay attention to cleanliness, especially the head. The respondent did not use a headgear, the handler did not pay attention to cleanliness, especially the hands. The respondent left his hands dirty every time he wanted to handle food, the congregation did not pay attention to cleanliness, especially the food equipment the respondent did not pay attention to equipment such as hand mats, the worshipers did not pay attention to hand hygiene. The respondent let his hand touch the food after touching the cigarette, the customer did not pay attention to personal hygiene, especially the nose and mouth. The respondent allowed coughing and sneezing in front of the snacks that were served without covering his mouth and nose. Pejamah do not pay attention to the cleanliness of wounds and ulcers. The respondent left open wounds, boils while handling food, handlers did not pay attention to personal hygiene. These respondents still touched food even though they had stomachaches, diarrhea, coughs, colds, influenza. This is due to the lack of knowledge and awareness of the canteen owner.

This can be observed from handlers who do not use tools and cleanliness of all members of the body including clothing when handling food.

according to the Indonesian Ministry of Health (2017), Cleanliness must be maintained by every handler. Cleanliness includes personal hygiene and cleanliness of clothes. Personal hygiene includes nails and hair in neat condition. The handler's nails are short and clean.

### Equipment Analysis

Equipment that is cracked or chipped will become a nest of dirt or bacteria, equipment that is not intact cannot be washed completely so that it can become a source of contamination. While all sellers must always wash equipment after use (Ministry of Health, 2004)

Gamsection on equipment sanitation in an elementary school environment, Alafan District, Simeulue Regency Based on this study, it showed that only 2 canteens met the hygiene and sanitation requirements for equipment and the other 2 canteens did not meet the hygiene and sanitation requirements for the equipment.

Based on 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, equipment sanitation will fulfill the requirements if it meets all the requirements for equipment sanitation.

Research by Rahmat (2021) The results of this study showed that as many as 8 canteens did not meet the requirements for washing used equipment with clean water and soap. This is due to the unavailability of facilities for washing equipment. Poor sanitation of equipment like this can cause bacterial contamination of cutlery as disclosed by Romy et al. (2019) in his research on factors related to the total number of bacteria and the presence of *Escherichia coli* bacteria on cutlery at Kedungpane Class I Lapas, Semarang City, which stated that there was a relationship between cutlery washing techniques and *E. coli* contamination (where cutlery with Poor washing technique is 4.9 times more at risk of having a total number of bacteria that do not meet the requirements).



The results of the observations showed that the respondents did not pay attention to cleanliness. Especially the cleanliness of the equipment that has been used is washed with clean water with soap, the respondent allows the washing equipment to be contaminated with dust because it keeps the equipment in a clean place from dust contamination, the respondent does not pay attention to the cleanliness of the equipment that has been washed and dried and contaminated with cloth -contaminated fabrics and polluted places. These respondents did not pay attention to the reuse of equipment that was only used once. The respondent allowed equipment that was only used once to be used repeatedly. This is due to the unavailability of facilities for washing dishes and clean storage areas.

This can be observed from the use of tools that should only be used once and should not be reused, such as plastic spoons, straws, hoods and others. Besides that, it was also found the use of tools that had been contaminated with dust and used cloth that was less clean. This is not available for washing and storage of equipment. A small number of tools are still found to be used only once.

### **Presentation Sanitation**

This study has obtained results regarding the description of serving sanitation in the canteen in an elementary school environment, Alafan District, Simeulue Regency. It shows that all canteens do not meet the hygiene and sanitation requirements for serving snacks. This is due to the lack of knowledge of the canteen owner.

This can be observed from the use of food packaging in the form of materials that should not be used to wrap food such as old newspapers and other things that can contaminate food. In addition, it was also found the use of food covers with old newspapers and cloths that were not clean enough. Lack of knowledge of the canteen owner regarding the use of wrappers for snack foods that are sold in a small number of canteens, the practice of using wrappers made of unsafe materials is still found.

This is in line with the research conducted by Weerasinghe et al. (2017) which states that most (70.6%) ready-to-serve meals in school canteens in two districts in the western Sri Lanka Province are closed. The closed way of serving can actually reduce bacterial contamination of food.

According to Indraswati (2017) the requirements that must be met by a package in order to function properly are that it must be able to protect the product from dirt and contamination so that the product remains clean. In the Food Standards Australia New Zealand (2019) it is said that to protect food without packaging during transportation, several things can be done, such as by placing unpackaged food, especially ready-to-eat food, into containers or other packaging suitable for transportation. In addition, food needs to be placed in a clean and covered place on the transport vehicle.

### **Vendor Facility Sanitation**

According to the Decree of the Minister of Health of the Republic of Indonesia No.1429/MENKES/SK/XII/2006 concerning guidelines for implementing school environmental health, the requirements for building canteens/school stalls (Kepmenkes RI, 2006) are as follows: 1. There is a place for washing eating and drinking utensils with water flowing. 2. There is a place to wash hands for visitors to the canteen/school shop. 3. There is a place for food storage. 4. There is a place for closed ready-to-eat food storage. 5. There is a place to store eating and drinking utensils. 6. The location of the school canteen/shop is at least 20 meters from the TPS (temporary waste collection point).

Based on news regarding the sanitation of vendor facilities in elementary school environment in Alafan District, Simeulue Regency. Based on this research, it shows that out of 4 canteens, only 1 canteen fulfills the sanitation requirements for serving 3 other canteens that do not meet the sanitation requirements for vendor facilities.

Based on 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. Based on observations, these canteens are not equipped with vendor facilities that meet the requirements. This is because the canteen facilities are inadequate, such as the canteen floor being uneven and choosing the location of the canteen where it is easy to get dusty. In addition, the materials for the vendors are made of wood and planks. Materials from unpainted wood and boards are usually dirty, damp and black in color due to mold. Snack food stalls made of painted wood are easier to clean than unpainted boards.

Buildings that are designed and constructed so that they can be cleaned and sanitized effectively will be easier to clean and better kept clean. Thus the possibility of food contamination can be minimized (FSANZ, 2019).

Momunula et al. (2017) in their research on the presence of Norovirus and Adenovirus on environmental surfaces in relation to the level of hygiene in food service operations related to suspected gastroenteritis outbreaks, showed that kitchen conditions and cleanliness were associated with the presence of Norovirus contamination ( $p$  value  $< 0.05$ ) and Adenovirus ( $p$  value  $< 0.05$ ) on the surface. This study showed that in 4 canteens (22.2%) there was no place for clean water. In the canteen there are no facilities for clean water or facilities such as water faucets connected to piped water sources or other facilities for the supply of clean water. Observations made showed that as many as 2 canteens did not have trash cans.

## 5. CONCLUSION

An overview of the hygiene of snack food handlers at elementary school environment in Alafan District, Simeulue Regency. It shows that the hygiene of food handlers from all canteens is only 2 canteens that meet the food handler hygiene requirements and the other 2 canteens do not meet the food handler hygiene requirements. Sanitary description of snack food equipment in the elementary school environment, Alafan District, Simeulue Regency, show that the whole canteen only 2 canteens that meet the requirements hygiene sanitation equipment and 2 other canteens do not meet the sanitation requirements. Sanitary description of the serving of street food in elementary school environment in Alafan District, Simeulue Regency, shows that out of all 4 canteens, not a single canteen meets the sanitation requirements for serving. Description of sanitation facilities for snack food occupants in the elementary school environment, Alafan District, Simeulue Regency, show that out of 4 canteens only 1 canteen met the sanitary requirements for serving and 3 other canteens did not meet the sanitation requirements of the occupier. This is because canteen owners do not pay attention to serving containers such as yesg served must be wrapped and closed and protected from vectors (flies carrying disease).

## REFERENCE

- [1] Anies (2019) Prinsip-Prinsip Hygiene dan Sanitasi Makanan. Departemen Kesehatan Republik Indonesia, Jakarta
- [2] Arisman. 2000, Identifikasi Perilaku Penjamah Makanan yang Berisiko Sebagai Sumber Keracunan Makanan. Laporan Hasil Penelitian Lembaga Penelitian Universitas Sriwijaya, Palembang.
- [3] Badan Pengawas Obat Dan Makanan Republik Indonesia. 2008, Jenis Bahan Kemasan Plastik. Buletin Keamanan Pangan 14 : 14-15.
- [4] Badan Pengawas Obat dan Makanan. (2011). Peraturan Kepala Badan Pengawas Obat dan Makanan Republik Indonesia Nomor HK.031.231211.10569
- [5] Badan Pengawas Obat dan Makanan. (2012). Keamanan Pangan di Kantin Sekolah. Jakarta: Direktorat Surveilans dan Penyuluhan Keamanan Pangan Deputi Bidang Pengawasan Keamanan Pangan dan Bahan Berbahaya Badan Pengawas Obat dan Makanan.
- [6] Depkes RI. 2000, Prinsip-Prinsip Hygiene dan Sanitasi Makanan. Departemen Kesehatan Republik Indonesia, Jakarta
- [7] Erfianto & Koesyanto (2017). Hygiene Personal pada Penjual Nasi Kucing. HIGEIA (Journal of Public Health Research and Development), 1(1): 48-51.
- [8] Food Standards Australia New Zealand. (2019). Safe Food Australia A Guide to the Food Safety Standards 3rd Edition. Food Standards Australia New Zealand.
- [9] FSANZ, (2019). Safe Food Australia A Guide to the Food Safety Standards 3rd Edition
- [10] Keputusan Menteri Kesehatan Republik Indonesia Nomor 942/MENKES/SK/VII/2003 tentang Pedoman Persyaratan Hygiene Sanitasi Makanan Jajanan, Depkes RI.
- [11] Khomsan, Ali. 2003, Pangan dan Gizi Untuk Kesehatan. PT Grasindo, Jakarta.
- [12] Kurniadi et al. (2013) Higiene dan Sanitasi pada Pedagang Makanan Jajanan Tradisional di Lingkungan Sekolah Dasar di Kelurahan Demang Lebar Daun Palembang. Jurnal Ilmu Kesehatan Masyarakat, 53-63.

- [13] Mundiatur & Daryanto, 2015. Study Tentang Pengetahuan Perilaku Dan Kebersihan Penjamah Makanan Pada Tempat Umum Pariwisata Di DKI Jakarta (TMII, TIJA, TMR). Fakultas Kesehatan Masyarakat Universitas Sumatera Utara, Medan
- [14] Nuraida *et al.* (2011), Tata Laksana Higiene Hidangan, Keracunan Hidangan, Jenis Bakteria, [online], dari : <http://www.ihsmakassar.com> [29 November 2022].
- [15] Rahmadiani *et al.* (2019). Higiene Dan Sanitasi Makanan Jajanan Di Kantin Sekolah Dasar Di Kecamatan Buke Kabupaten Konawe Selatan Tahun 2019', Jurnal Ilmiah
- [16] Rejeki, 2017. Sanitasi, Hygiene, dan K3 (Kesehatan dan Keselamatan. Kerja). Bandung: Rekayasa Sains. Ridley, John.
- [17] Reddi *et al.* (2015). Microbiological Quality of Street Vended Fruit Juices in Hyderabad, India and Their Association between Food Safety Knowledge and Practices of Fruit Juice Vendors. International Journal of Current Microbiology and Applied Sciences, 4(1): 970-982
- [18] Riana & Sumarmi (2018). Hubungan Kontaminasi Coliform dan Skor Perilaku Higiene Sanitasi pada Pedagang Jajanan di Kantin Sekolah dan Pedagang Keliling. Media Gizi Indonesia, 13(1): 27-32
- [19] Riana & Sumarmi (2018). Hubungan Higiene Sanitasi dan Perilaku Penjamah Makanan dengan Kualitas Bakteriologis Peralatan Makan di Warung Makan. Berita Kedokteran Masyarakat, 180 -188.
- [20] Romy *et al.* (2019). Faktor-Faktor yang Berhubungan dengan Total Angka Bakteri dan Keberadaan Bakteri Escherichia coli pada Alat Makan (Studi pada Lapas Klas I Kedungpane Kota Semarang). Jurnal Kesehatan Masyarakat (eJournal), 4(4): 470-477.
- [21] Sabarguna *et al.*, 2011. anitasi Makanan dan Minuman Menuju Peningkatan Mutu Efisiensi Rumah Sakit. Jakarta: Penerbit Salemba Medika.
- [22] Sabarguna *et al.*, (2011). Penyakit Berbasis Lingkungan: Berbagai Penyakit Menular& Tidak Menular yang Disebabkan oleh Faktor Lingkungan. Yogyakarta: Ar-Ruzz Media.
- [23] Anto *et al.* (2013). Praktik Hygiene Penjamah dan Sanitasi Peralatan Makanan Jajanan Anak Sekolah Dasar pada SD di Kel. Antang Kec. Manggala Kota Makassar. Jurnal MKMI, 103-108.
- [24] Supyansyah *et al.* (2017) mengenai hubungan antara *personal hygiene* dan sanitasi tempat dagang dengan angka kuman pada sate ayam di Kota Pontianak
- [25] Susanna *et al.* (2010). Pemantauan Kualitas Makanan Ketoprak dan Gado-Gado di Lingkungan Kampus UI Depok Melalui Pemeriksaan Bakteriologis'. Makara Seri Kesehatan 7(1) : 21-29.
- [26] Tofani, Fitri. 2007, Studi Kondisi Hiegene Dan Sanitasi Makanan Jajanan Pada Sekolah Di Sekolah Dasar Negeri Kalisari II Kecamatan Mulyorejo Surabaya, [Skripsi]. Fakultas Kesehatan Masyarakat Universitas Airlangga, Surabaya.
- [27] Undang-undang RI. No.18 Tahun 2012, sanitasi pangan.
- [28] Vitria *et al.* (2013). Hubungan Hygiene Sanitasi dan Cara Pengolahan Mie Ayam dengan Angka Kuman di Kota Padang. Jurnal Kesehatan Masyarakat, 7(2): 75-81.
- [29] Weerasinghe *et al.* (2017). 'Hygiene Sanitasi Makanan', UNNES press.
- [30] Wijayanti *et al.* (2019). Hubungan stres, perilaku makan dan asupan zat gizi dengan status gizi pada mahasiswa tingkat akhir. Journal Of Nutriion College, 8(1), 1-8. Diakses dari <http://ejournal3.undip.id/index.php/jnc/>
- [31] Yulia (2019). Higiene Sanitasi Makanan, Minuman dan Sarana Sanitasi terhadap Angka Kuman Peralatan Makan dan Minum pada Kantin. jurnal vokasi Kesehatan, 55-61.
- [32] Yuniatur *et al.* (2017). Hubungan Higiene Sanitasi dengan Kualitas Mikrobiologis pada Makanan GadoGado di Kecamatan Tembalang Kota Semarang. Jurnal Kesehatan Masyarakat (e-Journal), 491-499