



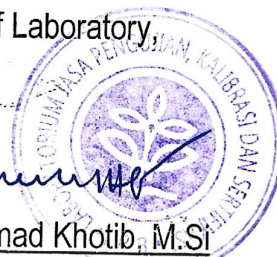
KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN  
**INSTITUT PERTANIAN BOGOR**  
**UNIT LABORATORIUM JASA PENGUJIAN, KALIBRASI DAN SERTIFIKASI**

Sertifikat Akreditasi KAN No. LP-156-IDN ; LK-220-IDN ; LSP-030-IDN ; LSHACCP-009-IDN ; LSSMKP-009-IDN  
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Certificate No. : LT-10-20-0414  
Lab. No. : BM/V/20/1088  
Customer : PT TEVO INDONESIA  
Address : Raya Nginden 1 Surabaya 60118  
Jawa Timur  
Sample Matrix : Liquid Hand Sanitizer  
Test for : Antimicrobial Effectiveness Testing  
Received Date : 11-05-2020  
Issued Date : 07-09-2020

Head of Laboratory,



Dr. Mohammad Khotib, M.Si  
NIP. 19781018 200701 1 002



|                |                               |             |
|----------------|-------------------------------|-------------|
| FR-20.2-LT-1.0 | <b>LABORATORY TEST REPORT</b> | Page 1 of 1 |
|----------------|-------------------------------|-------------|

|                 |                         |               |              |
|-----------------|-------------------------|---------------|--------------|
| Certificate No. | : LT-10-20-0414         | Received Date | : 11-05-2020 |
| Laboratory No.  | : BM/V/20/1088          | Finished Date | : 24-07-2020 |
| Sample Matrix   | : Liquid Hand Sanitizer |               |              |
| Sample Id       | : Berry C               |               |              |
| Packaging       | : Plastic Bottle        |               |              |

| Microorganism Strains                | Initial Bacterial Suspension           |                       | Result                               |                                      | Method*              |
|--------------------------------------|----------------------------------------|-----------------------|--------------------------------------|--------------------------------------|----------------------|
|                                      |                                        |                       | Day 14                               | Day 28                               |                      |
| Escherichia coli (ATCC 10536)        | N = $1.75 \times 10^5$<br>Log N = 5.24 | Na<br>Log Na<br>Log R | $1.95 \times 10^6$<br>6.29<br>- 1.05 | $1.71 \times 10^6$<br>6.23<br>- 0.99 | USP 35<br>Chapter 51 |
| Salmonella choleraesuis (ATCC 10708) | N = $1.61 \times 10^5$<br>Log N = 5.21 | Na<br>Log Na<br>Log R | $1.76 \times 10^6$<br>6.25<br>- 1.04 | $1.51 \times 10^6$<br>6.18<br>- 0.97 |                      |

#### REMARKS

\*Outside the scope of accreditation

Test Temperature : 25°C Incubation Temperature : 35°C

Media to represents as antacid in the test : Tryptone soya broth + 0.2 % Sample

N = number of cfu/ml of the initial bacterial suspension

Log N = logarithmic N

Na = number of cfu/ml in the test mix after certain period of time

Log R = logarithmic reduction in number of viable cells (log N – log Na)

Laboratory is not responsible for the sampling process

July 24, 2020

Head of Laboratory

  
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Note: the division time for E. coli and similar microorganisms ranges from 20 minutes to 1 hour. Thus a single E. coli cell, which divides approximately every 30 minutes, can grow into a colony containing  $10^7 - 10^8$  cells in 12 hours ( $2^{24} = 1.7 \times 10^7$ ).

Control : without inhibition and under USP 35 test method of open sample, initial E.coli of  $10^5$  will be  $10^{12}$  in 12 hours time and increase by  $10^{12}$  every 12 hours after that.