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Research Paper

Quality of Paluik Curry from Limbanang, Limapuluh Kota Regency on the Value of pH, Total Lactic Acid Bacteria and Total Plate Count

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ABSTRACT:*Indonesia In particular, the Province of West Sumatra has many traditional foods that are beneficial to the health of its consumers. One of them is "Gulai Paluik", which is a traditional food made from spices and vegetables that are put together and then steamed. This study aims to determine the presence or absence of lactic acid bacteria activity from Gulai Paluik so that later identification and characterization of lactic acid bacteria can be carried out as potential probiotics. The research design used in this research is a survey method with descriptive analysis, the sample is taken at the traditional market of Limbanang. Take as many as 3 samples. The method used is to measure the pH value, count the number of colonies of lactic acid bacteria and Total Plate Count . The results obtained from this study were the pH value of this product ranged from 4.6 to 4.8, the total lactic acid bacteria ranged from 87 to 114 x 107 CFU/gram, with a total plate of 18 to 45 x 105 CFU/gram.*

KEYWORDS: *Curry Paluik, pH value, Lactate Acid Bacteria,Total Plate Count*

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I. INTRODUCTION

Paluik curry is one of the traditional foods made from spices and vegetables that are put together and then steamed. This study aims to determine the presence or absence of lactic acid bacteria activity from gulai paluik so that later identification and characterization of lactic acid bacteria can be carried out as potential probiotics. Benchmarks used in determining the eligibility and safety of a food ingredient are to measure the microbiological content in processed food. The indicator used in determining the feasibility of food is by looking at the content of coliform bacteria and Escherichia coli [1].

There are content microbes in these foods and beverages that will cause changes in organoleptic preparations, especially if the food and drink will enter the body. Both pathogenic and non-pathogenic microbes when present in large quantities will be very dangerous for the human body carcinogenic. For food or drink that comes from natural ingredients, usually, the pollution comes from processing by hand or unsterile equipment and through raw materials. Therefore, the microbiological quality of food and beverages is an important issue and needs to be considered [2].

Harmful contaminants found in food can cause foodborne disease. Besides being able to contaminate processed food bacteria pathogens also can cause damage to food. Other microbes such as fungi (fungi) can also cause damage to food because some fungi such as Aspergillus flavus produce aflatoxins. This fungus is usually found in raw materials such as nuts. The presence of bacterial and fungal contaminants found in food can be due to improper food storage methods or the presence of contaminants in the food itself. Of all the sources of contaminants that can contaminate food, the biggest impact is the contamination of poor personal hygiene [3]. Based on this, an experiment was carried out, namely microbiological testing on food and beverage ingredients, by testing the microbes contained in these foods and beverages qualitatively and quantitatively.

Many research results show that the habit of consuming probiotic products plays a good role in health, especially in increasing the immune system. The benefits that can be obtained from the habit of consuming probiotics can increase non-specific immune defenses [4].

II. METHODS

The study was held at the Faculty Farm University Andalas to be precise in the Technology Laboratory Results in Cattle Part Microbiology. Materials used in the study this is Paluik Curry, aquades, and the medium Man Ragosa and Sharp (MRS) Broth. Curry Paluik was taken from market traditional in Limbanang Regency Fifty Cities as many as 3 samples, namely sample A, sample B, and sample C.

Total lactate acid bacteria (LAB)

Counting total lactate acid bacteria(LAB) uses the method count cup (Total Plate Count). According to Fardiaz (1993), the total BAL was carried out with the method calculate the total BAL that grows on Man Rogosa and Sharpe (MRS) culture media. Total BAL begins with dilution sample in aquadest sterile with a 1:9 ratio. Then conducted dilution from 10 1 - 10 8. Taken as much as 0.1 ml on dilution first to in 0.9 ml of distilled water sterile, for next dilution second conducted with 0.1 ml already diluted on dilution first then entered to in 0.9 ml of distilled water sterile, dilution third and next conducted with same way like dilution second. Making MRS so that as much as 1000 ml is carried out with method weigh the MRS agar as much as 65.13 grams then dissolved to in 1000 ml of distilled water. MRS agar solution was then sterilized using an autoclave at 121°C for 15 minutes. A total of 1 ml sample results dilution entered to in petri dish that has been contained MRS agar half solid ± 10 ml. The petri dish is moved to shape number 8 and homogenized. After solid, cup the incubated with position backward on 37°C for 48 hours.

pH value

pH test performed using a pH meter. Before use, the end cathode indicator is washed with use aquadest and cleaned with tissues. pH meter calibrated with dip end cathode to buffer solutions 4 and 7 [5]. Results measurement be read on a pH meter.

III. RESULTS AND DISCUSSION

Results analysis that has been conducted to total LAB, pH, and TPC values can be seen in table 1.

Sample	Test		
	pH value	Total BAL	TPC
Sample A	4.6	114 x 10^{7} CFU/gr	45 x 10^{5} CFU/gr
Sample B	4.8	88 x 10^{7} CFU/gr	18 x 10^{5} CFU/gr
Sample C	4.8	87 x 10^{7} CFU/gr	37 x 10^{5} CFU/gr

pH value

Results obtained _ from the study this is pH value obtained range between 4.6 -4.8. According to Chen [6], the pH value will take effect to level the freshness of something food. This thing occurs because of the emergence of compounds that are a language like ammonia, trimethylamine, and compound volatile other. During the fermentation process, bacteria sour lactate will ferment existing carbohydrates until formed sour lactate. T high low pH at sample influenced by factor storage product. Sudrajad states that During storage occurs a breakdown of protein into compound language including ammonia [7]. pH value ingredient food During storage could be changed because the presence of broken down proteins by enzyme proteolytic and help bacteria Becomes sour carboxylic acid sulfide, ammonia, and type acid other.

Total Plate Count (TPC)

Results obtained _ from the study this is Total Plate Count (TPC) value obtained range between 18 – 45 x 10 5 CFU/gr. Based on Guidelines Criteria pollution On Food Ready Saji and Food Industry House ISBN ladder 978-602-3665-11-2, for limit maximum TPC is 1 x 10 5 colonies /gr. This thing shows more TPC value tall from limitation maximum contamination microbes. This is possibly caused because the existing contamination in the packaging process product.

Total Lactate Acid Bacteria

Bacteria total analysis of lactate acid was conducted to see the growing amount of lactate acid bacteria from the whole treatment. Results obtained for bacteria sour lactate range between 87 – 114 x 107 CFU /gr. The total number of appropriate BAL with standard from SNI (2009) namely at least 1x10 7 CFU/ml. According to Nurwantoro [8] stated that ability the biggest that BAL can degrade various types of sugar becomes various components, especially sour lactate. Total BAL earned on curry hammer including high. This thing is caused by L. bulgaricus and S. thermophilus as well as bacteria probiotics each other support and synergizes in cell multiplication. According to Fernandez [9] S. thermophilus and L. bulgaricus each other support.S. thermophilus produce pyruvate acid, formic acid, and CO2, as well as sour stimulating folate growth of L.

bulgaricus. As a result, L. bulgaricus will let go of amino acids valine, glycine and histidine required by S. thermophilus.

IV. CONCLUSION

From the result study analysis quality curry hammer could be concluded for quality physique curry hammer based on pH still including normal with a range of 4.6 -4.7. Quality from curry hammer based on Total Plate Count (TPC) value is not included in normal value because be on top limitation maximum contamination microbes that is of 18-45 x 10 5 CFU/gr. The total amount of curry BAL hammer also is above the minimum SNI standard, namely 87 – 114 x 10 7 CFU/gr.

REFERENCES

[1]. Gebru Y A and Sbhatu D B 2020 Isolation and Characterization of Probiotic LAB from Kimchi and Spontaneously Fermented Teff (Eragrostis tef (Zucc.) Trotter) Batter: Their Effects on Phenolic Content of Teff during Fermentation BioMed Research International
[2]. Lund B and Baird-Parker T C 2000 Microbiological safety and quality of food Elsevier
[3]. Abebe E, Gugsa G and Ahmed M 2020 Review on Major Food-Borne Zoonotic Bacterial Pathogens Journal of Tropical Medicine
[4]. Santiago-López L, Hernández-Mendoza A, Garcia H S, Mata-Haro V, Vallejo-Cordoba B and González-Córdova A F 2015 The effects of consuming probiotic-fermented milk on the immune system: A review of scientific evidence International Journal of Dairy Technology
[5]. Ding R, Li M, Zou Y, Wang Y, Yan C, Zhang H, Wu R and Wu J 2022 Effect of normal and strict anaerobic fermentation on physicochemical quality and metabolomics of yogurt Food Bioscience
[6]. Chen X, Chen M, Xu C and Yam K L 2019 Critical review of controlled release packaging to improve food safety and quality Critical Reviews in Food Science and Nutrition
[7]. Sudrajad A, Saefuloh I, Satria D, Surname H, Pangestu R A and Abdillah A 2021 Design and Application of Milk Fish Preserving Machine Using Liquid Smoke Method to Prevent Rotting Fish and Enhance Storability of the Fish Joint proceedings of the 2nd and the 3rd International Conference on Food Security Innovation (ICFSI 2018-2019)
[8]. Nurwantoro N, Bintoro V P, Legowo A M, Ambara L D, Prakoso A, Mulyani S and Purnomoadi A 2011 Microbiological and physical properties of beef marinated with garlic juice Journal of the Indonesian Tropical Animal Agriculture
[9]. Fernandez M A, Picard-Deland, Le Barz M, Daniel N and Marette A 2017 Yogurt and Health Fermented Foods in Health and Disease Prevention