JURNAL KESEHATAN LINGKUNGAN
JURNAL DAN APLIKASI TEKNIK KESEHATAN LINGKUNGAN

ISSN 1829-9407 (Print)
ISSN 2581-0898 (Online)

Volume 21, No. 2, July 2024 ; Page: 351-356; DOI: https://doi.org/10.31964/jkl.v21i2.727

THE PROCESS OF WASHING TABLEWARE AT CULINARY TOURISM CENTERS

Maura Vionabella, Rusmiati, Ernita Sari, Suprijandani
Environmental Health, Ministry of Health Polytechnic Surabaya, Indonesia
Jl. Pucang Jajar Tengah No. 56 Surabaya 60282
E-mail: tigtafa02@gmail.com

Article Info

Article history:

Received September 4, 2023
Revised June 30, 2024
Accepted July 01, 2025

Keywords:

Dinnerware
Culinary Centers
Tourism
Germ Numbers
Total Coliform

ABSTRACT

The Process Of Washing Tableware At Culinary Tourism Centers. Culinary Tourism Centers must ensure proper tableware washing processes to prevent health risks. Preliminary tests on 12 tableware vendors at the Culinary Tourism Center found that 6 sets of utensils did not meet quality standards. This study aimed to assess the washing process of tableware in the Culinary Tourism Center. The research was descriptive, with purposive sampling. Data collection involved observations and laboratory tests, analyzed descriptively using tables, narratives, and summaries. Laboratory test results showed that several types of tableware, including plates, spoons, forks, and glasses, had germ counts exceeding the standard limits. The bacteriological quality of the clean water used also did not meet requirements, with Total Coliform levels reaching 48 CFU/m^2. Observation findings revealed that 40% of washing practices failed to meet qualifications due to noncompliance with established procedures. The study concludes that both the bacteriological quality of certain tableware and the clean water used for washing are below acceptable standards. In addition, some washing processes remain unqualified according to the prescribed guidelines. It is recommended that vendors pay greater attention to proper tableware washing techniques, improve their knowledge and practices, and routinely drain water storage tanks to maintain water quality.

INTRODUCTION

Food is important for human life because it provides energy and nutrients, builds new tissues in the body, regulates and prevents diseases, and provides a source of replacement for old body cells [1]. Foodborne disease is a disease that can be transmitted through food contaminated with bacteria. Bacteria can infect food materials, liquettes, food containers, serving hands, or banquets [2]. Tableware is the main factor in the spread of disease because unhygienic tableware can spread disease through food [3].

Cases of food poisoning often occur in various places where cleanliness is not guaranteed, such as when the tools used are unhygienic and exposed to street dust due to heavy traffic. Symptoms of food poisoning are a dry mouth and difficulty swallowing [4]. Contamination Food contamination can occur when food comes into direct contact with unhygienic tableware, containing microorganisms that can cause indigestion in humans [5].

The Surabaya City Health Office reported that there were four types of extraordinary events (KLB) in 2019. Food poisoning cases rank highest in the KLB, accounting for 16 cases in the 5–9 year age group and 1 case in the 20–44 year age group [6].

Hygiene and sanitation problems are so crucial, especially in locations that are visited by the public. Public places such as hospitals, food stalls and traders along the way often offer various food and drinks to the people who are active there [7]. A restaurant that offers a variety of foods cannot guarantee the quality of food hygiene. Pollution can occur at any time, especially when the tableware used is unhygienic [8]. The correct way to wash tableware is to separate dirt and food containers from it, soak, wash with soap, rinse with clean running water, drain, soak with hot water, and dry.

The Surabaya City Government has established a Culinary Tourism Centre, which aims to make it easier for buyers or visitors to find the food they want in one area. This centre has a capacity of 40 stands. According to the preliminary test results, six out of twelve traders were not eligible. The observations reveal that many traders fail to use protective equipment on food utensils after washing them, leading to cracks in the plates and improper cutlery washing. This condition is suspected to contribute to the presence of germs in the tableware. According to Amallia (2021), traders with poor washing and storing tableware techniques cause the number of germs to not meet the standards. [9]. The purpose of this study is to describe the process of washing tableware in the Culinary Tourism Centre.

MATERIALS AND RESEARCH METHODS

The following study uses a descriptive research design to describe the washing process at the Culinary Tourism Centre. This research was carried out from December 2022 to May 2023. The study's variables included the number of germs present in tableware such as forks, plates, spoons, and glasses, the total coliform count in clean water, and the method used for washing the tableware.

The study population is all traders in the Culinary Tourism Centre, as many as 28 traders. A total of 5 traders and 20 tableware items in the form of plates, spoons, forks, and glasses, as well as 1 point of clean water, were designated as research samples. The number of samples is determined by purposeful sampling, which involves certain considerations or benchmarks. According to PMK No. 14 of 2021, the observation sheet is used as a tool for assessing the tableware washing process. Referring to PMK No. 2 of 2023, tests were done in the lab to find out how many germs were on the dishes and how clean the water was in terms of total coliform parameters. We conducted observation to determine if the subject's actions during physical contact with food aligned with their achievements and the established qualifications. Tabulation and editing were used to process the research data. The laboratory test results and observation data were analyzed descriptively using tables and described in a narrative manner.

RESEARCH RESULTS AND DISCUSSION

Germ Numbers on Cutlery

Table 1. Results of Examination of Germ Numbers on Tableware at Culinary Tourism Centers

No.	Center Name	Types of Cutlery	Result		Percentage (%)
			MS	TMS	
1.	Culinary Tourism Center	Piring	3	2	60%
		Sendok	4	1	80%
		Garpu	5	0	100%
		Gelas	3	2	60%
	Σ		15	5	75%

Based on table 1, it can be concluded that the cutlery that is eligible for cutlery is 60%, the spoon is 80%, the fucking stupid pakistan kenyak is 100%, and the glass is 60%. The presence of germs in tableware at five outlets in the Culinary Tourism Centre in 2023 is due to the absence of a process of separating food waste first, washing without soap, and drying tableware without using a clean cloth.

Aspects that influence the number of germs in tableware include the basic material of the tableware, the initial state of the tableware, the water used for washing, the bucket used for cleaning, and the capacity of the washing machine [10]. The materials used must be considered, namely safe materials that do not pose a risk of surface coating; equipment that does not release harmful substances and toxic metals; chemicals and pesticides that are stored in a separate room away from food processing areas and washing areas [11].
Incorrect washing techniques have a risk of food contamination with bacterial microorganisms [12]. This research aligns with the findings of Aulia Mulya et al. (2021), which suggests that improper washing techniques, such as flushing or soaking, can influence the quantity of germs in tableware when cutlery slices are placed in an open rack, potentially leading to contamination [13].
According to Sahani, W., et al. (2020), the results of the use of cutlery, such as ompreng, bowls, spoons, glasses, and plates, do not meet health requirements due to the washing process, poor storage methods, and the continuous use of washcloths during the drying process, which blend in from the moist and unprotected location where the food is stored. [14].
To reduce the number of germs on the tableware, wash the utensils with laundry soap or detergent, use hot, cold water to break down fat and oil, and use three tub containers for the washing process. The first tub serves as a washing tub, the second is used for rinsing, and the final three rinses are equipped with disinfectants, which you can apply while the water is flowing. After washing the equipment, drain it until it dries without wiping it with a cloth, a process made possible by sunlight. The equipment is then stored in a closed or special place that is guaranteed to be clean and protected from dust and destructive animals. [15].

Microbiological Quality of Clean Water

The total Coliform in clean water at the Culinary Tourism Centre reaches 48 CFU/100 ml, meaning that the Coliform in clean water does not meet the requirements According to the Regulation of the Minister of Health No. 2 of 2023, which requires a total colony of 0 CFU/100 ml,
The clean water used in the Culinary Tourism Centre is sourced from PDAM water, which is stored first in the reservoir. Many factors, such as pipe leaks or loose connections, and a lack of water pressure in the pipes, can lead to water pollution and bacterial infestation.
According to research by Cholid et al. (2022), there is a relationship between the material of tableware, the washing process, and the quantity of germs. If tableware is broken or not whole, or if the washing process doesn't follow the rules, it means that the cleaning and washing of the tableware isn't done right, and 50 CFU/100 ml of coliform is produced [16].
When bacteria infest and mix with the water used to wash tableware, the bacteria adhere to the tableware and subsequently contaminate the food that is consumed [17]. According to Rulen Nia B & Iin Intarsih (2021), the presence of Coliform bacteria in clean water in restaurants may be due to the mixing of faeces in the water inlet or adjacent water sources, the fusion of several water bodies with local residents' toilet facilities, or the reservoir itself. Water storage tanks in restaurants that are not closed or accompanied by a lid also allow bacteria to enter the water. Furthermore, if the water tank is not drained, pathogenic bacteria can grow [18].
Total coliform is so prevalent in nature (soil or vegetation) that it generally does not pose a safety risk. However, its presence indicates contamination and other pathogens. The presence of coliforms in the water is most likely due to contamination during construction or pipe repairs [19]. Coliform is used as an indicator against water contamination by pathogenic bacteria. The presence of coliform bacteria in the water indicates that the water is contaminated and pathogenic, potentially leading to diseases like diarrhoea [20].
The bacteriological quality of water plays a crucial role in the construction of water sources. Water sources can become contaminated when their defenses fail to meet the necessary standards. Bacteria entering the water source can lead to a reduction in the water's quality. ion can cause diarrhea thdiarrhoeater media as well as food that has been mixed with

bacteria such as E. coli, Entamoeba hystolitica, Sygella, Vibrio cholera, and other deviation-causing agents [21].

Based on the explanation above, traders in the Culinary Tourism Centre should monitor the distribution flow of waterways to prevent the contamination of harmful microorganisms. They should also carry out drainage and cleaning of reservoirs to prevent the proliferation of microorganisms.

Washing Process on Tableware

Scraping is the process of separating dirt before washing so that food residues do not clog the washing tub's flow. Flushing and soaking are the acts of watering, and the feeding bowl is automatically soaked using hot water at 60 °C. Washing is the act of washing tableware using detergent. Rinsing is the process of washing cutlery with clean, running water and always replacing it.

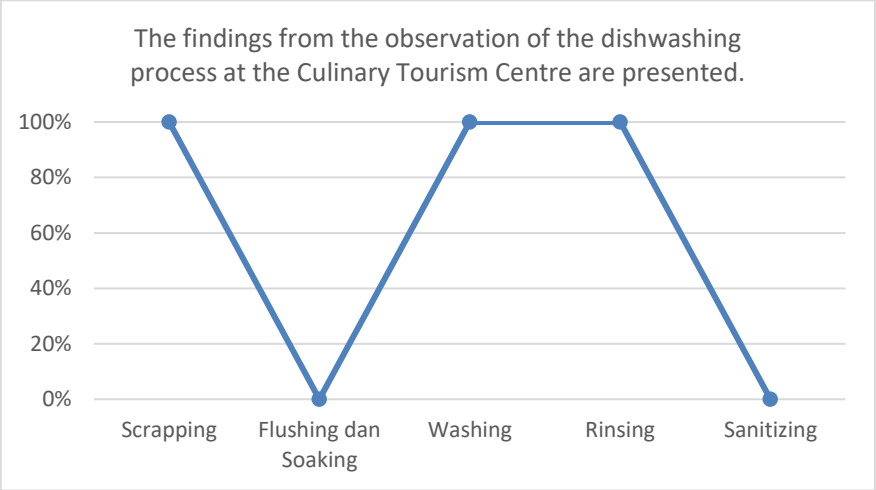

Figure 1. Observation Results of the Washing of Tableware in Culinary Tourism Centers

Based on the observation sheet, it is known that the majority of traders have washed tableware with good qualifications. A total of 3 outlets (60%) are categorised as having met the requirements in the process of washing their tableware. The cleanliness of the tableware is a result of improper washing methods and water usage, which do not align with the required qualifications. [22].

According to the observation sheet, there were five traders in the Culinary Tourism Centre who did not soak their tableware with hot water. All traders washed their tableware using sponges and sunlight soap, with the exception of two who did not use sponges in a clean state. A total of 5 traders have washed tableware using running water and clean water, but as many as 5 traders still do not apply *sanitising*.

According to the research of Anisa T. Lubis et al. (2020), the washing of tableware at the Tikala Baru restaurant is not in accordance with the qualifications because it is not accompanied by hot water with a temperature of 40°C–80°C, and there is no separate tub for watering, soaping and rinsing other than the 2 buckets provided for washing tableware. After washing, the cutlery is wiped using a cloth or napkin that is washed twice a week [23].

Facilities for washing equipment, such as tubs, soaps, scrubbing materials, and disinfectant materials, play a crucial role in the equipment washing process [24]. According to standardisation, the principle of correct washing involves the fulfilment of the following elements:

1. The existence of washing media enables it to be carried out in a clean, hygienic, and healthy manner.
2. There is a phase where you learn how to wash
3. Understand and know washing techniques.

Soaking tableware aims to provide an opportunity for water to seep into food residues that are still attached or hardened so that they are easy to clean. Tableware can mix with dirt and dust, making it susceptible to bacterial contamination [25]. To prevent contamination of tableware, the correct washing process must be applieWe can conclude that the washing process is not qualified because traders do not apply the processes of sanitizing, flushing, and soaking, and some traders continue to use sponges or wipes in unclean conditions.

CONCLUSIONS AND RECOMMENDATIONS

The percentage of tableware at the Culinary Tourism Centre that meets the requirements is plates at 50%, spoons at 75%, forks at 100%, and glasses at 75%. The bacteriological quality of clean water in the Culinary Tourism Centre does not meet the requirements, with a total coliform value of 48 CFU/100ml. The process of washing tableware at culinary tourism centres that meet the qualification requirements reaches 60%. At least once every six months, the health center is expected to conduct regular inspections, including health inspections of traders.

REFERENCES

1. Marisdayana R, Harahap PS, Yosefin H. Cara Pencucian Peranti Makan, Personal Hygiene Akan Pencemaran Bakteri Di Peranti Makan. J Endur. 2017;2(3):376.
2. Safira M. Terjangkitnya Deviasi Lewat Asupan Makan (Foodborne Disease). J Progr Stud Inst Teknol Sumatera. 2020;1–6.
3. Kunci K. Klausalitas Higiene Sanitasi Dengan Mutu Bakteriologis Di Peranti Makan Pedagang Di Area Sekitar Kampus Undip Tembalang. J Kesehat Masy. 2016;3(3):769–76.
4. Rorong JA, Wilar WF. Keracunan Makanan Dikarenakan Mikroba. Techno Sci J. 2020;2(2):47–60.
5. Rochmawati AE, Rachmaniyah, Rusmiati. Mutu Bakteriologis Peranti Makan , Personal Hygiene, serta Sanitasi Warung Kopi Di Kendangsari Surabaya Tahun 2021. J Hig Sanitasi. 2021;1:26–32.
6. Dinas Kesehatan Provinsi Jawa Timur. Profil Kesehatan Provinsi Jawa Timur 2019. [Internet]. 2020; tabel 53. Available from: www.dinkesjatengprov.go.id
7. Ilmi NM, Anwar MC, Subagiyo A. Uji Efektivitas Larutan Belimbing Wuluh (Averrhoa bilimbi) Perihal Penurunan Kuantitas Kuman di Peranti Makan Kabupaten Tegal. Bul Keslingmas. 2022;41(2):77–84.
8. Herawati H, Sakati SN, Sumarto Z. Mutu Bakteriologis Di Peranti Makan Di Warung Makan Kadompe Di Kota Luwuk Kabupaten Banggai. Poltekita J Ilmu Kesehat. 2022;16(2):200–6.
9. Amallia RHT, Sariwulan RM, Saputri A, Lestari A, Putri WU. Analisis Kuantitas Kuman Di KAMPUS X KOTA PALEMBANG Artikel Penelitian. J Peneltian [Internet]. 2021;12(1):57–64. Available from: https://jurnal.um-palembang.ac.id/syifamedika/article/download/2928/pdf
10. BPOM. Mikrobiologi Pangan. Jakarta: Direktorat Surveilans Penyuluhan Keamanan Pangan dan Bahan Berbahaya; 2003.
11. Susanna D, Indrawani YM, Zakianis Z. Pencemaran Bakteri Escherichia coli pada Makanan Pedagang Kaki Lima di Sepanjang Jalan Margonda Depok, Jawa Barat. Kesmas Natl Public Heal J [Internet]. 2010;5(3):110–5. Available from: http://journal.fkm.ui.ac.id/kesmas/article/view/143
12. Wirastuti NWW. Klausalitas Cara Mencuci serta Disimpannya Peranti Makan dengan Kuantitas Kuman Di Tempat Pengolahan Pangan Studi Dilaksanakan di Area Kerja UPTD. Puskesmas III Dinkes Kecamatan Denpasar Utara Tahun 2022. Poltekkes Kemenkes Denpasar Jurusan Kesehatan Lingkungan 2022; 2022.

13. Mulya A, Rahmawati R, Erminawati E. Teknik Pencucian Berdampak akan Kuantitas Kuman di Peranti Makan: Studi Literatur. J Kesehat Lingkung J dan Apl Tek Kesehat Lingkung. 2021;18(1):27–32.
14. Lapasamula DR. Visualitas Higiene Sanitasi dengan Eksistensi Kuantitas Kuman di Peranti Makan di Lembaga Pemasyarakatan Narko0tika Kelas II A Sungguminasa Kabupaten Gowa. Sulolipu Media Komun Sivitas Akad dan Masy. 2020;19(2):282–91.
15. Tumelap HJ. Tikala Manado. Situasi Bakteriol Peranti Makan Di Rumh Makan Jombang Tikala Manad. 2011;1(1):20–7.
16. Cholid KA, Darundiati YH, Sulistiyani S. Unsur-unsur yangmana Berelasi dengan kuantiti kuman di Peranti makan pada Rumah Makan area Perimeter serta Buffer Area Pelabuhan Sampit. J Kesehat Masy. 2022;10(3):290–7.
17. Yaqin N, Nursanti. analisa efek polusi Zat Organik Pada Air akan tindakan pencucian Perantimakan memakai teknik Permanganometri. J Sains. 2018;8(15):39–43.
18. Rulen Nia B, Iin Intarsih. analisa eksistensi bakteri serta Higiene Sanitasi Peranti Makan Di Rumah Makan area Kerja Puskesmas Simpang. J Ensiklopedia [Internet]. 2021;3(2):179–89. Available from: http://jurnal.ensiklopediaku.org
19. Pratama Y, Rachman NA. Studi Higiene Sanitasi Makanan Dengan Pemeriksaan Escherichia coli Air Pencucian dan Peranti Makan Di Pujasera X. J Serambi Eng. 2020;5(4).
20. Budon AS. Studi Mutu Bakteriologis Air Pencucian Peranti Makan di Kantin. Kebijak Kesehat Lingkung Menghadapi Era Revolusi Ind 40. 2019;23.
21. Zulkifli A, Rahmat KB, Ruhban A. Analisa Klausalitas Mutu Air Minum Sera Terjadinya Diare Di Wawondula Sebagai Area Pemberdayaan Pt. Vale Sorowako. Media Kesehat Politek Kesehat Makassar. 2018;12(1):50.
22. Rahmatullah Jati Pradopo, Sulaiman Hamzani SA. DOI: https://doi.org/10.31964/jkl.v18i1.265. Saringan Cangkang Telur Bebek Ef Memperbaiki Mutu Ph Serta Besi Air Sumur Bor. 2021;18(1):13–8.
23. Anisa T. Lubis, Oksfriani Jufri Sumampouw JM. U. Visualisasi Cara Pencucian Peranti Makan dan Eksistensi Escherichia coli Pada Peranti Makan di Rumah Makan. J Public Heal Community Med. 2020;1(1):34–9.
24. Inayah I, Muharram A. Klausalitas Proses Pencucian Dengan Mutu Bakteriologis Peranti Makan (Studi Literatur). Sulolipu Media Komun Sivitas Akad dan Masy. 2020;20(2):212.
25. Dyah Suryani, Piki Paslini, Suyitno. Klausalitas Higiene Sanitasi dengan Kuantitas Kuman pada Piring di Warung Makan, Wirogunan, Kota Yogyakarta. SEHATMAS J Ilm Kesehat Masy. 2022;1(3):404–17.