

## **BAB V**

### **KESIMPULAN DAN SARAN**

#### **A. KESIMPULAN**

1. *Facial foam antiacne* merk “X”, “Y”, dan “Z” memiliki aktivitas antibakteri terhadap *Staphylococcus epidermidis* ATCC 12228.
2. *Facial foam* merk “Y” dan “Z” memiliki aktivitas antibakteri yang sama terhadap *Staphylococcus epidermidis* ATCC 12228 berdasarkan hasil analisis statistik, dan memiliki aktivitas lebih besar di bandingkan dengan merk “X”.

#### **B. SARAN**

1. Dilakukan penelitian serupa dengan menggunakan bakteri lain yang berperan dalam patogenesis *Acne vulgaris* seperti *Propionibacterium acne*.
2. Dilakukan penelitian lebih lanjut secara *in vitro* mengenai efektivitas *facial foam antiacne*.
3. Melakukan uji perbandingan pada metode yang lain, selain metode difusi disk.

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**L**

**A**

**M**

**P**

**I**

**R**

**A**

**N**



Lampiran 1 bakteri *Staphylococcus epidermidis* ATCC 12228



Lampiran 2 standarisasi *Mc farland* 0,5



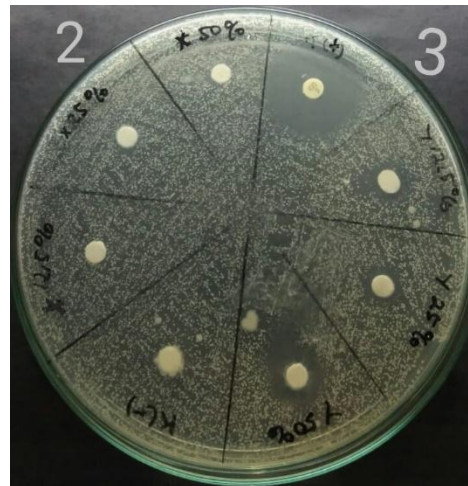
Lampiran 3 *facial foam* merk "X"



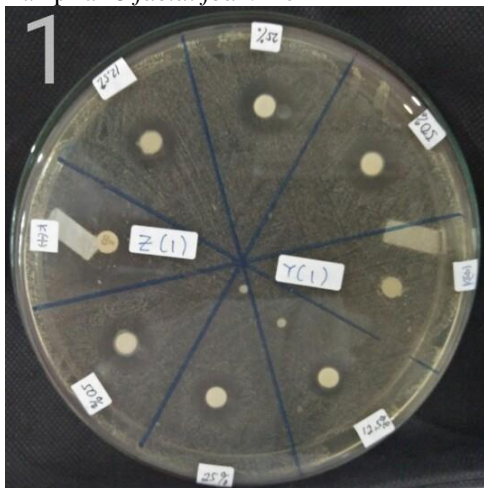
Lampiran 4 *facial foam* merk "Y"



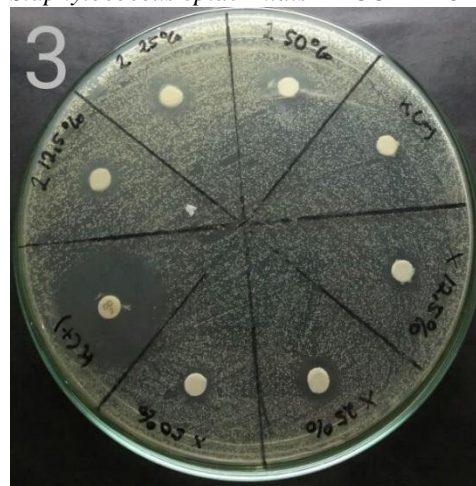
Lampiran 5 facial foam merk "Z"



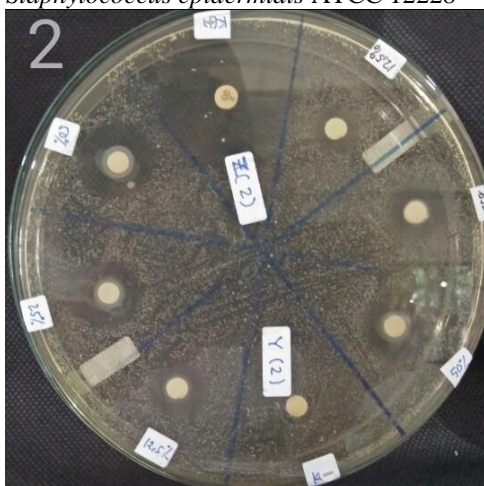
Lampiran 8 hasil uji aktivitas antibakteri sampel "X" dan "Y" terhadap bakteri *Staphylococcus epidermidis* ATCC 12228



Lampiran 6 hasil uji aktivitas antibakteri sampel "Y" dan "Z" terhadap bakteri *Staphylococcus epidermidis* ATCC 12228



Lampiran 9 hasil uji aktivitas antibakteri sampel "X" dan "Z" terhadap bakteri *Staphylococcus epidermidis* ATCC 12228



Lampiran 7 hasil uji aktivitas antibakteri sampel "Y" dan "Z" terhadap bakteri *Staphylococcus epidermidis* ATCC 12228



Lampiran 10 hasil uji aktivitas antibakteri sampel "X" terhadap bakteri *Staphylococcus epidermidis* ATCC 1222

Lampiran 11 hasil analisis statistik two-way anova

**One-Sample Kolmogorov-Smirnov Test**

|                                  |                | Daya Hambat |
|----------------------------------|----------------|-------------|
| N                                |                | 33          |
| Normal Parameters <sup>a,b</sup> | Mean           | 13.45       |
|                                  | Std. Deviation | 7.702       |
|                                  | Absolute       | .208        |
| Most Extreme Differences         | Positive       | .208        |
|                                  | Negative       | -.175       |
| Kolmogorov-Smirnov Z             |                | 1.197       |
| Asymp. Sig. (2-tailed)           |                | .114        |

a. Test distribution is Normal.

b. Calculated from data.

**Between-Subjects Factors**

|                |   | Value Label | N  |
|----------------|---|-------------|----|
| Konsentrasi FF | 1 | 12,5%       | 11 |
|                | 2 | 25%         | 11 |
|                | 3 | 50%         | 11 |
| Sampel         | 1 | FF merk X   | 9  |
|                | 2 | FF merk Y   | 9  |
|                | 3 | FF merk Z   | 9  |
|                | 4 | Klindamisin | 3  |
|                | 5 | Aquadest    | 3  |



### Descriptive Statistics

Dependent Variable: Daya Hambat

| Konsentrasi FF | Sampel      | Mean  | Std. Deviation | N  |
|----------------|-------------|-------|----------------|----|
| 12,5%          | FF merk X   | 7.67  | 2.517          | 3  |
|                | FF merk Y   | 11.33 | 1.528          | 3  |
|                | FF merk Z   | 12.33 | 1.528          | 3  |
|                | Klindamisin | 30.00 | .              | 1  |
|                | Aquadest    | .00   | .              | 1  |
|                | Total       | 11.27 | 7.363          | 11 |
| 25%            | FF merk X   | 12.00 | 2.000          | 3  |
|                | FF merk Y   | 13.33 | 1.528          | 3  |
|                | FF merk Z   | 14.67 | .577           | 3  |
|                | Klindamisin | 33.00 | .              | 1  |
|                | Aquadest    | .00   | .              | 1  |
|                | Total       | 13.91 | 7.648          | 11 |
| 50%            | FF merk X   | 11.33 | .577           | 3  |
|                | FF merk Y   | 16.00 | 1.732          | 3  |
|                | FF merk Z   | 16.67 | .577           | 3  |
|                | Klindamisin | 35.00 | .              | 1  |
|                | Aquadest    | .00   | .              | 1  |
|                | Total       | 15.18 | 8.268          | 11 |
| Total          | FF merk X   | 10.33 | 2.598          | 9  |
|                | FF merk Y   | 13.56 | 2.455          | 9  |
|                | FF merk Z   | 14.56 | 2.068          | 9  |
|                | Klindamisin | 32.67 | 2.517          | 3  |
|                | Aquadest    | .00   | .000           | 3  |
|                | Total       | 13.45 | 7.702          | 33 |

### Levene's Test of Equality of Error Variances<sup>a</sup>

Dependent Variable: Daya Hambat

| F     | df1 | df2 | Sig. |
|-------|-----|-----|------|
| 1.388 | 14  | 18  | .253 |

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Konsentrasi + Sampel + Konsentrasi \* Sampel

### Tests of Between-Subjects Effects

Dependent Variable: Daya Hambat

| Source               | Type III Sum of Squares | df | Mean Square | F        | Sig. |
|----------------------|-------------------------|----|-------------|----------|------|
| Corrected Model      | 1855.515 <sup>a</sup>   | 14 | 132.537     | 55.914   | .000 |
| Intercept            | 5056.790                | 1  | 5056.790    | 2133.333 | .000 |
| Konsentrasi          | 53.802                  | 2  | 26.901      | 11.349   | .001 |
| Sampel               | 1749.071                | 4  | 437.268     | 184.472  | .000 |
| Konsentrasi * Sampel | 18.990                  | 8  | 2.374       | 1.001    | .468 |
| Error                | 42.667                  | 18 | 2.370       |          |      |
| Total                | 7872.000                | 33 |             |          |      |
| Corrected Total      | 1898.182                | 32 |             |          |      |

a. R Squared = .978 (Adjusted R Squared = .960)

#### 1. Konsentrasi FF

Dependent Variable: Daya Hambat

| Konsentrasi FF | Mean   | Std. Error | 95% Confidence Interval |             |
|----------------|--------|------------|-------------------------|-------------|
|                |        |            | Lower Bound             | Upper Bound |
| 12,5%          | 12.267 | .533       | 11.146                  | 13.387      |
| 25%            | 14.600 | .533       | 13.480                  | 15.720      |
| 50%            | 15.800 | .533       | 14.680                  | 16.920      |

#### 2. Sampel

Dependent Variable: Daya Hambat

| Sampel      | Mean       | Std. Error | 95% Confidence Interval |             |
|-------------|------------|------------|-------------------------|-------------|
|             |            |            | Lower Bound             | Upper Bound |
| FF merk X   | 10.333     | .513       | 9.255                   | 11.412      |
| FF merk Y   | 13.556     | .513       | 12.477                  | 14.634      |
| FF merk Z   | 14.556     | .513       | 13.477                  | 15.634      |
| Klindamisin | 32.667     | .889       | 30.799                  | 34.534      |
| Aquadest    | 1.154E-013 | .889       | -1.867                  | 1.867       |

### 3. Konsentrasi FF \* Sampel

Dependent Variable: Daya Hambat

| Konsentrasi FF | Sampel      | Mean       | Std. Error | 95% Confidence Interval |             |
|----------------|-------------|------------|------------|-------------------------|-------------|
|                |             |            |            | Lower Bound             | Upper Bound |
| 12,5%          | FF merk X   | 7.667      | .889       | 5.799                   | 9.534       |
|                | FF merk Y   | 11.333     | .889       | 9.466                   | 13.201      |
|                | FF merk Z   | 12.333     | .889       | 10.466                  | 14.201      |
|                | Klindamisin | 30.000     | 1.540      | 26.765                  | 33.235      |
|                | Aquadest    | 1.118E-013 | 1.540      | -3.235                  | 3.235       |
| 25%            | FF merk X   | 12.000     | .889       | 10.133                  | 13.867      |
|                | FF merk Y   | 13.333     | .889       | 11.466                  | 15.201      |
|                | FF merk Z   | 14.667     | .889       | 12.799                  | 16.534      |
|                | Klindamisin | 33.000     | 1.540      | 29.765                  | 36.235      |
|                | Aquadest    | 1.028E-013 | 1.540      | -3.235                  | 3.235       |
| 50%            | FF merk X   | 11.333     | .889       | 9.466                   | 13.201      |
|                | FF merk Y   | 16.000     | .889       | 14.133                  | 17.867      |
|                | FF merk Z   | 16.667     | .889       | 14.799                  | 18.534      |
|                | Klindamisin | 35.000     | 1.540      | 31.765                  | 38.235      |
|                | Aquadest    | 1.315E-013 | 1.540      | -3.235                  | 3.235       |

## Post Hoc Tests

### Multiple Comparisons

Dependent Variable: Daya Hambat

Tukey HSD

| (I) Sampel  | (J) Sampel  | Mean<br>Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval |             |
|-------------|-------------|--------------------------|------------|------|-------------------------|-------------|
|             |             |                          |            |      | Lower Bound             | Upper Bound |
| FF merk X   | FF merk Y   | -3.22*                   | .726       | .003 | -5.42                   | -1.03       |
|             | FF merk Z   | -4.22*                   | .726       | .000 | -6.42                   | -2.03       |
|             | Klindamisin | -22.33*                  | 1.026      | .000 | -25.44                  | -19.23      |
| FF merk Y   | Aquadest    | 10.33*                   | 1.026      | .000 | 7.23                    | 13.44       |
|             | FF merk X   | 3.22*                    | .726       | .003 | 1.03                    | 5.42        |
|             | FF merk Z   | -1.00                    | .726       | .649 | -3.19                   | 1.19        |
| FF merk Z   | Klindamisin | -19.11*                  | 1.026      | .000 | -22.21                  | -16.01      |
|             | Aquadest    | 13.56*                   | 1.026      | .000 | 10.45                   | 16.66       |
|             | FF merk X   | 4.22*                    | .726       | .000 | 2.03                    | 6.42        |
| Klindamisin | FF merk Y   | 1.00                     | .726       | .649 | -1.19                   | 3.19        |
|             | Klindamisin | -18.11*                  | 1.026      | .000 | -21.21                  | -15.01      |
|             | Aquadest    | 14.56*                   | 1.026      | .000 | 11.45                   | 17.66       |
| Aquadest    | FF merk X   | 22.33*                   | 1.026      | .000 | 19.23                   | 25.44       |
|             | FF merk Y   | 19.11*                   | 1.026      | .000 | 16.01                   | 22.21       |
|             | FF merk Z   | 18.11*                   | 1.026      | .000 | 15.01                   | 21.21       |
| Aquadest    | Aquadest    | 32.67*                   | 1.257      | .000 | 28.87                   | 36.47       |
|             | FF merk X   | -10.33*                  | 1.026      | .000 | -13.44                  | -7.23       |
|             | FF merk Y   | -13.56*                  | 1.026      | .000 | -16.66                  | -10.45      |
| Aquadest    | FF merk Z   | -14.56*                  | 1.026      | .000 | -17.66                  | -11.45      |
|             | Klindamisin | -32.67*                  | 1.257      | .000 | -36.47                  | -28.87      |

Based on observed means.

The error term is Mean Square(Error) = 2.370.

\*. The mean difference is significant at the .05 level.

## Homogeneous Subsets

### Daya Hambat

Tukey HSD<sup>a,b,c</sup>

| Sampel      | N | Subset |       |       |       |
|-------------|---|--------|-------|-------|-------|
|             |   | 1      | 2     | 3     | 4     |
| Aquadest    | 3 | .00    |       |       |       |
| FF merk X   | 9 |        | 10.33 |       |       |
| FF merk Y   | 9 |        |       | 13.56 |       |
| FF merk Z   | 9 |        |       | 14.56 |       |
| Klindamisin | 3 |        |       |       | 32.67 |
| Sig.        |   | 1.000  | 1.000 | .840  | 1.000 |

Means for groups in homogeneous subsets are displayed.

Based on observed means.

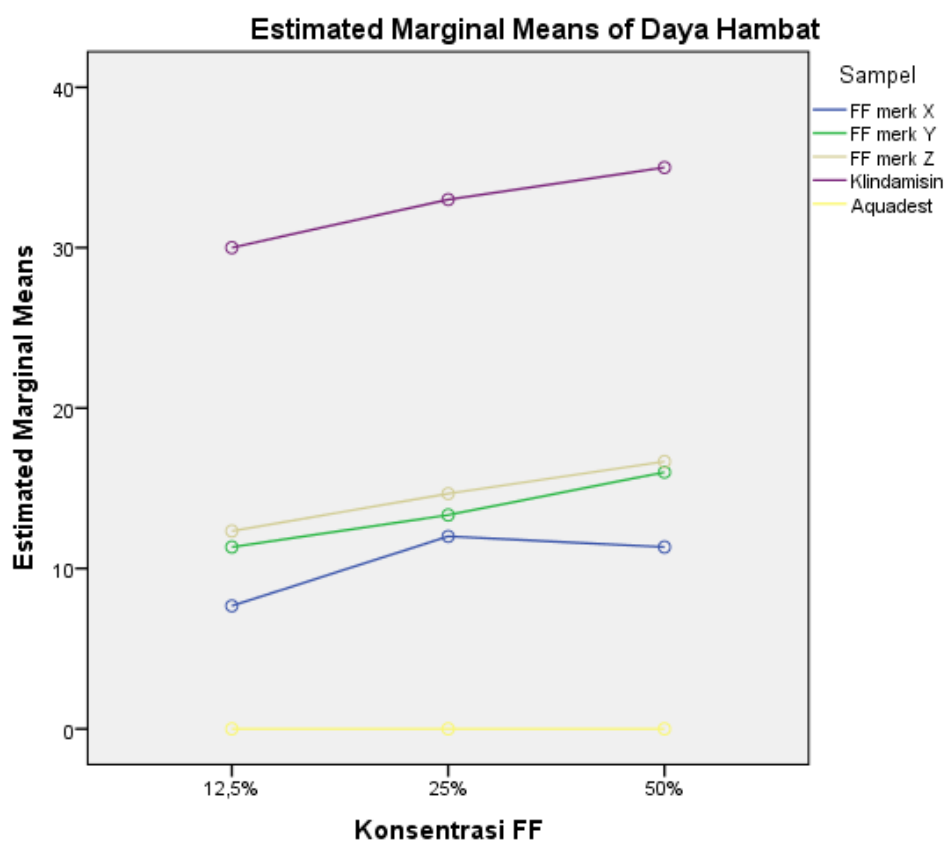
The error term is Mean Square(Error) = 2.370.

a. Uses Harmonic Mean Sample Size = 5.000.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

c. Alpha = .05.

## Profile Plots



### Multiple Comparisons

Dependent Variable: Daya Hambat

LSD

| (I) Sampel  | (J) Sampel  | Mean<br>Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval |             |
|-------------|-------------|--------------------------|------------|------|-------------------------|-------------|
|             |             |                          |            |      | Lower Bound             | Upper Bound |
| FF merk X   | FF merk Y   | -3.22*                   | .726       | .000 | -4.75                   | -1.70       |
|             | FF merk Z   | -4.22*                   | .726       | .000 | -5.75                   | -2.70       |
|             | Klindamisin | -22.33*                  | 1.026      | .000 | -24.49                  | -20.18      |
|             | Aquadest    | 10.33*                   | 1.026      | .000 | 8.18                    | 12.49       |
| FF merk Y   | FF merk X   | 3.22*                    | .726       | .000 | 1.70                    | 4.75        |
|             | FF merk Z   | -1.00                    | .726       | .185 | -2.52                   | .52         |
|             | Klindamisin | -19.11*                  | 1.026      | .000 | -21.27                  | -16.95      |
|             | Aquadest    | 13.56*                   | 1.026      | .000 | 11.40                   | 15.71       |
| FF merk Z   | FF merk X   | 4.22*                    | .726       | .000 | 2.70                    | 5.75        |
|             | FF merk Y   | 1.00                     | .726       | .185 | -.52                    | 2.52        |
|             | Klindamisin | -18.11*                  | 1.026      | .000 | -20.27                  | -15.95      |
|             | Aquadest    | 14.56*                   | 1.026      | .000 | 12.40                   | 16.71       |
| Klindamisin | FF merk X   | 22.33*                   | 1.026      | .000 | 20.18                   | 24.49       |
|             | FF merk Y   | 19.11*                   | 1.026      | .000 | 16.95                   | 21.27       |
|             | FF merk Z   | 18.11*                   | 1.026      | .000 | 15.95                   | 20.27       |
|             | Aquadest    | 32.67*                   | 1.257      | .000 | 30.03                   | 35.31       |
| Aquadest    | FF merk X   | -10.33*                  | 1.026      | .000 | -12.49                  | -8.18       |
|             | FF merk Y   | -13.56*                  | 1.026      | .000 | -15.71                  | -11.40      |
|             | FF merk Z   | -14.56*                  | 1.026      | .000 | -16.71                  | -12.40      |
|             | Klindamisin | -32.67*                  | 1.257      | .000 | -35.31                  | -30.03      |

Based on observed means.

The error term is Mean Square(Error) = 2.370.

\*. The mean difference is significant at the 0.05 level.