

Conference Paper

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

Anas Gilang Pratama, Ruth Elenora Kristanty, and Silvester Maximus Tulandi

Jurusan Analisa Farmasi dan Makanan, Politeknik Kesehatan Kemenkes Jakarta II

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.

Corresponding Author:

Anas Gilang Pratama

Received: 23 September 2019

Accepted: 18 November 2019

Published: 22 December 2019

Publishing services provided by
Knowledge E

© Anas Gilang Pratama

et al. This article is distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use and redistribution provided that the original author and source are credited.

Selection and Peer-review under the responsibility of the ICHHP Conference Committee.

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

OPEN ACCESS

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	15×10^1 cfu/g	1×10^2 cfu/g	1×10^1 cfu/g	1×10^1 cfu/mL	$\leq 10^4$ cfu/g or ml
Yeast and Mould Count	$<1 \times 10^1$ cfu/g	2×10^1 cfu/g	$<1 \times 10^1$ cfu/g	$<1 \times 10^1$ cfu/mL	$\leq 10^3$ 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

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

References

- [1] Badan Pengawas Obat dan Makanan. 2015. Metode Analisa 2015. Jakarta: Pusat Pengujian Obat dan Makanan.
- [2] Tille, Patricia M. 2014. Bailey and Scott's Diagnostic Microbiology Thirteenth Ed. South Dakota : Elsevier