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Identification of *Salmonella sp* Bacteria in Processed Balado Shrimp Sold in Food Stalls Around Mulyosari Area

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ABSTRACT

Background & Objective: Food quality is an issue of great concern in developing countries. Because many nutrients are obtained through food, balado shrimp is a typical Padang dish with a spicy, sweet, and savory taste that is widely admired by all ages, from children to adults. The presence of pathogenic bacteria, one of which is *Salmonella sp*, which contaminates balado shrimp food, can cause health problems in the human body until death. This study aimed to determine the presence or absence of *Salmonella sp* bacteria in processed shrimp balado sold in food stalls in the Mulyosari area.
Method: In this study, as many as 30 samples of shrimp balado were used to sell in food stalls in the Mulyosari area. This sample examination uses a streaking plate procedure and IMViC test—data analysis using descriptive qualitative.
Result: This study's results showed that three samples identified *Salmonella sp*. Of the 30 samples, 10% were contaminated with Salmonella sp bacteria, and 90% were not contaminated with *Salmonella sp* bacteria.
Conclusion: This indicates that positive samples of balado shrimp must be further examined to determine the feasibility of consumption.

Keywords: *Salmonella sp*, Balado Shrimp.

Introduction

According to news reported by merdeka.com (2020), there were 55 people from two sub-districts from Karawang allegedly poisoned after consuming shrimp balado Tuesday (07/21/2020). Food poisoning can occur when certain types of bacteria or pathogens that carry disease contaminate food and cause an illness called "food poisoning." (Nugrahaeni and Pertiwi, 2020).

The leading causes of food poisoning include poisonous plants, chemical or metal

contamination, and micro-organisms such as bacteria, viruses, and protozoa (Kusumawati and Listiana, 2022).

Contamination in food can cause various diseases such as typhoid, diarrhea, and so on. Diseases like this quickly attack the human body, which has decreased body power. One of the pathogenic microbes that can cause food poisoning is *Salmonella sp*. *Salmonellosis* is a disease caused by the bacteria *Salmonella sp*. (Martanda, 2019). *Salmonella sp* is a pathogenic bacterium that will cause disease in humans or farm animals. The disease caused by *Salmonella* is like typhoid fever in humans, which causes high fever and vomiting. (Ihsan, 2021).

The presence of *Salmonella sp*. in the digestive system can cause contamination—*Salmonella sp*. (Safitri, Hidayati dan Hertati, 2019). Attention to these cases is essential, as they can lead to digestive disorders and nutrient deficiencies. (Apriani, Rahmawati and Kurniatuhadi, 2019).

Method

This research uses descriptive methods. The population of this study was three food stalls in the Mulyosari area. Data collection techniques using total sampling techniques. The inspection method uses streaking curves. Collection Data analysis techniques are presented as tables and pie charts. Using the number of percentages (%) with the formula:

$$P = \frac{f}{n} \times 100\ \%$$

Caption;
P = Percentage
f = Respondent frequency
n = Total data or sample

Result

The results of the contamination examination of *Salmonella sp*. bacteria show that there are three samples contaminated with *Salmonella sp*. bacteria and 27 samples that are not contaminated with *Salmonella sp*. bacteria.

Data on bacterial contamination of *Salmonella sp*. on *balado* shrimp sold in food stalls in the Mulyosari area have been tabulated in tabular form, then presented using the number of percentages (%) using the formula:

% contaminated *balado* shrimp $\frac{\sum contaminated\ sample}{\sum total\ samples}$ X 100%

% uncontaminated *balado* shrimp $\frac{\sum uncontaminated\ samples}{\sum total\ samples}$ X 100

TABLE 1. Percentage of *Salmonella sp* contamination in Balado Shrimp

Information	Sample quantity of balado shrimp	Percentage
Contamination	3	10%
Uncontaminated	27	90%
Total sample size 30		

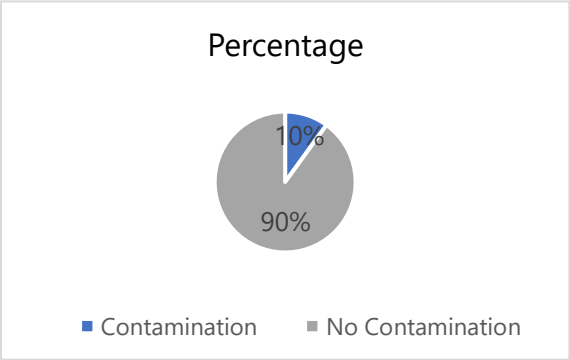

FIGURE 1 The study's results examining *Salmonella sp* bacterial contamination in balado shrimp are described in pie charts.

Based on the research results on the identification of *Salmonella sp* bacteria in processed shrimp balado sold in Mulyosari area food stalls, by planting on selenite broth media, which is one of the media for the isolation of *Salmonella sp* bacteria. Then, it is planted into selective and differential media, namely MC, to identify certain microorganisms; if there are round colonies, do not ferment lactose and negative results in bacterial staining, and then proceed to SSA and IMViC media where SSA media is a more specific media for the identification of *Salmonella sp* bacteria. At the same time, IMViC media is a valuable biochemical test for identifying Enterobacteriaceae bacteria. (Safitri et al., 2019).

Discussion

Salmonella sp. is a pathogenic microbe that causes acute diarrhea and can lead to death, commonly called *salmonellosis*. *Salmonella sp* enters through the mouth, usually with food and drink contaminated with *Salmonella sp*. One crucial factor that prevents *salmonella sp* from reaching the small intestine is the stomach's acidity. If the acidity of the stomach or if food passes through the stomach too quickly, it can make it easier for *salmonella sp* infection to reach the small intestine and then develop in the ileum. (Putri *et al,* 2022).

Based on the problem above, it is similar to the statement (Dewi, *et al* 2022) Stated that factors that cause samples to be contaminated by bacteria can be caused by the processing time of shrimp, which is processing without washing hands first, cooking utensils that are washed less clean, undercooking, serving the food in an open space, and storing the remaining food that is not clean such as plastic bags. Poor hygiene conditions in traders are indicated by using tools to touch one food with the same tools as other foods at the time of sale.

Based on the explanation above, it is essential to maintain cleanliness when cooking, cooking utensils, storing food, and serving food because these bacteria nest in dirty places and can then spread through food and drink.

Conclusion

Based on the results of this study, it can be concluded that shrimp balado sold in food stalls in the Mulyosari area are 10% contaminated with Salmonella sp bacteria, and 90% are not contaminated with Salmonella sp bacteria. It is recommended that producers improve further and pay attention to hygiene in making shrimp balado by maintaining hand hygiene by constantly washing hands and using gloves to be more hygienic. Also, maintain the cleanliness of cooking utensils and containers for storing shrimp balado and pay attention to the cleanliness of the surrounding environment.

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Conflict of Interest

There were no conflicts of interest in preparing this research and article.

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