

Conference Paper

Analysis of Total Plate Count, Yeast, and Mould Count, Salmonella spp., Escherichia coli, Staphylococcus aureus, Pseudomonas aeruginosa, Shigella spp. on Traditional Medicines

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Abstract

Anas Gilang Pratama, "Analysis of Total Plate Count, Yeast, and Mould Count, Salmonella spp., Escherichia coli, Staphylococcus aureus, Pseudomonas aeruginosa, Shigella spp. on Traditional Medicines" under the guidance of Silvester Maximus Tulandi, S.Farm., M.Sc., and Ruth Elenora Kristanty, M.Farm., Apt., 2019. Traditional medicines can be contaminated by bacteria starting from the raw material process, during production, and at the time of storage. The analysis of total plate count, yeast, and mould count on traditional medicines was done at the Microbiology Laboratory of National Agency of Drug and Food Control in Jakarta by using five types of bacteria. This work was based on microbiological test parameters on traditional medicines through several stages: homogenization, enrichment, isolation, and biochemical tests. Based on the results, the samples fulfilled the requirements on Analysis of Total Plate Count, Yeast, and Mould Count, Salmonella sp, Escherichia coli, Staphylococcus aureus, Pseudomonas aeruginosa, Shigella spp. according to the Regulation of the Head of the National Agency of Drug and Food Control No.12/2014.

Keywords: traditional medicines, microbiology, total plate count.

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1. Background

Traditional medicine has been known and used by the community in maintaining health and treating diseases. The use of traditional medicines in Indonesian would be returned by utilizing various medicinal plants because a synthetic drugs has been quite expensive and has many side effects. Therefore, the use of traditional medicines in Indonesia has been increasingly in demand. Traditional medicines could be contaminated by bacteria started from the raw material process, during production to the storage. Regulation of the Head of the National Agency of Drug and Food Control No.12/2014 required that traditional medicines should not be contaminated by Salmonella sp, Escherichia

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coli, Staphylococcus aureus, Pseudomonas aeruginosa, Shigella spp., Total Plate Count, Yeast and Mould Count.

2. Objective

To find out whether the samples fulfilled the requirements according to the Regulation of the Head of the National Agency of Drug and Food Control No.12/2014.

3. Methods

3.1. Quantitative

Total Plate Count Yeast and Mould Count

3.2. Qualitative

Salmonella sp, *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Shigella spp*.

4. Results

TABLE 1

QUANTITATIVE					
Analysis	Results				Requirements
	Sample 1	Sample 2	Sample 3	Sample 4	
Total Plate Count	15 x 10 ¹ cfu/g	1 x 10 ² cfu/g	1 x 10 ¹ cfu/g	1 x 10 ¹ cfu/mL	≤ 10 ⁴ cfu/g or mL
Yeast and Mould Count	<1 x 10 ¹ cfu/g	2 x 10 ¹ cfu/g	<1 x 10 ¹ cfu/g	<1 x 10 ¹ cfu/mL	≤ 10 ³ cfu/g or mL

5. Conclusion

Based on the results, the samples fulfilled the requirements on Analysis of Total Plate Count, Yeast and Mould Count, Salmonella sp, Escherichia coli, Staphylococcus aureus, Pseudomonas aeruginosa, Shigella spp. according to the Regulation of the Head of the National Agency of Drug and Food Control No.12/2014.

TABLE 2

QUALITATIVE					
Types of Bacteria	Results				Requirements
	Sample 1	Sample 2	Sample 3	Sample 4	
Salmonella sp	-	-	-	-	-
Escherichia coli	-	-	-	-	-
Staphylococcus aureus	-	-	-	-	-
Pseudomonas aeruginosa	-	-	-	-	-
Shigella spp	-	-	-	-	-

References

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