

Testing the Germ Number on Tableware at Roadside Stall Mas Joko in Palu City in 2021

Atikah Pratiwi¹, Finta Amalinda^{2(*)}, Eka Prasetya Hati Baculu³, Irfan⁴

^{1,2,3}Faculty of Public Health, Universitas Muhammadiyah Palu, Indonesia

⁴RSUD Tora Belo, Sigi, Indonesia

*Corresponding Author, Email: finta274866@gmail.com

ABSTRACT

Cutlery is one factor that plays a role in transmitting disease because eating utensils that are not clean and contain microorganisms can share conditions through food (foodborne illness). The purpose of this study was to determine the test results for the number of germs on tableware at Roadside stall Mas Joko in Palu City in 2021. The type of research was descriptive with an observational approach. With a total of 8 samples from Roadside stall Mas Joko in Palu City. The results of the examination of samples taken at Roadside stall Mas Joko, Palu City, it was found that install one the inspection of the plate sample was 372 CFU/cm², the glass sample was 420 CFU/cm², Roadside stall 2 plate sampled 290 CFU/cm², the glass sample was 353 CFU/cm², stalls 3 sample plates 148 CFU/cm², glass samples 363 CFU/cm², and stalls 4 sample plates 465 CFU/cm², glass samples 371 CFU/cm². Based on the results obtained, it can be said that the tableware in the four Roadside stall Mas Joko has not met the requirements; this is based on the Minister of Health No. 1096 of 2011 concerning hygiene sanitation of catering services, which requires all tableware to be 0 CFU/cm². Suggestions For the Puskesmas, especially sanitation installations, it is better to routinely provide counselling to food stall owners to always pay attention to the cleanliness of their eating utensils by Permenkes No. 1096 of 2011 concerning Hygiene Sanitation for Catering services which require tableware to be 0 CFU/cm².

Keywords – Number of bacteria; Tableware YHJ

INTRODUCTION

Law No. 36 of 2009 article 48 states that the implementation of health efforts in the form of activities with promotive, preventive, curative, and rehabilitative approaches that are carried out in an integrated, comprehensive, and sustainable manner, is carried out through activities, one of which is food and beverage security supported by health resources (1). The principle of food hygiene and sanitation is an effort to control 4 (four) food health factors that can or may cause health problems or food poisoning, namely places/buildings, equipment, people and food (2). Cutlery is one of the factors that play a

role in transmitting disease because eating utensils that are not clean and contain microorganisms can share disease through food (foodborne illness) (3).

The hygiene quality of cutlery in Kepmenkes No. 1096 of 2011 states that the number of germs on cutlery must be 0 CFU/cm². The quality of the cleanliness of tableware can be caused by improper washing techniques and the use of water that does not meet the requirements (4). Palu City is the Capital of Central Sulawesi Province. Like other cities in general, Palu City can be pretty dense; there are Universities, Schools and Offices. One of the most popular places to eat in Palu is the Mas Joko stall. This restaurant is famous for being cheap and easy to find, making it the right choice for all people, from students to office workers.

Based on the description above, the author is interested in further researching the description of the number of germs on the tableware of Mas Joko's stall in Palu City. Another reason researchers are interested in this problem is because this problem has never been studied before, so this can be input for relevant agencies to prevent food-borne diseases and can be a reference for further researches. The eating utensils that will be examined are plates and glasses. The author checks the forks because the average visitor to Roadside stall Mas Joko eats by hand, so the author does not include a spoon as an inspection sample.

METHOD

This type of research is descriptive with an observational approach where this study aims to determine the germs on the tableware of Roadside stall Mas Joko in Palu City. The time of the research was carried out in June 2021. A sampling of this research was carried out at the Mas Joko shop in Palu City. The examination of germ numbers was carried out at the Food and Beverage Laboratory of the Health Polytechnic of the Palu Ministry of Health Department Environmental Health. The population in this study were all Mas Joko stalls in Palu City. The sample in this study was 4 Mas Joko stalls from 4 sub-districts in Palu City. Each stall was taken five plates and five glasses as research samples.

RESULTS

Based on the results of bacteriological examinations on tableware in the form of plates and glasses at four Mas Joko stalls in Palu City, which were carried out at the Environmental Health Laboratory of the Health Poltekkes, the Ministry of Health, Palu, the results can be seen in the table:

Table 1. Bacterial Colony Calculation Results on Glass Samples

No.	Sample	Results Examination (CFU/cm²)
1.	Roadside stall 1	Glass 372*

2.	Roadside stall 2	Glass	290*
3.	Roadside stall 3	Glass	148*
4.	Roadside stall 4	Glass	465*

Note: Permenkes No. 1096 of 2011 concerning Food Service Sanitation Hygiene, fulfills the requirements if the number of germs on cutlery is 0 CFU/CM2

*: Exceeding the Normal Limit

Table 2. Bacterial Colony Calculation Results on Plate Samples

No.	Sample		Check up result (CFU/cm ²)
1.	Roadside stall 1	Plate	420*
2.	Roadside stall 2	Plate	353*
3.	Roadside stall 3	Plate	363*
4.	Roadside stall 4	Plate	371*

Note: Permenkes No. 1096 of 2011 concerning Food Service Sanitation Hygiene fulfills the requirements if the number of germs on cutlery is 0 CFU/cm2

*: Exceeding the Normal Limit

Table 3. Bacterial Colony Calculation Results on Glass and Plate Samples

No.	Sample	Results Inspection (CFU/cm ²)	
1.	Roadside stall 1	Glass	372*
		Plate	420*
2.	Roadside stall 2	Glass	290*
		Plate	353*
3.	Roadside stall 3	Glass	148*
		Plate	363*
4.	Roadside stall 4	Glass	465*
		Plate	371*

Note: Permenkes No. 1096 of 2011 concerning Food Service Sanitation Hygiene fulfills the requirements if the number of germs on cutlery is 0 CFU/cm2

*: Exceeding the Normal Limit

At each Mr Joko's stall, five samples of plates and five samples of glass were taken, the average results were obtained on the glass stall 1 (372 CFU/cm2), plate stall 1 (420 CFU/cm2), glass stall 2 (290 CFU/cm2), Roadside stall plate 2 (353 CFU/cm2), Roadside stall glass 3 (148 CFU/cm2), Roadside stall plate 3 (363 CFU/cm2), and Roadside stall 4 (465 CFU/cm2), and shop plate 4 (371 CFU/cm2). Table 3 shows that cutlery in the form

of plates and glasses in 4 of Mas Joko's stalls in Palu City all contain colonies of germs. These results indicate that the eating utensils at Mas Joko's booth in Palu City do not meet the requirements of health standards because, based on Permenkes No. 1096 of 2011 concerning hygiene, sanitation, catering services, equipment must not contain germ colonies or must be 0 CFU/cm².

DISCUSSION

The inspection results at four mas Joko's stalls in Palu City did not meet the requirements. Based on observations made by researchers, the factors that cause germs on eating utensils in the form of plates and glasses at the Mas Joko shop in Palu are:

Roadside stall A sometimes uses running water to rinse the cutlery; periodically, rinse it with water stored in a dirty container. Cutlery that has been washed is only stored on the table because there is no special shelf for storing cutlery, the cloth used to dry dirty cutlery.

Roadside stall B uses a detergent that has been used repeatedly and has not been replaced so that it does not use foam and has been mixed with the rest of the food. Cutlery that has been washed is stored on the same table with raw food ingredients such as vegetables and tempeh to allow bacterial contamination from food ingredients to cutlery.

Roadside stall C. Cutlery in the form of plates and glasses before use is not stored in a secure place, so that it can cause contamination by dust, germs, insects and rats because there is no shelf or area for the drying process the equipment.

Roadside stall D, the process of washing cutlery only uses water accommodated in buckets and pans that are already mossy. The cloth used to dry tableware has been used repeatedly and has not been replaced, thus allowing bacterial contamination from the fabric to the silver.

The process of washing tableware is excellent and correct based on Permenkes No. 1096 of 2011 includes: There is a place for washing equipment, if possible separate from the site for washing food ingredients, washing equipment must use cleaning agents/detergents, washing food ingredients that are not cooked or eaten raw must be cleaned using a solution of Potassium Permanganate (KMnO₄) with a concentration of 0.02% for 2 minutes or chlorine solution with a concentration of 70% for 2 minutes or immersed in boiling water (temperature 80°C - 100°C) for 1 – 5 seconds. Cleaned utensils and food items are stored in a place protected from contamination by insects, rats and other animals (5).

Food safety is a condition and effort needed to prevent food from being contaminated by biological, chemical and other objects that can interfere, harm and endanger human health and do not conflict with religion, belief and culture of the community so that it is safe for consumption (6). Food safety is closely related to biological, physical, chemical and technological hazards, and this is to ensure food safety is to minimize dangers to food (7).

Biological or microbiological hazards consist of parasites, viruses and pathogenic bacteria that can grow and develop in foodstuffs, causing infection and poisoning in humans. Natural hazards are often caused by bacterial contamination (8). Biological contamination is living organisms that are contaminated with food. Types of micro-organisms that contaminate food are bacteria, fungi, parasites, and viruses (8).

This research is in line with the study by Telew Marcelina et al. (2018), entitled "An Overview of Germ Numbers and the Presence of Escherichia Coli in Manakin House Tableware in the West Mahakeret and East Mahakeret Villages, Wenang District, Manado City". Based on the results of the examination of the number of germs on cutlery, spoons and forks using the cutlery swab method at the West Mahakeret and East Mahakeret Village Restaurants through laboratory examination of the six restaurants (100%) that were examined, all of them were declared ineligible (9). Another study conducted (Syahlan Vioni LG et al., 2018) entitled "Food Management Sanitary Hygiene and Germ Numbers for Tableware (Plates) at the Nutrition Installation of the Pancaran Kasih Gmim General Hospital, Manado City" obtained the results that the number of germs on tableware in classrooms 1 with sample code 01. a with ample bowl cutlery containing the most germ numbers with a total germ number of 72,000 colonies/cm² and the least small bowl cutlery in class 1 with sample code 01. b with a total germ number of 28,000 colonies /cm². Based on these results, all samples taken did not meet the requirements with germ numbers > 0 CFU/cm² with the provisions referring to the Minister of Health No. 1096 of 2011 concerning hygiene sanitation of catering services, which requires all tableware to be 0 CFU/cm² (10).

The weakness of this study is that the author only checked the presence of bacterial colonies on the tableware and did not examine what germ species contained and contaminated the silver. The examination results are then adjusted based on the standard number of germs on eating utensils according to the Minister of Health No. 1096 of 2011 concerning Food Service Hygiene and Sanitation.

CONCLUSION

This study concludes that Roadside stall Mas Joko in Palu City obtained the results that install one the inspection on the plate sample was 372 CFU/cm², the glass sample was 420 CFU/cm², Roadside stall 2 plate sampled 290 CFU/cm², the glass sample was 353 CFU/cm², stalls 3 sample plates 148 CFU/cm², glass samples 363 CFU/cm², and stalls 4 sample plates 465 CFU/cm², glass samples 371 CFU/cm². Based on the results obtained, it can be said that the tableware at the four Roadside stall Mas Joko has not met the requirements. This is based on the Minister of Health No. 1096 of 2011 concerning hygiene sanitation of catering services, which requires all tableware to be 0 CFU/cm².

SUGGESTION

Suggestions for the Puskesmas, especially sanitation installations, should routinely provide counselling to food stall owners to always pay attention to the cleanliness of their eating utensils to comply with the Minister of Health Regulation No. 1096 of 2011 concerning Hygiene Sanitation for Catering services which require tableware to be 0 CFU/cm².

REFERENCE

1. Handayani L, Tilly AA, Rampen H. Study of Law No. 36 of 2009 Regarding Quality Family Planning Programs in Realizing the Norms of Happy and Prosperous Small Families. 2011;
2. Yulia Y. Sanitation Hygiene of Food, Beverages and Sanitation Facilities on the Germs Number of Eating and Drinking Utensils in the Canteen. *J Vokasi Kesehat.* 2016;2(1):55-61.
3. Todd ECD, Greig JD, Bartleson CA, Michaels BS. Outbreaks where food workers have been implicated in the spread of foodborne disease. Part 6. Transmission and survival of pathogens in the food processing and preparation environment. *J Food Prot.* 2009;72(1):202-19.
4. Kepmenkes RI. Health of both mother and child. Jakarta; 2011.
5. Fortuna D. Techniques For Washing Utensils With German Number On Joss Coffee Traders Around Wongsodirjan Street Yogyakarta In 2020. Poltekkes Kemenkes Yogyakarta; 2020.
6. Zazili A. The Urgency of Supervision of Food Safety Based on a Risk Management System for Consumer Protection. *Supremasi Huk J Penelit Huk.* 2019;28(1):57-70.
7. Wagacha JM, Muthomi JW. Mycotoxin problem in Africa: current status, implications to food safety and health and possible management strategies. *Int J Food Microbiol.* 2008;124(1):1-12.
8. Bacon RT, Sofos JN. Characteristics of biological hazards in foods. *Food Saf Handb.* 2003;10:157-95.
9. Telew M, Joseph WBS, Pinontoan O. Description Of German Numbers And The Presence Of Escherichia Coli On Tablet Attentions In Households In West Mahakeret And East Mahakeret Sub-District, Wenang District, Manado City. *KESMAS.* 2019;7(5).
10. Syahlan VLG, Joseph WBS, Sumampouw OJ. Food Management Sanitation Hygiene and Germ Numbers of Tableware (Plates) at the Nutrition Installation of Pancaran Kasih General Hospital GMIM Manado City. *KESMAS.* 2019;7(5).