

# Health Evaluation on Pilgrims Food in Hajj Dormitory Pondok Gede Jakarta

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**ABSTRACT**---*The implementation of pilgrimage is part of the health dimension that involves many people and requires special attention in the food supply because it has a great potential of outbreak of food poisoning. Therefore, it is necessary to hold food safety supervision so that the food consumed by the pilgrims meets the health requirements. The research methodology is descriptive, to describe the safety supervision activities on the pilgrims food. The result of sanitation inspection on the catering environment shows that 6 times (22%) did not meet health requirements. Laboratory test results showed 37.5% of food samples examined did not meet health requirements. So that it is necessary to optimize the supervision by involving cross-sector control so that the food consumed by pilgrims does not cause foodborne illness.*

**Keywords**--- Food Safety, Hygiene Sanitation, Knowledge of food health and environment

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## 1. PRELIMINARY

Food is a basic necessity for human life. Food safety is an important issue in public health. One of the main causes of mortality and morbidity in Indonesia is a disease caused by food. Food is the main line of the spread of pathogens and toxins produced by pathogenic microbes (1). Food consumed should meet some criteria, for example the food is edible and is not detrimental to health. Consuming food outside the home can contribute to greater incidence of food poisoning. Three factors contribute to foodborne disease are poor personal hygiene, cross-contamination, and air temperature in food storage (2).

WHO released new data about the harm caused by foodborne diseases, as well as the global threat posed by unsafe food. Analytical results from the WHO shows that 582 million cases from 22 different foodborne diseases have been reported in 2010, with 351,000 deaths from the disease, including Salmonella, *E. coli* and norovirus. These gave a great impact on public health and economic conditions (3).

The incidence of food poisoning can happen anywhere, anytime, and may be caused by substances that are already in the food when eaten (4). Extraordinary events (KLB) of food poisoning were frequently reported as a result of consuming food outside the home such as catering during particular events (5). Data of incidence of food poisoning indicate that 30% of cases of poisoning in Indonesia caused by the food produced by catering services (5). In 2011, there were 128 cases of extraordinary events of food poisoning from 25 provinces with *Attributable Risk* (AR) of 38.10%, *Case Fatality Rate* (CFR) of 0.16%, and *Incidence Rate* (IR) of 2.91 (6).

Food contamination caused by *E. coli* in accordance with the type of food processing in Indonesia, from the highest to the lowest, occurred in street merchants (40.7%), Catering services (38.2%), Restaurants inside hotel (33.3%), Stalls (32.9%), Restaurants outside Hotel (31.3%), and Food Industry (21.3%) (Department of Health, 1984 in Djaja, 2008). The results of research related to *E. coli* contamination of foods from three food processors in Jakarta in 2003 showed that contamination of foodstuffs, from the highest to the lowest, occurred in street merchants (51.8%), Catering services (38.8%), and Restaurants (29.4%) (7).

The supply of food for the pilgrims has a broad range of services and have a greater risk, so that the supply of food should be carried out by Catering Services Group B (Regulation of the Minister of Health of the Republic of Indonesia No. 1096 / MENKES / PER / VI / 2011). Catering Services group B, namely catering services that serve special needs (for example) for dormitory of pilgrims.

The implementation of pilgrimage is part of the health dimension that involves many people. Jakarta X Hajj Dormitory in 1435 H / 2014 AD accommodated pilgrims as many as 5,668 people, divided into 13 groups of flying.

Catering Service which served the supply of food was handled by CV. H. Catering as the winner of tender for the procurement of food supply for the pilgrims in Jakarta X Hajj Dormitory.

This required special attention, especially in the food supply because it had great potential outbreaks of food poisoning. Therefore, it needs food safety supervision so that the food consumed by the pilgrims met the health requirements.

## 2. RESEARCH METHODS

This research was descriptive study with an observational design, to identify a description of food safety supervision activities conducted by the Health Office of Class I Port of Soekarno Hatta Airport on the Hajj embarkation activities in Jakarta Pondok Gede Hajj Dormitory 1435 H / 2014 AD. Descriptive study is a study that aims to present or describe a situation or phenomenon that occurs at this time by using scientific procedures to address the issue in an actual way (8) and a method which seeks to interpret or describe something (9).

Food safety supervision activities in the pilgrim embarkation Pondok Gede included the sanitation inspection of Catering Service environment and the sampling activities such as food, drinking water, tool napkins, hand napkins for bacteriological laboratory test once a week, as well as rapid chemical tests of food every day. The results of bacteriological tests were analyzed in accordance with the Regulation of the Minister of Health of the Republic of Indonesia No. 1096 of 2011 on the Terms of Catering Services.

## 3. RESULTS OF ACTIVITY

The inspection of Catering Services sanitation was performed every day during embarkation. From the 27 times of Sanitary examination of Catering Service there were 6 examinations (22%) which showed not good results because unqualified objects were found in the kitchen, dining room, food preparation place, warehouse, equipment, water, waste management and employees. The results of sampling activities of the food can be seen in the following table.

**Table 1.** Results of bacteriological examination of food and water in Jakarta Pondok Gede Hajj Dormitory of 1435 H / 2014 AD

Sample	Results	
	MS	TMS
Food	9	3
Tool Napkins	2	2
Hand Napkins	4	0
Drinking Water	0	4
Total	15	9

Note :

MS: Qualified, TMS: Unqualified

Based on Table 1, it was found that there were 15 qualified samples (62.5%) of food and water and 9 unqualified samples (37.5%) of food and water due to two samples of food (egg balado) positively contained *Escherichia coli*; 1 sample (omelet) positively contained *Salmonella sp*; 1 plate and 1 tablespoon were detected contained ALT which exceeded the required standard; and 4 samples of drinking water "brand O" positively contained *Coliform* and *Escherichia coli*.

In addition, the results of chemical tests (rapid test) on foods such as stuffed tofu, vegetables, tofu vegetables, raw tuna, fillet snapper (three tests) and fried snapper have found that they positively contained formalin; hunkue cakes positively contained Rhodamine B and meatballs positively contained borax.

## DISCUSSION

The sanitation examination of Catering Service environment still found variables at risk such as the dirty kitchen, the lack of hygiene of food handlers, poor waste management, and the high population of flies. The environmental sanitation was still not good. This showed that the catering manager was lack of attention to the Food Sanitation Hygiene and this might lead to the contamination of food. Sources of contamination can be derived from humans, animals and the environment (soil, air and water as well as waste generated). Transmission of food contamination can be derived from cross contamination, food processors / handlers, insects, rodents and house dust.

The results of bacteriological quality test of the food showed that there were still unqualified samples of (37.5%). This is very dangerous because it can potentially cause foodborne illness.

The processing of foods that did not pay attention to the six principles of food hygiene sanitation would contribute to the risk of biological contamination either from peeling an egg with a hand that was not sterile and mixing the Balado eggs with herbs that were not cooked again (10).

Results of laboratory test on the tool napkins for spoons and plates showed that the ALT exceeded the required standard. This was because of the method of washing that did not use hot water or disinfectant materials.

Results of laboratory test of drinking water "brand O" in four times tests has found that the drinking water positively contained *Coliformand Escherichia coli*. This was not in accordance with the Regulation of the Minister of Health of the Republic of Indonesia No. 492 of 2010 on Drinking Water Quality Requirements. Although health officials as food safety supervisor have delivered the bacteriological test results as soon as possible, but until the end of the this activity the catering service has not replaced it with other brands.

According to estimates, about 70% of cases of diarrheal disease occur due to the use of contaminated drinking water and water used to prepare food (11; 12). The role of water in the transmission of diarrheal diseases cannot be ignored because water is an ingredient in foods and beverages and also used for washing hands, food ingredients, as well as equipment for cooking or eating. If the water is contaminated and the proper hygiene is not practiced, the food produced is likely to be contaminated. It was formerly believed that water was a medium of transmission of cholera. However, more results of epidemiological studies show that food is also an important medium of disease transmission (13).

The results of food chemistry rapid tests also showed that some of the food was detected that there were harmful chemicals such as formaldehyde, Rhodamine B, and borax. This indicated that the catering service had no quality control of the raw materials of food. Food that will be processed should not contain dangerous substance because it can cause health problems (10).

Serious problems often arise when the food is not properly processed or is contaminated by bacteria that often cause food poisoning outbreaks. Food poisoning through the process of intoxication and bacterial infections generally occurs because of the lack of sanitation or hygiene and poor storage condition (14; 15).

The knowledge of hygiene sanitation of foods and beverages, as well as the health behaviors has a relationship with the incidence of food poisoning which includes the selection of foodstuffs, storage of foodstuffs, food processing in accordance with the Good Manufacturing Practice (GMP), storage of cooked food, food transport, and serving of food (10). Some principles of sanitary hygiene of foods and beverages may be overlooked in the process of food processing by Catering Service which serves the provision of food, especially when there is a large amount of food to be served, coupled with the crowded situation.

Materials used in the food production process, either in the form of raw materials, additives and auxiliary materials, basically should be stored in a good storage method in a good environmental health too. Errors in the storage process may result in a decrease in the quality and safety of food (food may be damaged). The damage of food is caused by contamination of food by bacteria (natural / human treatment), the existence of enzyme (fruit ripening), as well as mechanisms (friction, impact, pressure).

A proper food processing follows the rules of the principles of hygiene and sanitation. All food processing activities should be carried out by protecting food from direct contact with the body. Protection of direct contact with food is carried out by using plastic gloves, food tongs (16).

The food processing must meet the sanitary hygiene requirements, especially by maintaining the cleanliness of cooking utensils used, the place of processing or kitchen and the hygiene of food handlers. The place of processing or kitchen has an important role in the food processing, therefore the cleanliness of the kitchen and the environment must be maintained and cared for, and must meet the sanitary requirements. Processing personnel are those that have direct contact with the food and equipment ranging from the preparation, cleaning, processing, transportation until the serving of food. Food handlers must have clean hands, always healthy and skilled (free of disease) because employees are important sources of contaminants.

However, the most important factor is the consumer. The pilgrims should wash their hands first before eating. It's a better protection to prevent the harmful microbes and organisms moving from the hands to the digestion organs.

In the process of food storage, the temperature must be adjusted to the food characteristic in order to avoid damage, and the use of food materials must apply the FIFO (First In First Out) method. There may be variety of techniques of food presentation to the consumers as long as they still pay attention to the rules of hygiene sanitation. There should not be direct contact with the food served. The pilgrims should consume foods that are distributed at that time (they should not postpone eating food that has been served since the food will be damaged more than two hours after being packed). Air does not contain natural microbial flora, but the particles of dust and water droplets contained in the air can carry microbes (weather factor only accelerates the process of decay), however the factor of unsuitable temperature and processing times has been the risk factors that often cause food poisoning (17). Therefore, it is necessary to improve the knowledge of pilgrims through "*manasik*" and when they are at the dormitory. Thus, "*manasik*" does not only function as the briefing of the Hajj rituals but it can also be used to improve the knowledge of the pilgrims to behave cleanly and healthy so that the pilgrimage can be carried out smoothly.

Other factor that influences the incidence of food poisoning, in addition to poor personal hygiene, unhealthy handling of food and unsterilized food processing equipment is the lack of knowledge in caring for the health of themselves and their surroundings in the process of processing the good and healthy food (18). Increased knowledge of food safety and environmental health for the employees is also very important to note so that they can behave cleanly and healthy. Contaminated environment is a factor that can affect food safety. Lack of clean water, poor sanitation, lack of

facilities for cold storage of food and lack of fuel for cooking can be obstacles in the preparation of safe food and may lead to conditions that facilitate the incidence of foodborne diseases. Water is a carrier of more diseases than food, so it needs to be treated to eliminate and control the contamination. The necessary treatment is such as the improvement of knowledge of a clean and healthy environment, strict supervision and warning even strict sanctions.

Food safety is the community needs, because the safe food will protect and prevent the occurrence of disease or other health problems. Essentially, food safety is an effort to ensure the hygiene of food sanitation, nutrition and safety. The hygiene of food sanitation is a control of factors of foods, people, places and equipment that may or may lead to illness or other health problems. Various efforts to prevent biological hazards can be carried out such as the handling of food in clean condition and sanitation, the proper and correct cooking process (especially the preparations of meat and other processed meat), avoiding cross-contamination, safe storage, and application of hygiene and sanitation for employees, equipment, and the surrounding environment, as well as avoiding the use of foodstuffs derived from the unclear sources because the quality cannot be ensured (19).

#### 4. CONCLUSION

The supervision of food safety of pilgrims in Pondok Gede embarkation of 1435H / 2014 AD was not optimal; the results of inspection in the Catering Service showed that there were still sanitation and foods that did not meet health requirements. Knowledge and behavior of employees must be increased to improve service.

#### 5. SUGGESTION

It is necessary to establish cross-sector cooperation, especially by granting authority to Port Health Office in the supervision and implementation of the food provision for the pilgrims. In addition, it is necessary to hold counseling, training, and evaluation of catering service employees after winning the tender. Evaluation of catering after every Hajj season end as a consideration for Ministry of Religious Affairs of the Republic of Indonesia, and the Ministry of Health of the Republic of Indonesia in taking a decision for next Hajj season.

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