African Journal of Applied Research
Vol. 10, No. 2 (2024), pp. 123-138
http://www.ajaronline.com
http://doi.org/10.26437/ajar.01.12.2024.07
Special Issue: Applied Research Conference of Technical Universities in Ghana 2024
Received: November 19, 2023
Peer reviewed: June 25, 2024
Revised: October 14 2024
Published: December 2024

EVALUATING THE MICROBIAL QUALITY OF WASH-SPONGES FROM STREET FOOD VENDING SITES

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ABSTRACT

Purpose: Kitchen sponges, commonly used to clean kitchen items and surfaces, can become a significant source of cross-contamination if handled, stored, or disinfected poorly. This study, therefore, plays a crucial role in raising awareness about the potential risks of pathogenic bacteria transfer to food-contact surfaces by evaluating the microbial quality of sponges used by street food vendors.

Design/Methodology/Approach: A brief questionnaire was administered to ascertain the dishwashing activities at the food vending sites. Thirty-two (32) sponge pieces collected from street food vending sites within the Sunyani Technical University vicinity were examined for their microbial levels, and the data were analysed using MS Excel and SPSS version 20.

Findings: Eighty-six percent (86%) of the food vendors surveyed indicated that the Food and Drug Authority (FDA) and Environmental Health Officers (EHO) from the municipal assembly supervised their businesses, and 62% possessed a medical examination certificate. More than half of the food vendors (62.5%) only changed the dishwashing water 1-3 times per day, and 69% did not replace the sponge until it was completely damaged. Most respondents (87%) drained washed dishes (bowls) by tilting, and 69% of food vendors placed the sponges in a designated sponge container without drying them. There was relatively high microbial contamination in the wash sponge and water, exceeding recommended levels with a strong correlation between the two.

Research Limitation: This research focused on wash sponges at street food vending sites near Sunyani Technical University; hence, the scope of generalisation might be limited.

Practical Implication: The study may impact how street food vendors handle and store wash sponges.

Social Implication: This project will help street food sellers become more aware of food safety procedures, lower the number of cases of foodborne illnesses, and enhance general health and well-being.

Originality/ Value: The study investigated the microbial quality of sponges, a critical but often overlooked aspect of food safety in the food service industry.

***Keywords**: Dishwashing. hygiene. microbes. sponge. water.*
ISSN: 2408-7920

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INTRODUCTION

Street food vending is a global practice in urban environments, particularly in developing countries like Ghana, providing affordable and accessible food to a broad population (Munishi, 2022; Mensah *et al*., 2012; Tambekar *et al*., 2008). However, despite its benefits, food safety and hygiene concerns remain a significant challenge (Ekanem, 2011), and foodborne illnesses pose significant health risks in street food vending, underscoring the need for improved food safety practices. One critical factor contributing to microbial contamination in street food vending is the hygiene practices associated with cleaning utensils, mainly wash sponges used to clean cooking surfaces and utensils (Mukherjee *et al*., 2020). Street food vendors often lack adequate food safety knowledge, hygiene practices, and public awareness, exacerbating health risks (Muyanja *et al*., 2011; Rane, 2011). Insufficient processing and storage facilities, infrastructure, and regulatory challenges compound these risks (Campos *et al*., 2015).

Vendors frequently use wash sponges to wipe surfaces and clean utensils. However, due to their constant exposure to moisture and food debris, they can become breeding grounds for harmful microorganisms, including *Escherichia coli*, *Salmonella*, and *Staphylococcus aureus* (de Sousa *et al*., 2018; Wolde & Bacha, 2016; Beumer & Kusumaningrum, 2003). Poor handling of these sponges poses serious health risks due to cross-contamination (Obi & Ndukwu, 2016; Marotta *et al*., 2018), particularly in environments with inadequate water supply and sanitation. Research by Silva *et al*. (2017) highlights that street vendors often have limited access to clean water, further complicating efforts to maintain proper hygiene standards.

Studies have consistently shown high levels of microbial contamination on kitchen sponges, including *Escherichia coli*, *Salmonella spp*., *Campylobacter spp*., and *Staphylococcus aureus* (Enriquez *et al*., 2014; Cardinale *et al*., 2017; Josephson *et al*., 2017). In Ghana, diarrheal diseases are a leading cause of hospital attendance and mortality, particularly among children under five (Bruce *et al*., 2005). Typhoid, cholera, and diarrhoea are commonly reported foodborne illnesses, with statistics indicating increasing cases in the Sunyani Municipality (Environmental Protection Agency, Sunyani Municipality, 2014; Ministry of Health, 2009). While existing studies have investigated food safety practices among street food vendors, limited research has focused on the microbial quality of kitchen sponges in Ghana. This study addresses this knowledge gap, providing insights into the potential risks associated with kitchen sponge use in street food vending.

Specifically, this study aims to evaluate the microbial contamination of wash sponges used by street food vendors around Sunyani Technical University (STU), focusing on the public health risks associated with their use. By identifying and quantifying microbial contaminants, this study will shed light on consumers' potential risks and provide evidence for policymakers to promote

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better hygiene practices among vendors. Furthermore, this research aligns with several Sustainable Development Goals (SDGs), including SDG 3 (Good Health and Well-Being of People), SDG 6 (Clean Water and Sanitation for Public Wellbeing), and SDG 12 (Responsible Consumption and Production of Food). Addressing these issues can enhance street food's overall safety and support sustainable urban development.

LITERATURE REVIEW

The safety and hygiene of street vended foods have been widely discussed in public health literature, particularly in developing countries where street food is pivotal in inner-city (urban) food systems. Studies have consistently reported high microbial loads in food samples from street vendors due to inadequate hygiene practices and poor sanitation conditions (Mensah *et al*., 2002; Silva *et al*., 2017). These conditions make street food vending an area of concern for foodborne illnesses, especially in regions with limited access to clean water and proper waste disposal.

Wash sponges used in street food vending are increasingly recognised as potential vectors for microbial contamination. Research by de Sousa *et al*. (2018) demonstrated that sponges provide an ideal breeding ground for microorganisms, especially when damp and used repeatedly without proper disinfection. These sponges are frequently contaminated with *Escherichia coli, Salmonella spp*., and *Staphylococcus aureus*, all known to cause severe gastrointestinal infections (Mukherjee *et al*., 2020).

Previous scholarly works have emphasised the involvement of improper handling and poor access to clean water as major contributors to microbial contamination in street food environments. For example, Addo *et al*. (2021) found that most vendors in Ghanaian street markets lacked access to clean, potable water, which increased the likelihood of contamination by reusing wash-sponges and other utensils. In such settings, sponges, which retain moisture for long periods, act as reservoirs for bacteria and are often used across multiple surfaces, thereby spreading contaminants from one food item to another (Kumari & Sarkar, 2020).

Several studies have called for interventions, such as education on proper hygiene practices and access to sanitation facilities, to mitigate the risks associated with street food vending (Ekanem, 2011; Silva *et al*., 2017). Research by Ahmed *et al*. (2019) also highlighted that simple interventions, like using disposable cloths instead of sponges or disinfecting sponges regularly, could significantly reduce microbial contamination.

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However, there is still inadequate study focusing on the microbial quality of wash-sponges in street food settings, particularly in tertiary institution vicinities like Sunyani Technical University. Addressing this gap, the current study will provide an evidence-based assessment of the microbial contamination levels in wash sponges used by street food vendors. This is essential for public health policies aimed at improving food safety and achieving the relevant Sustainable Development Goals (SDGs), such as SDG 3 (Good Health and Well-Being) and SDG 6 (Clean Water and Sanitation) (Addo *et al*., 2021).

METHODOLOGY

Research design

The study used a cross-sectional descriptive approach with the quantitative method for data collection. It had two main parts: a field survey and laboratory analysis, where sponge samples were assessed for microbial contamination.

Study area

The current study was undertaken around the Sunyani Technical University (STU) campus in the Bono Region of Ghana, where street food vending is common. Sunyani's climate is tropical, with high humidity and temperatures conducive to microbial growth, making it essential to understand the microbial load in food vending environments (Addo *et al*., 2021).

Target population and sample size

The intended participants include street food vendors operating around Sunyani Technical University. Thirty-two (30) street food vending sites were selected randomly from three main locations within the STU vicinity, while two eateries were selected from the STU campus. From these locations, a total of 90 food vendors participated in the study for the survey.

Sponge and wash water sample collection

Thirty-two (32) wash sponges and water were collected from street food vending sites selected randomly within a 5-kilometre radius of the STU campus. Each sponge and water sample was placed into sterile plastic bags immediately after collection and labelled with the vendor's location and time of collection. Samples were stored at 4°C and transported to the microbiology laboratory for analysis within two hours to prevent further microbial growth (Kumari *et al*., 2020).

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Microbial Analysis

Microbial analysis was conducted following ISO 4833-1:2013 standard methods. Each wash-sponge was immersed in 100 mL of buffered peptone water and homogenised for 2 minutes. Serial dilutions were then prepared, and 1 mL aliquots were plated onto selective media for different pathogens: Eosin Methylene Blue (EMB) agar for *Escherichia coli* and Mannitol Salt Agar (MSA) for *Staphylococcus aureus* (de Sousa *et al*., 2018; Ahmed *et al*., 2019). Plates were incubated at 37°C for 24-48 hours, and colony-forming units (CFU) were counted. Gram staining and biochemical tests such as catalase, coagulase, and lactose fermentation were conducted for further identification. Microbial load was reported as CFU/mL (Mukherjee *et al*., 2020).

Data Analysis

Descriptive statistics, including the mean and standard deviation of microbial counts, were computed. A test of variance to ascertain the differences in microbial loads between sponges and wash water was considered statistically significant at $p < 0.05$ (Silva *et al*., 2017).

Ethical Considerations

Before sample collection, informed consent was obtained from the street food vendors. The motive behind the study was explained to them, and the Ethical Review Board of Sunyani Technical University approved the protocol. Confidentiality and anonymity of the vendors were maintained throughout the study (Mensah *et al*., 2002).

RESULTS AND DISCUSSION

Demographic Information

The outcome of the survey is presented in Table 1 below. Most respondents are between 26 and 55 (61%), suggesting that middle-aged adults dominate the street food vending sector. The respondents were primarily female (95.6%). This aligns with global trends, where women commonly engage in informal food vending (Kumari & Sarkar, 2020). A significant number of respondents have non-formal education (44.4%), with only 13.3% having a tertiary education. Worryingly, 68% of respondents reported not changing their wash sponge until it was damaged, while only 13% replaced it every one to two months. This practice is disturbing as sponges harbour a high microbial load when used for extended periods (de Sousa *et al*., 2018). Another concerning practice is that 69% of vendors store their wash sponge in a container without drying it (Plate A), while only 31% spread it out to dry. The survey reveals that 62% of vendors change their wash water only 1 to 3 times daily. In contrast, the literature suggests that wash water should be changed frequently, ideally after washing a few items, to avoid the buildup of food residues and bacterial

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contamination (Ahmed *et al*., 2019). A positive finding is that 87% of respondents turn bowls and plates down after washing.

Table 1: Survey outcome

Variable	Category	Frequency (*N*)	Percentages (%)
Socio-demographic characteristics of the respondents.			
Age (years)	18 - 25	28	13
	26 - 35	22	24
	36 - 45	16	18
	46 - 55	17	19
	56 +	7	8
	Total	***90***	***100***
Gender	Male	4	4.4
	Female	86	95.6
	Total	***90***	***100***
Educational background of the respondents	Tertiary	12	13.3
	Secondary	5	5.6
	Primary	5	5.6
	Vocational	28	31.1
	Non-formal education	40	44.4
	Total	***90***	***100***
Wash sponge handling culture.			
Frequency of change of sponge	Less than one month	0	0
	One - two months	12	13
	Three months	17	19
	Not changed until damaged	61	68
	Total	***90***	***100***
Storage of wash sponge after washing	Spread out to dry	28	31
	Kept in a container, no drying	62	69
	Total	***90***	***100***
Dishwashing activities.			
Frequency of changing wash water within a day	1 – 3 times	56	62
	4 – 7 times	20	22
	8 – 10 times	14	16
	Total	***90***	***100***
Condition of bowls/plates after washing	Turned down to drain	79	87
	Stacked together, not drained	11	13
	Total	***90***	***100***

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Regulation obligation.			
Certificate of medical examination	No records	34	38
	Have records	56	62
	Total	***90***	***100***
Supervision by regulatory agencies	No supervision	11	12
	Supervised	79	88
	Total	***90***	***100***

Interestingly, 62% of vendors have medical examination records, showing some adherence to public health regulations; however, 38% lack such records, raising concerns about the health and hygiene of many vendors. The need for regular health screening has been emphasised in literature to prevent foodborne diseases (Kumari & Sarkar, 2020). The survey shows that 88% of the vendors reported being supervised by regulatory agencies, a promising sign of regulatory enforcement. Supervision helps ensure compliance with food safety standards, which has been shown to reduce contamination in other settings (Mensah *et al*., 2002). However, the 12% of vendors who report no supervision still pose a public health risk.

Observation results

During the survey, some observations (Plates 1: A, B, C, and D) were made that could substantiate the results in Table 1 above. The first image (Plate A) shows a visibly soiled sponge in a container, suggesting it is being stored. This particular sponge appears heavily used, possibly associated with microbial buildup

Plate A *– sponge sample being taken from a sponge storage* ***Plate B*** *relatively unhygienic washing up water*

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*Plate **C** – relatively unhygienic washing up water:* ***Plate D*** *– relatively clean water with sponge sample being taken.*

From Plate B, the washing-up water appears highly unclean and contains visible food residue. The two basins have plates and bowls immersed in the water, likely exposing them to contaminated water over time. Such washing practices can promote bacterial growth in the water and the utensils, increasing microbial loads. This image supports the worrying 62% of vendors who change their wash water only 1 to 3 times daily. Plate C shows two basins with different levels of cleanliness of wash water. One basin is cloudier, suggesting the presence of grease, food particles, and possibly detergent residue. The other basin seems relatively cleaner but is still likely contaminated due to the surrounding area. The last image (Plate D) shows a cleaner setup of washing utensils at the vending site. A visible sponge is also used with relatively clean water in the basins.

Microbial load in wash sponge and water

From Figure 1 (A), the magazine area shows the highest *Staphylococcus* contamination level, with a count slightly above 4.5 log CFU/mL. STU Roundabout and STU Common Market have similar *Staphylococcus* counts, around 4.3 log CFU/mL, indicating moderately high contamination at these sites. Eatery 1 and 2 show slightly lower contamination levels than the first three locations. Staphylococcus counts around 3.7 log CFU/mL and 3.2 log CFU/mL, respectively, suggesting that these sites have better hygiene practices.

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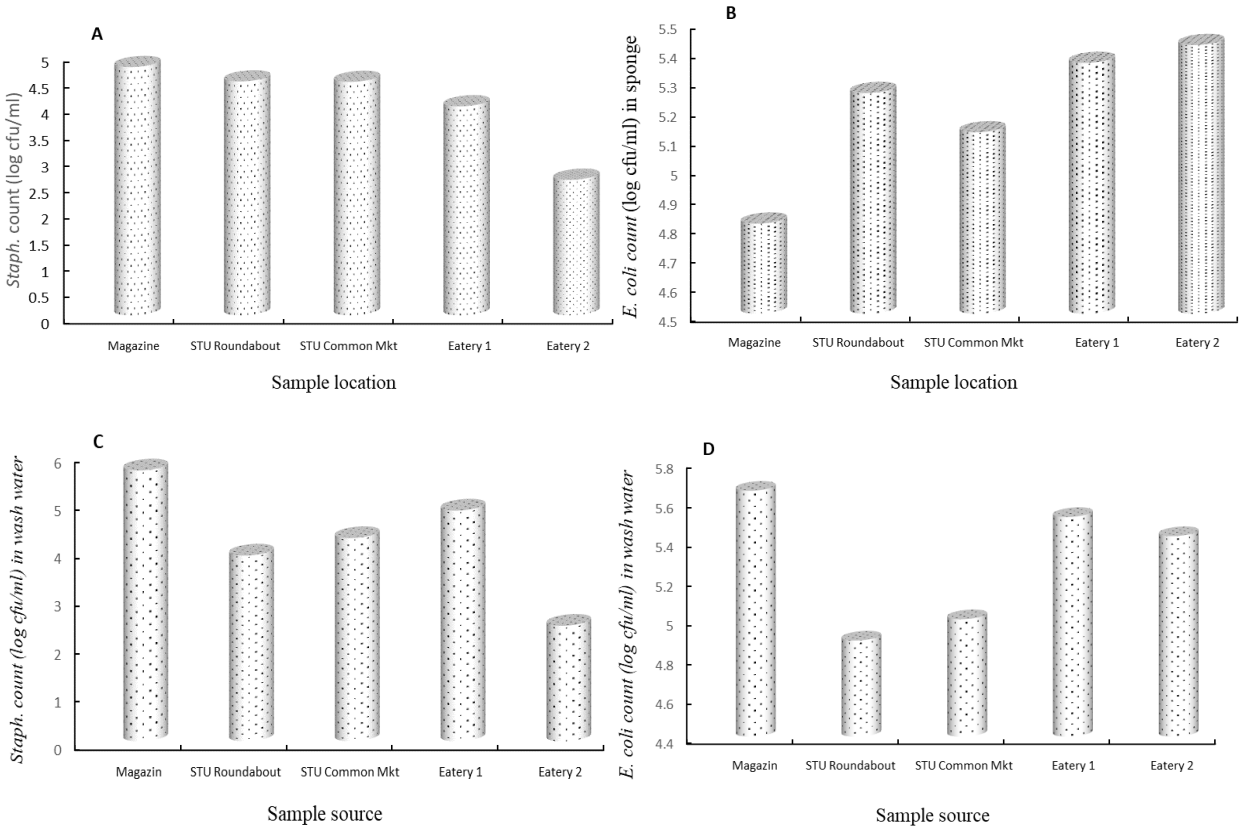

Figure 1: Microbiological quality of wash sponge and wash water: A: *Staphylococcus* count (log cfu/ml) in wash sponge; B: *Escherichia coli* count (log cfu/ml) in the wash sponge; C: *Staphylococcus* count (log cfu/ml) in wash water and D: *Escherichia coli* count (log cfu/ml) in the wash water.

Conversely, Figure 1 (B) shows Eatery 1 and Eatery 2 had the highest levels of *E. coli* contamination, both at around 5.4 logs CFU/mL. This suggests that wash-sponges in these eateries are heavily contaminated with *E. coli*, indicating poor hygiene practices or frequent contamination from food debris. STU Roundabout and Common Market have a relatively high E. coli count in the wash sponge, around 5.2 log CFU/mL and 5.1 log CFU/mL. The magazine area displays the lowest *E. coli* count among the locations, with levels around 4.7 log CFU/mL. Figure 1 (C) depicts that the magazine area exhibits the highest Staphylococcus contamination in wash water, with 6 log CFU/mL levels. Eatery 1 also shows a high *Staphylococcus* count at approximately 5.5 log CFU/mL. STU Common Market and Roundabout show moderate contamination levels, with counts around 5.0 and 4.8 log CFU/mL, respectively. Although lower than Magazine and Eatery 1, these locations still present considerable microbial risks. Eatery 2 has the lowest *Staphylococcus*

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count, with contamination levels around 3.5 log CFU/mL. This suggests relatively better water hygiene practices compared to the other sites. Figure 1 (D) shows that the magazine area has the highest *E. coli* contamination level in wash water, with a count close to 5.8 log CFU/mL. This indicates a significant level of faecal contamination, suggesting poor water quality or improper hygiene practices. Eatery 1 follows closely, with an *E. coli* count of around 5.6 log CFU/mL, indicating a high contamination risk from the wash water used at this location. Eatery 2 has a moderately high *E. coli* count of about 5.4 log CFU/mL. While this level of contamination is lower than Magazine and Eatery 1, it still indicates potential hygiene issues. STU Common Market shows a lower *E. coli* count, around 5.1 log CFU/mL, although this level still presents a contamination risk. STU Roundabout has the lowest contamination level, with *E. coli* counts around 4.6 log CFU/mL. While still present, the contamination level is noticeably lower than at the other sites.

Correlation analysis

The correlation matrix reveals some interesting relationships between microbial counts in the sponges and the wash water. The mean counts of *Staphylococcus* in the sponge and wash water samples showed a strong positive correlation (0.837) (Table 2), indicating that higher *Staphylococcus* counts in sponges are generally associated with higher counts in wash water. On the other hand, the mean counts of *Staphylococcus* in the sponge and the mean counts of *E. coli* in the sponge had a strong negative correlation (-0.731) (Table 2), suggesting that as *Staphylococcus* counts increase in sponges, *E. coli* counts tend to decrease. The mean counts of *Staphylococcus* in the wash water and the mean counts of *E. coli* in the sponge also had a strong negative correlation (-0.757) (Table 2). However, the mean counts of *Staphylococcus* in the wash water and the mean counts of *E. coli* in the wash water had a weak positive correlation (0.342) (Table 2).

Table 2: Survey outcome

Metrix	**Staph_Sponge_Mean**	**Staph_Wash_Mean**	**Ecoli_Sponge_Mean**	**Ecoli_Wash_Mean**
Staph_Sponge_Mean	1	**0.836913289**	**-0.730854053**	-0.209635911
Staph_Wash_Mean	**0.836913289**	1	**-0.757382756**	0.341699229
Ecoli_Sponge_Mean	**-0.730854053**	**-0.757382756**	1	-0.233304612
Ecoli_Wash_Mean	-0.209635911	0.341699229	-0.233304612	1

DISCUSSION

Socio-demographics and Hygiene Practices

Most respondents (61%) were between 26 and 55, indicating that middle-aged adults dominate the street food vending sector. This finding is consistent with previous studies, which often highlight

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street vending as a livelihood for individuals within this age group (Ekanem, 2011). The vendors in this study were predominantly female (95.6%), with 44.4% having no formal education, which likely contributed to inadequate knowledge of food safety practices (Mensah et al., 2002). Women are often the leading operators in this sector due to their flexibility and low barriers to entry, particularly in peri-urban areas. However, limited education may restrict their understanding of food safety standards and public health regulations, as echoed in the literature (Ahmed et al., 2019).

An alarming 68% of respondents reported that they only replace their sponges when visibly damaged, which is far from recommended hygiene practices. Sponges should ideally be replaced or disinfected every 1-2 weeks to prevent accumulating bacteria such as *Escherichia coli* and *Staphylococcus aureus* (de Sousa et al., 2018). Additionally, 69% of vendors store their sponges in containers without drying them, creating an optimal environment for microbial growth (Silva et al., 2017). These practices are similar to those observed in other developing countries, where improper sponge handling has been linked to an increased incidence of foodborne illnesses (Silva et al., 2017). When damp and filled with food particles, sponges provide a breeding ground for bacteria, potentially leading to cross-contamination between utensils and surfaces (Kusumaningrum et al., 2003).

The frequency of changing wash water is also inadequate, with 62% of vendors changing it only 1-3 times daily. Research suggests that wash water should be changed frequently, ideally after washing a few items, to prevent the accumulation of contaminants (Ahmed et al., 2019). Limited access to clean water, particularly in informal sectors like street vending, may explain this low frequency (Addo et al., 2021). Despite this, 87% of vendors follow the positive practice of turning dishes down to the drain after washing, which reduces moisture retention and limits bacterial growth (de Sousa et al., 2018; Mukherjee et al., 2020). However, poor sponge hygiene and infrequent water changes undermine the benefits of this practice.

Although regulatory agencies supervise most vendors (88%), gaps remain in adherence to hygiene protocols, particularly in sponge replacement and water usage. While regulatory oversight is promising, its consistency needs improvement to ensure that vendors comply with best practices for food safety (Kumari & Sarkar, 2020).

Microbial Load in Sponges and Wash Water

Sponge Contamination with Staphylococcus aureus

The microbial analysis revealed significant contamination of sponges with *Staphylococcus aureus*. The counts ranged from approximately 3.2 log CFU/mL (Eatery 2) to 4.8 log CFU/mL (Magazine). These values are notably high, as the acceptable level of *Staphylococcus aureus* contamination in

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food contact surfaces should not exceed 2 log CFU/mL (Silva et al., 2017). The fact that all sampled locations exceed this threshold suggests inadequate cleaning practices. *Staphylococcus aureus* contamination is typically associated with poor hand hygiene, improper cleaning of utensils, and the reuse of contaminated cleaning tools. In the case of Magazine, where the highest levels were observed, reusing sponges without adequate disinfection likely contributed to the contamination (Mensah et al., 2002). This finding aligns with findings from the literature on sponge contamination in street food vending environments (de Sousa et al., 2018).

Sponge Contamination with Escherichia coli

The levels of *E. coli* contamination were similarly concerning, with values ranging from 4.6 log CFU/mL at STU Roundabout to 5.4 log CFU/mL at Eatery 1. According to food safety standards, *E. coli* counts should not exceed 3 log CFU/mL on food contact surfaces (de Sousa *et al*., 2018). The elevated *E. coli* levels at all sites point to fecal contamination, likely due to inadequate handwashing, contaminated water for washing utensils, or the improper storage of sponges (Ahmed *et al*., 2019). The highest contamination levels were recorded at Eatery 1, indicating lower compliance with hygiene standards or more frequent use of contaminated sponges.

Wash Water Contamination with Staphylococcus aureus

The wash water also showed high levels of *Staphylococcus aureus*, with counts reaching 6 log CFU/mL at Magazine and 5.5 log CFU/mL at Eatery 1. These levels are far above the acceptable limit of 2 log CFU/mL for water used in food preparation (Silva et al., 2017). Contaminated wash water poses a significant risk of cross-contamination to food contact surfaces and utensils, which can lead to foodborne illnesses. The high contamination levels at Magazine and Eatery 1 suggest infrequent water changes and possible use of untreated water, exacerbating the microbial risks (Mensah et al., 2002). These findings are consistent with studies that emphasise the role of clean water access in mitigating food contamination risks (Addo et al., 2021).

Wash Water Contamination with Escherichia coli

The highest *Escherichia coli* contamination in wash water was found at Magazine (5.8 log CFU/mL) and Eatery 1 (5.6 log CFU/mL), far exceeding the recommended threshold of 3 log CFU/mL (Ahmed et al., 2019). *E. coli* in wash water typically indicates fecal contamination, likely due to contaminated water sources or poor hand hygiene practices (Silva et al., 2017). The consistently high contamination levels across most locations highlight the urgent need for better wash water management to reduce cross-contamination risks.

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Correlation matrix

The correlation matrix provided insights into the relationships between microbial counts in sponges and wash water. A strong positive correlation (0.837) between *Staphylococcus* counts in sponges and wash water indicates that higher contamination levels are reflected in the wash water, suggesting that cross-contamination occurs during cleaning processes (Perez-Rodriguez et al., 2013). Conversely, the strong negative correlation between *Staphylococcus* and *E. coli* counts in sponges (-0.731) implies a competitive interaction between these microorganisms, as they may compete for similar resources within the same environment (Holzapfel et al., 2018). These findings underscore the complex interactions between microbial species during cleaning, highlighting the need for targeted hygiene protocols to mitigate cross-contamination risks.

Post-research sensitisation exercise

Following the research, the study team initiated a sensitisation exercise to educate vendors on proper hygiene practices (Plate 2). Vendors were instructed on the importance of replacing sponges every 1-2 weeks or disinfecting them daily, drying sponges properly after use, changing wash water frequently, and using clean water sources for washing utensils. These interventions are critical for reducing microbial contamination and improving the overall safety of street vended food.

Plate 2 Shows some researchers engaging street food vendors in a sensitisation exercise.

CONCLUSION

The findings from this study highlight significant hygiene challenges among street food vendors in the Sunyani Technical University vicinity, with potential public health risks arising from inadequate sponge usage and poor wash water management. Most respondents, primarily female

African Journal of Applied Research
Vol. 10, No. 2 (2024), pp. 123-138
http://www.ajaronline.com
http://doi.org/10.26437/ajar.01.12.2024.07
Special Issue: Applied Research Conference of Technical Universities in Ghana 2024
Received: November 19, 2023
Peer reviewed: June 25, 2024
Revised: October 14 2024
Published: December 2024

and with limited formal education, demonstrated practices that foster microbial contamination, such as infrequent sponge replacement (68%) and improper sponge storage (69%), which are critical for the proliferation of *Staphylococcus aureus* and *Escherichia coli*. These practices are exacerbated by the infrequent change of wash water, with 62% of vendors changing it only 1-3 times per day, further increasing the risk of cross-contamination.

The microbial analysis revealed that contamination levels for *Staphylococcus aureus* and *Escherichia coli* in sponges and wash water exceeded recommended limits, particularly in areas such as Magazine and Eatery 1, indicating immediate intervention. These results are consistent with previous studies that have identified inadequate water access, poor sanitation, and insufficient knowledge of hygiene practices as key factors contributing to high levels of contamination in street food vending environments. The elevated microbial counts underscore the need for more rigorous enforcement of food safety regulations and increased supervision by regulatory agencies. The post-research sensitisation exercise aimed at educating vendors on proper hygiene practices - such as regular sponge replacement, proper drying techniques, and frequent water changes - represents a crucial step in addressing these challenges. Ultimately, improving hygiene practices among street food vendors is essential for safeguarding public health and enhancing the sustainability of this vital informal sector, which provides many affordable food and livelihood opportunities. Continuing efforts to educate vendors, provide access to clean water, and strengthen regulatory oversight are imperative to reducing the risks associated with microbial contamination in street food environments.

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ISSN: 2408-7920

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ISSN: 2408-7920

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ISSN: 2408-7920