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STRATEGY TO ACHIEVE FOOD SECURITY FOR HAJJ PILGRIMAGE PROSPECTIVES

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ABSTRACT

To achieve the goal of food and nutrition security, this indicator of commitment to food and nutrition security was created. The availability of food that is sufficient in quantity and quality, safe, diverse, meets nutritional needs, is evenly distributed, is affordable, and does not conflict with religion, beliefs, or culture is a reflection of the state of food and nutrition fulfillment from the national level to individuals, disembarkation is the point at which pilgrims from Saudi Arabia arrive for the Hajj, as decided by the minister in charge of religious affairs. This study is to determine the strategy for realizing food security for prospective pilgrims embarking in Palembang in 2024. Research that describes a social symptom or phenomenon that produces descriptive data in the form of written or spoken words about real problems as they exist at the time the research is conducted is known as descriptive research. The Hajj Dormitory catering service provider, PT. Hidayah Abadi, became the subject of the Hajj dormitory catering service supervision activity. The Hajj dormitory cooking service does not have a processing kitchen throughout the arrival period, in contrast to the departure period. The results of the activity indicate that, in general, the environmental conditions of the catering service meet the required standards. To achieve the strategic goal of achieving food security in consumer protection initiatives, distributors, producers, consumers, and the government with effective law enforcement must all have good information and cooperate. To ensure that every link in the food security chain is safe, the country's strategy for building food security includes educating producers, consumers, and distributors.

Keywords: food security; hajj pilgrims; strategy

INTRODUCTION

One of the main priorities of the Republic of Indonesia is to improve food security (Virginia V. Rumawas, 2021). With 215 million people living in Indonesia, food issues are always complex. Political unrest is often triggered by food shortages and price increases (Indra, 2024). Therefore, food is a political commodity with broad social effects in addition to being an economic commodity (Susanta, 2017). Due to its strategic importance in national development, food security has developed into a national priority (Kurniasih & Umar, 2022). Food security is one of the main pillars supporting economic and national resilience, the importance of food in developing quality human resources, and access to adequate food and nutrition as a basic human right are its three strategic responsibilities (Dedy Sutrisno, 2022). To achieve the goal of food and nutrition security, indicators of commitment to food and nutrition security are created. The availability of food that is sufficient in quantity and quality, safe, diverse, meets nutritional needs, is evenly distributed, affordable, and does not conflict with religion, beliefs, or culture is a reflection of the state of food and nutrition fulfillment from the national level to individuals. This ensures that normal nutritional status is achieved for a healthy, active, and productive life in a sustainable manner (PP Nomor 17 Tahun 2015, 2015).

Everyone has the right and expectation to eat sufficient food that is safe and of high quality. Because it is closely related to food quality and protection against potential risks or hazards from food consumption, such as efforts to avoid contamination, poisoning, or other adverse effects on consumer health, sanitation is an essential component of the food industry (Syita Noordianty et al., 2024). Selecting fresh and clean food ingredients, keeping food ingredients at a safe temperature, processing food in a clean manner, keeping finished food separate from raw materials, transporting food in a hygienic manner, and serving food with hygienic equipment are part of the six principles of food sanitation hygiene (Gunawan et al.,

2024). Two main elements influence the quality of proper sanitation and hygiene: the individuals who handle food and the processing environment, which includes the facilities used for processing (Setyaningrum et al., 2024). Given that people have the power to improve or worsen their environment and themselves, the people who handle food are very important (Dini Rahmadhani, 2017). Management and control of risk factors for food contamination, such as the cleanliness of food ingredients, the personnel who handle them, storage and processing facilities, and the equipment used, are the goals of hygiene and sanitation (Halfia Salsabila, 2023). The risk of foodborne illness can be significantly reduced by implementing strict hygiene and sanitation principles, such as proper hand washing, maintaining clean equipment, and ensuring safety from the processing process to consumption, to ensure that food is not contaminated by pathogenic microorganisms, hazardous chemicals, or other foreign objects that can endanger the health of consumers (Aqshani et al., 2019).

Two important Islamic religious rituals that have significant spiritual, social, and financial impact on Muslims are the Hajj and the Umrah. Since the Hajj is one of the five pillars of Islam and must be performed by every Muslim who is financially and physically able, these two types of worship have a special place in Islamic law (Nayla Zafira Indra, 2024). Planning, organizing, implementing, supervising, evaluating, and reporting the Hajj and Umrah pilgrimages are known as Hajj management. In order for pilgrims to perform their pilgrimage in accordance with Sharia law and to achieve independence and resilience in Hajj and Umrah planning, these pilgrimage organizations strive to offer them protection, services, and guidance. According to (UU R.I No. 8, 2019) Hajj pilgrims are entitled to accommodation, food, and health care as well as transportation and protection in their country.

In order to improve environmental quality, environmental health checks are carried out by checking and observing environmental media directly under supervision based on relevant standards, norms, and quality standards. Environmental health interventions are carried out by means of environmental health inspections (Syeri Oktaviani Tewuh, 2020). Communication, information, and education; construction and improvement of facilities; creation of appropriate technologies; and environmental engineering are some examples of environmental health interventions (Nuryanto et al., 2024). Environmental health inspections can be carried out by physical observation of environmental media, measurement of environmental media on site, laboratory testing, and environmental health risk analysis. Environmental media include water, air, food, soil, buildings, and facilities, as well as vectors and disease-carrying animals (Sitti Rabbani Karimuna, 2024).

In Indonesia, environmental health is implemented in airplanes, catering, and dormitories for pilgrims. The first step in implementing environmental health in hajj dormitories and catering is to conduct an environmental health inspection six months before the hajj pilgrims enter the hajj dormitory and/or during the catering determination process. Management or the person in charge will then receive recommendations for improvement (Permenkes No. 62, 2016). To ensure that the pilgrims are ready for their journey, the second step involves conducting environmental health inspections and interventions one week before the arrival of the pilgrims at the hajj dormitory. While the pilgrims are in the hajj dormitory during embarkation or landing, the third stage is carried out through periodic environmental health inspections and interventions (Dirtjend P2P, 2023).

Disembarkation is the point at which pilgrims from Saudi Arabia arrive for the Hajj, as decided by the minister in charge of religious affairs. The final activity before the pilgrims return to their original places is known as disembarkation. Environmental health inspection of Hajj dormitories, catering sanitation, environmental sample inspection of food and clean water, garbage surveillance, and airline sanitation inspection are examples of disembarkation sanitation operations (Dirtjend P2P, 2023). The purpose of

this study is to determine the strategy to realize food security for prospective Hajj pilgrims embarking in Palembang in 2024.

METHOD

This research is descriptive and uses sampling techniques through recording, interviews, and observation data from the Debarkation obtained from the Class I Palembang Health Quarantine Office in 2024. This study aims to collect the latest information and concentrate on efforts to identify a problem in its current conditions so that it can be researched and studied comprehensively. Based on the definition above, descriptive research is defined as research that aims to characterize events or incidents that are happening or being experienced. Research that describes a symptom or social phenomenon that produces descriptive data in the form of written or spoken words about real problems as they are at the time the research is conducted is known as descriptive research.

RESULTS

Environmental Sanitation Supervision of Hajj Dormitories

The Hajj dormitory undergoes daily environmental sanitation checks during the landing period, just as during the embarkation period. The difference is that because the congregation only uses the Hall and Jeddah Building (polyclinic) for events, not all buildings must be checked routinely. Pilgrims from Musi Rawas, Muratara, and Bangka Belitung are among the groups who choose to spend their rest time in the lodging building because they travel from areas quite far from the Hajj dormitory and arrive at night or early morning. Mecca, Medina, and Jeddah are the buildings that are utilized. The results of the activities are largely unchanged from the conditions during the embarkation activities, which generally meet the requirements but still need improvement. Examples include the provision of infrastructure and facilities and sanitation efforts, such as providing waste bins that comply with health regulations in each building to prevent littering, Installing mats at the entrance to the building and in areas close to the toilets Wastewater pipes must be cleaned to ensure smooth operation and prevent the development of vectors or unpleasant odors.

Supervision of Hajj Pilgrims' Services for Hajj Dormitories

The Hajj Dormitory catering service provider, PT. Hidayah Abadi, became the subject of the Hajj dormitory catering service supervision activity. The Hajj dormitory catering service does not have a processing kitchen throughout the arrival period, in contrast to the departure period. This may be because the menu only consists of foods such as cooked sweet potatoes, chocolate bread, Surabaya layered cake, cheese bread, chocolate brownies, mineral water, tea, and coffee, and the production is not very varied, only occurring once per group. The food service kitchen, which is located outside the Hajj dormitory, is where the production process takes place. The results of the activity indicate that, in general, the environmental conditions of the catering service meet the required standards.

Food Sample Collection, Inspection, and Storage

Food samples from Hajj aircraft and food supplied in Hajj dormitories are among the tasks involved in collecting, examining, and preserving food samples. Food from restaurants in Hajj dormitories, food from transit pilgrims, and food from Hajj dormitory catering services are the three categories of cuisine provided in dormitories.

Food sourced from Hajj planes

The food served on the Hajj aircraft is prepared in the processing kitchen and by the Saudi Arabian catering service. Therefore, during the landing phase, the catering processing kitchen of the Hajj aircraft was not checked. Samples were taken to be used as a sample bank after the serving kitchen on the aircraft was monitored. This takes into account that only one sample package is provided. However, by eliminating

sample storage in the sample bank, weekly food sample examinations are still carried out at the BLKM Class I Palembang laboratory. The parameters examined are the number of germs and pathogenic germs (E. Coli and Salmonella). The results of the examination showed good results and met health requirements.

Tabel 1.

Biological Laboratory Examination Results of Food Samples from Palembang Debarkation Aircraft

No	Batch	Date	Sample Name	Sample Origin	Parameters		Description
					E. Coli	Salmonella	
1	7	01 Juli 2024	Woku Chicken Rice, Long Beans	Saudia Airlines Catering	< 3,6	Neg	MS
2	7	01 Juli 2024	Padang Sauce Fish Rice	Saudia Airlines Catering	< 3,6	Neg	MS
3	7	01 Juli 2024	Blueberry, Pineaple, Cheese Cake	Saudia Airlines Catering	< 3,6	Neg	MS
4	7	01 Juli 2024	Mix Vegetables	Saudia Airlines Catering	< 3,6	Neg	MS
5	8	02 Juli 2024	Beef Spaghetti	Saudia Airlines Catering	< 3,6	Neg	MS
6	8	02 Juli 2024	Woku Chicken Rice, Long Beans	Saudia Airlines Catering	< 3,6	Neg	MS
7	14	10 Juli 2024	Cake Vanilla Cherry	Saudia Airlines Catering	< 3,6	Neg	MS
8	14	10 Juli 2024	Mix Vegetables	Saudia Airlines Catering	< 3,6	Neg	MS
9	14	10 Juli 2024	Rice Rendang	Saudia Airlines Catering	< 3,6	Neg	MS
10	14	10 Juli 2024	Pasta Noodles Beef	Saudia Airlines Catering	< 3,6	Neg	MS
11	15	11 Juli 2024	Cake Vanilla Cherry	Saudia Airlines Catering	< 3,6	Neg	MS
12	15	11 Juli 2024	Mix Vegetables	Saudia Airlines Catering	< 3,6	Neg	MS
13	15	11 Juli 2024	Chicken Opor Rice	Saudia Airlines Catering	< 3,6	Neg	MS
14	15	11 Juli 2024	Pasta Noodles Beef	Saudia Airlines Catering	< 3,6	Neg	MS

Description:
Standard Quality Value Refers to the Indonesian Minister of Health Regulation No. 02 of 2023
- E. Coli : < 3,6
- Salmonela : Negative
MS : Meets the requirements
TMS: Not Eligible

Food served at the Hajj dormitory

Upon the arrival of the pilgrims at the Hajj Dormitory Hall, the food provided in the dormitory is provided by the campus catering service. In addition, the regional committee provides food in the form of buffets, boxed rice, or wrapped rice that has been purchased from restaurants both inside and outside the Hajj dormitory. Only a small number of groups, namely those who decide to take a short break before returning to their home areas, offer this cuisine. Officers are given food samples of this type of food by regional officers. About once a week, random testing (not all groups) is used to check biological food. The number of germs and harmful germs (Salmonella and E. coli) are the parameters analyzed. The results of the examination showed good results and met health requirements. The results are as follows:

Table 2.

Results of Biological Laboratory Examination of Food Samples from the Palembang Debarkation Hajj Dormitory

No	Batch	Date	Sample Name	Sample Origin	Parameters		Description
					E. Coli	Salmonella	
1	3	24 Juni 2024	Roti Boy	Catering Hidayah Abadi	< 3,6	Neg	MS
2	3	24 Juni 2024	Roti Brownies	Catering Hidayah Abadi	< 3,6	Neg	MS
3	3	24 Juni 2024	Roti Keju Hidayah	Catering Hidayah Abadi	< 3,6	Neg	MS
4	8	02 Juli 2024	Brownies	Catering Hidayah Abadi	< 3,6	Neg	MS
5	8	02 Juli 2024	Roti	Catering Hidayah Abadi	< 3,6	Neg	MS
6	9	03 Juli 2024	Bolu Lapis	Catering Hidayah Abadi	< 3,6	Neg	MS
7	9	03 Juli 2024	Ubi Rebus	Catering Hidayah Abadi	< 3,6	Neg	MS
8	14	10 Juli 2024	Roti Keju	Catering Hidayah Abadi	< 3,6	Neg	MS
9	14	10 Juli 2024	Roti Boy	Catering Hidayah Abadi	< 3,6	Neg	MS

No	Batch	Date	Sample Name	Sample Origin	Parameters		Description
					E. Coli	Salmonella	
10	14	10 Juli 2024	Brownies	Catering Hidayah Abadi	< 3,6	Neg	MS
11	15	11 Juli 2024	Roti	Catering Hidayah Abadi	< 3,6	Neg	MS
12	15	11 Juli 2024	Ubi Rebus	Catering Hidayah Abadi	< 3,6	Neg	MS
13	15	11 Juli 2024	Kue Bolu	Catering Hidayah Abadi	< 3,6	Neg	MS

Description:
Quality Standard Value Refers to the Indonesian Minister of Health Regulation No. 02 of 2023
- E. Coli : < 3,6
-Salmonella :Negative MS: Meets requirement
-TMS : Does not meet requirements

Tool Swab Check

Biological examination of the cooking equipment of the Hajj dormitory catering service is carried out once a week with the result that there are still some pieces of equipment that do not meet the requirements where the number of germs is > 0. For this reason, it is necessary to carry out an evaluation of the maintenance/washing of equipment until its storage.

Table 3.
Results of Palembang Debarkation Equipment Swab Laboratory Examination

No	Batch	Date	Sample Name	Sample Origin	Germ Number	Description
1	3	24 Juni 2024	Capit Kue	Catering Hidayah Abadi	0	MS
2	3	24 Juni 2024	Nampan	Catering Hidayah Abadi	0	MS
3	8	02 Juli 2024	Talenan	Catering Hidayah Abadi	2	TMS
4	8	02 Juli 2024	Keranjang	Catering Hidayah Abadi	0	MS
5	9	03 Juli 2024	Wadah Plastik	Catering Hidayah Abadi	0	MS
6	9	03 Juli 2024	Nampan Logam	Catering Hidayah Abadi	1	TMS
7	9	03 Juli 2024	Pisau Dapur	Catering Hidayah Abadi	1	TMS
8	14	10 Juli 2024	Talenan	Catering Hidayah Abadi	1	TMS
9	14	10 Juli 2024	Nampan	Catering Hidayah Abadi	2	TMS
10	14	10 Juli 2024	Pisau Dapur	Catering Hidayah Abadi	2	TMS
11	14	10 Juli 2024	Rago	Catering Hidayah Abadi	3	TMS
12	15	11 Juli 2024	Rago	Catering Hidayah Abadi	0	MS
13	15	11 Juli 2024	Talenan	Catering Hidayah Abadi	1	TMS
14	15	11 Juli 2024	Pisau Dapur	Catering Hidayah Abadi	3	TMS
15	15	11 Juli 2024	Nampan	Catering Hidayah Abadi	2	TMS

Description
Standard Quality Value Refers to the Indonesian Minister of Health Regulation No. 02 of 2023
1) Pathogenic germs:0
2) Germ Number:0

Clean Water Monitoring

Clean water supervision is carried out by taking and checking the quality of clean water in the Hajj dormitory, aircraft, and catering kitchen of the Hajj dormitory, including physical, chemical, and biological examinations. The results are as follows:

Table 4.
Results of Clean Water Laboratory Examination of the Palembang Debarkation Hajj Dormitory

No	Batch	Date	Sample Name	Parameters			Description
				Physical	Chemistry	Biology	
1	3	24 Juni 2024	WC Aula Ashaj	MS	MS	TMS	TMS (total coliform dan jumlah E. coli > 0 CFU/100 ml)
2	8	02 Juli 2024	Resevoar Ashaj	MS	MS	TMS	TMS (total coliform dan jumlah E. coli > 0 CFU/100 ml)
3	8	02 Juli 2024	Mushollah Ashaj	MS	MS	TMS	TMS (total coliform dan jumlah E. coli > 0 CFU/100 ml)
4	9	03 Juli 2024	WC Aula Ashaj	MS	MS	TMS	TMS (total coliform dan jumlah E. coli > 0 CFU/100 ml)
5	9	03 Juli 2024	Resevoar Ashaj	MS	MS	TMS	TMS (total coliform dan jumlah E. coli > 0 CFU/100 ml)
6	19	15 Juli 2024	Resevoar Ashaj	MS	MS	TMS	TMS (total coliform dan jumlah E. coli > 0 CFU/100 ml)

Table 5.
Results of Clean Water Laboratory Examination of the 2024 Palembang Debarkation Hajj Aircraft

No	Batch	Date	Sample Name	Parameters			Description
				Physical	Chemistry	Biology	
1	3	24 Juni 2024	Pesawat	MS	MS	MS	Meets requirements
2	7	01 Juli 2024	Pesawat	MS	MS	TMS	TMS (total coliform dan jumlah E. coli > 0 CFU/100 ml)
3	8	02 Juli 2024	Pesawat	MS	MS	MS	Meets requirements
4	14	10 Juli 2024	Pesawat	MS	MS	MS	Meets requirements

Table 6.
Results of Clean Water Laboratory Examination of Palembang Debarkation Hajj Dormitory Catering Services

No	Batch	Date	Sample Name	Parameters			Description
				Physical	Chemistry	Biology	
1	3	24 Juni 2024	Catering Hidayah Abadi	MS	MS	TMS	TMS (total coliform dan jumlah E. coli > 0 CFU/100 ml)
2	8	02 Juli 2024	Catering Hidayah Abadi	MS	MS	TMS	TMS (total coliform dan jumlah E. coli > 0 CFU/100 ml)
3	9	03 Juli 2024	Catering Hidayah Abadi	MS	MS	TMS	TMS (total coliform dan jumlah E. coli > 0 CFU/100 ml)
4	14	10 Juli 2024	Catering Hidayah Abadi	MS	MS	TMS	TMS (total coliform dan jumlah E. coli > 0 CFU/100 ml)
5	15	11 Juli 2024	Catering Hidayah Abadi	MS	MS	MS	TMS (total coliform dan jumlah E. coli > 0 CFU/100 ml)

Based on the Regulation of the Minister of Health of the Republic of Indonesia No. 02 of 2023 concerning Environmental Health Quality Standards for Hygiene and Sanitation purposes.

- Total coliform : 0 CFU/100 ml
- Escherichia Coli : 0 CFU/100 ml

The findings of the examination showed that the clean water of the Hajj dormitory did not exceed biological standards, as E. coli bacteria were detected in it. Meanwhile, the culinary services for the Hajj dormitory and the water from the Hajj plane mostly met the standards. The findings are basically the same as the results of the analysis of clean water at the Hajj embarkation. Therefore, more research is needed on this topic. Many aspects need to be investigated, including water supply, distribution, collection, and analysis. In addition, if the test findings are only available more than 30 days after the samples are received, an assessment of the laboratory result delivery process should be carried out. To monitor and reduce similar situations in the future, more coordination is needed on this issue.

Drinking Water Monitoring

Monitoring the purity of drinking water is one of the many ways the Health Quarantine Office (BKK) contributes to the safety and well-being of Hajj pilgrims. The purity of drinking water provided to Hajj pilgrims is regularly tested by BKK. This involves testing for physical factors (such as turbidity and odor), chemical factors (such as heavy metals and harmful compounds), and microbiological factors (such as harmful microorganisms). By ensuring that pilgrims have access to safe, high-quality drinking water, this activity reduces health risks and contributes to the success of the Hajj.

Table 7.
Results of Laboratory Examination of Drinking Water at the Palembang Debarkation Hajj Dormitory

No	Batch	Date	Sample Name	Parameters			Description
				Physical	Chemistry	Biology	
1	3	24 Juni 2024	R. Tunggu Kedatngan Internasional	MS	MS	TMS	TMS (total coliform dan jumlah E. coli > 0 CFU/100 ml)
2	3	24 Juni 2024	Aula Asrama Haji	MS	MS	TMS	TMS (total coliform dan jumlah E. coli > 0 CFU/100 ml)
3	8	02 Juli 2024	Aula Asrama Haji	MS	MS	TMS	TMS (total coliform dan jumlah E. coli > 0 CFU/100 ml)
4	9	03 Juli 2024	Aula Asrama Haji	MS	MS	TMS	TMS (total coliform dan jumlah E. coli > 0 CFU/100 ml)
5	19	15 Juli 2024	Aula Asrama Haji	MS	MS	TMS	TMS (total coliform dan jumlah E. coli > 0 CFU/100 ml)
6	19	15 Juli 2024	Galon Aula Asrama Haji	MS	MS	TMS	TMS (total coliform dan jumlah E. coli > 0 CFU/100 ml)

Based on the Regulation of the Minister of Health of the Republic of Indonesia No. 02 of 2023 concerning Environmental Health Quality Standards for Hygiene and Sanitation purposes..
Total coliform : 0 CFU/100
Escherichia Coli : 0 CFU/100 ml

Aircraft Sanitation Inspection

Aircraft returning to Madinah, Saudi Arabia, as well as those entering, must undergo a sanitation inspection. The cleanliness of the aircraft, the condition of the food on board, physical inspection of food samples, water, and the presence of vectors, and completing the aircraft's surgical data by recording the number of cans used are part of the inspection. The results of the activity showed that each parameter was in good condition and met health standards. The discovery of a toilet that could not be used due to damage occurred only once.

DISCUSSION

Environmental Sanitation Supervision of Hajj Dormitories

The results of the activities are largely unchanged from the conditions during the embarkation activities, which generally meet the requirements but still need improvement. Examples include the provision of infrastructure and facilities and sanitation efforts, such as providing waste bins that comply with health regulations in each building to prevent littering, Installing mats at the entrance to the building and in areas close to the toilets Wastewater pipes must be cleaned to ensure smooth operation and prevent the development of vectors or unpleasant odors. According to (Kumaerah & Wahyuni, 2023) who evaluated the condition of the toilets in the public area of the Sukolilo Hajj dormitory building, the score was 28 (acceptable). different from the requirements of environmental media and environmental health quality standards. According to (Zaenab, 2024) almost all street vendors in Akcaya Park, Pontianak City, do not meet the requirements, according to the description of their hygienic sanitation methods and the presence of food pathogens (19 responses). All dealers do not have personal trash bins, and the food they sell is not stored in tightly closed containers. This shows that the cleanliness of food processing facilities must be maintained and sanitation conditions have a significant impact on microorganism contamination.

Supervision of Hajj Pilgrims' Services for Hajj Dormitories

The Hajj Dormitory catering service provider, PT. Hidayah Abadi, became the subject of the Hajj dormitory catering service supervision activity. The Hajj dormitory food service does not have a processing kitchen throughout the landing period, in contrast to the departure period. This may be because the menu only consists of foods such as cooked sweet potatoes, chocolate bread, Surabaya layered cake, cheese bread, chocolate brownies, mineral water, tea, and coffee, and the production is not very varied, only occurring once per group. The food service kitchen, which is located outside the Hajj dormitory, is where the production process takes place. The results of the activity indicate that, in general, the environmental conditions of the catering service meet the required standards.

Regulation of the Minister of Health of the Republic of Indonesia No. 942/MENKES/SK/VII/2003 supports the need for facilities that support the hygiene of food handlers, including handwashing facilities and soap and complete work clothes (gloves, masks, aprons, and hair coverings). A study by (Khuliyah Candraning Diyanah, 2021) found a correlation between personal hygiene of food handlers and the number of Escherichia in food at Jasaboga Asrama Haji Surabaya ($p = 0.001$; $p < 0.005$). The majority of handlers at Jasaboga Asrama Haji Surabaya failed to practice certain personal hygiene, including When handling other foods, 77.2% of food handlers used bare hands and did not wear gloves, tongs, or other safety equipment. Before, after, and after using the toilet, 61.4% of handlers did not wash their hands. 52.6% of people who handled food did not cover their heads while working. Food handlers generally practice good personal hygiene by not chatting while working, wearing aprons, keeping nails short, not wearing jewelry other than a simple wedding ring, wearing masks while working, and not eating or chewing while working.

Of the 36 employees at the Food Handler of the Palembang City Hajj Dormitory, 12 had poor personal hygiene (60%) and 8 had good personal hygiene (40%), while 3 female employees had poor personal hygiene (18.8%) and 13 had good personal hygiene (81.3%), according to research (Rahmi Garmini & Rio Purnama, 2023) The chi-square results show that there is a correlation between the personal hygiene of Class B Catering Service food handlers at the Palembang City Hajj Dormitory and their gender. Ho is rejected and Ha is accepted because the p-value is 0.031, which is less than the α value (0.05). According to (Nuralifah Maulidya Istiqomah, 2023) 37 of 54 respondents (68.5%) did not meet personal hygiene standards, while 17 of 54 respondents (31.5%) met the requirements.

Food Sample Collection, Inspection and Storage

The food served on the Hajj aircraft is prepared in the processing kitchen and by the Saudi Arabian catering service. Therefore, during the landing phase, the catering processing kitchen of the Hajj aircraft was not checked. Samples were taken to be used as a sample bank after the serving kitchen on the aircraft was monitored. This takes into account that only one sample package was provided. However, by eliminating sample storage in the sample bank, weekly food sample checks were still carried out at the BLKM Class I Palembang laboratory. The parameters examined were the number of germs and pathogenic germs (E. Coli and Salmonella). The results of the examination showed good results and met health requirements. According to (Rahma Adiyaksa Gea Doktriana et al., 2024) the Prabumulih Hospital nutrition installation follows the protocol; for dry food ingredients, it uses the FIFO and FEFO systems, which reduce expiration events. Each food ingredient is located at the top rather than below the channel. The final food sample is prepared so that it can be checked as evidence in case of poisoning.

According to RSUD Dr. A. Dadi Tjokrodipo Bandar Lampung, the food processing facilities are sturdy and hygienic, and wastewater disposal does not result in the formation of rat and insect homes. The cooking utensils used in food processing are not broken, dirty, or dissolved in acids, bases, or salts. They also do not emit harmful compounds. After use, the equipment is immediately cleaned and kept dry on shelves away from vectors. The eight people who handle food, one as a cook and four as waiters, are all healthy and free from infectious diseases. Twice a year, food handlers undergo routine health checks. Although they are equipped with aprons, hats, and plastic gloves, food workers do not wear masks. Before starting work and after using the toilet, food handlers always wash their hands with soap (Dini Rasika Sani, 2021). This is in line with RSUD Dr. A Dadi Tjokrodipo. According to the Regulation of the Minister of Health of the Republic of Indonesia number 1204 of 2004, all cooked food is placed in a closed container and then placed on a plate to be served to patients in a closed condition. The equipment used for this purpose must be safe and clean, and the food must not be contaminated (Dini Rasika Sani, 2021).

Clean Water Monitoring

The findings of the examination showed that the clean water of the Hajj dormitory did not exceed biological standards, as E. coli bacteria were detected in it. Meanwhile, the culinary services for the Hajj dormitory and the water from the Hajj plane mostly met the standards. The findings are basically the same as the results of the analysis of clean water at the Hajj embarkation. Therefore, more research is needed on this topic. Many aspects need to be investigated, including water supply, distribution, collection, and analysis. In addition, if the test findings are only available more than 30 days after the samples are received, an assessment of the laboratory result delivery process should be carried out. To monitor and reduce similar situations in the future, more coordination is needed on this issue. According to (Notoatmodjo S., 2011) Physiologically healthy water is clear (colorless), tasteless, and odorless, according to Notoatmodjo S. (2011). The five senses can be used to detect it. According to the Regulation of the Minister of Health No. 416/Menkes/Per/1990, pure water must meet the following criteria: (1) Quantity: a minimum of 60 liters of clean water per person per day can be accessed (2) Quality: clean water is available that meets bacteriological, chemical, and physical health standards. (3) Continuity: every activity that requires water continuously has access to clean water.

Findings from (Nuralifah Maulidya Istiqomah, 2023) showed that of the 54 respondents, 31 (57.4%) mostly did not meet the requirements for clean water supply, while 23 (42.6%) met the standards. The findings of this study contradict the findings of a study by Salma et al. (2015) that examined the relationship between the availability of clean water and food contamination by Escherichia. This study found that 6 (37.5%) restaurants with unqualified clean water supplies experienced food contamination by Escherichia, while 2 (13.3%) restaurants with qualified clean water supplies experienced food

contamination. Given that the statistical test produced a p-value = 0.220, it can be said that there is no significant correlation between the availability of clean water and food contamination by Escherichia. The use of clean water in restaurants is only for the purpose of washing food ingredients; in this case, cassava leaves, and then boiling them in hot water could be the cause. It is possible that bacteria in the washing water or the processing method died during the cooking process. According to the findings of another Syafran study from 2020, of the 150 traders surveyed, 140 (93.3%) admitted to using clean water for food processing, 86 (57.3%) used a separate handwashing area from the area for washing food ingredients and equipment, and 101 (67.3%) admitted to having a handwashing area with soap and running water.74 The findings of this study (Amita Satyaningsih, 2017) describe the condition of the sales location, and the findings of observations made for food hygiene and sanitation show that 100% of locations do not have clean water sanitation. Daily operations in the Hajj dormitory kitchen are greatly influenced by the availability of clean water that meets standards; starting with cleaning materials, equipment, and food preparation, water can function as a medium for transmitting disease if its quality does not meet health standards. Two important components that improve human health are clean water and proper sanitation.

Drinking Water Monitoring

Monitoring the purity of drinking water is one of the many ways the Health Quarantine Center (BKK) contributes to the safety and well-being of pilgrims; the purity of drinking water provided to pilgrims is periodically tested by BKK. This involves testing for physical factors (such as turbidity and odor), chemical factors (such as heavy metals and harmful compounds), and microbiological factors (such as harmful microorganisms). By ensuring that pilgrims have access to safe, high-quality drinking water, this activity reduces health risks and contributes to the success of the Hajj pilgrimage. According to (Purba, 2015) Four depots containing Escherichia and total coliform bacteria were found in refill drinking water samples in Jebres District, Surakarta City. 5. Five of the nine samples had Escherichia, according to laboratory examination results, and 55.5% of the samples did not meet the microbiological requirements for drinking water produced by depots in Bungus Padang Regency. 6 According to Pradana's research findings, of the eight refill drinking water depots analyzed, five did not meet the total coliform requirements based on laboratory examinations. 7. In addition, according to Saleh, 37% of AMIU in Pekalongan City did not meet bacteriological quality standards.

Raw water testing: water quality has met all requirements; turbidity level is the only metric that is still unknown. On the other hand, daily product water testing is limited to organoleptic parameters without recording; this includes smelling, drinking, and checking the water before packaging. Packaging can proceed if staff members consider the taste and purity of the product water as typical. Every month, CV Sumber Tirta Berkah Abdi conducts product water testing in accordance with SNI 01-3553-2015 to ensure the quality of its goods. Table 1 compares the quality control standards for AMDK products and how they are implemented at CV Sumber Tirta Berkah Abadi. 01-3553-2015 is the Indonesian National Standard (SNI) (Rosidah & Purwanti, 2021). There are 17 odor samples that meet the requirements, 17 taste samples, 17 color samples, 17 temperature samples, and 17 turbidity samples that meet the requirements, according to the research findings of various brands of bottled drinking water available in Makassar City. The Makassar Class I Environmental Health and Disease Control Engineering Laboratory (BTKLPP) examined the material (Abd. Gafur, 2016). The findings of the physical parameter evaluation test on bottled drinking water brands have met the standards set by the Minister of Health Regulation in 2010, according to research by M. Deril (2013). Water that is odorless, tasteless, colorless, clear, and below air temperature is considered to meet physical standards. According to Slamet (2005), the presence of living things such as algae, gases such as H2S produced in anaerobic environments, and certain organic compounds all contribute to the odor of water. Analysis of the odor of bottled drinking water revealed that all samples of bottled drinking water brands were odorless. This indicates that the water meets the

maximum levels allowed according to (Permenkes No. 2, 2023) about drinking water quality requirements. Drinking water quality standards and supervision are odorless and free from certain organisms and gases, including H2S, which are produced in anaerobic environments and can produce odors. For physical quality examination of the color of bottled drinking water samples, it shows that all bottled drinking water is colorless; all bottled drinking water samples do not show any organisms, suspended materials, or organic and plant compound extracts that can cause color in drinking water.

CONCLUSION

To achieve the strategic goal of achieving food security in consumer protection initiatives, distributors, producers, consumers, and the government with effective law enforcement must all be well informed and cooperative. To ensure that every link in the food security chain is safe, the country's strategy for building food security includes educating producers, consumers, and distributors.

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