## CHAPTER5

## TH ERESULT ANDDATA ANALYSIS

In this research,the observation of observing the extract effect of *Thymus vulgaris* on IL-12 in blood used ELISA, and number of bacterial colonies in liver male mice model infected with.*Salmonella Typhimuryum*

This research used 5 groups with 4 mice in each group, with different dose of Thymus vulgaris in D1:250mg/kgB.wt,D2:500mg/kgB.wt,D 3:750mg/kgB.wt of micet here were also positive control(+) *Salmonella Typhimuryum* negative control(-).

### 5.1.The effect of *Thymus vulgaris* extract on the level of blood IL12

Table 5.1 The results of the study are as shown inas follows:

| Groups | Sample | | | | Mean ± Std. dev. |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | |
| C- | 25.81 | 1.08 | 26.06 | 14.36 | 16.83±11.83 |
| C+ | 5.23 | 4.94 | 12.32 | 11.16 | 8.41±3.88 |
| D1 | 23.28 | 25.27 | 22.99 | 26.10 | 24.41±1.52 |
| D2 | 55.56 | 39.34 | 40.91 | 36.14 | 42.99±8.61 |
| D3 | 38.76 | 45.06 | 39.92 | 42.41 | 41.54±2.80 |

C-:negative control ,C+:positive control,D1:Treatment group1,D 2:treatment group2,D 3:treatment group3

Based on the table above shows that the difference in dose of *Thymus vulgaris* extract influence or different effects on IL-12. Based on the table above shows that the difference in dose of *Thymus vulgaris* extract influence or different effects on IL-12. The existence of the effect of *Thymus vulgaris* extract is starting to look where the IL-12 in mice induced *Salmonella Typhimurium* bacteria becomes highest, after the treatment was given in the form of *Thymus vulgaris* extract started at a dose of 250 mg/kgETV (D1), compared with IL-12 in the positive control group. Then the IL-12 more increased when given higher doses of 500 mg/kgETV (D2), until the higher doses of 750 mg/kgETV (D3). Thus, based on the assessment descriptively according to the mean IL-12 is, it can be said that the administration of treatment in the form of *Thymus vulgaris* extract at a dose of 250 mg/kgETV (D1), 500 mg/kgETV (D2), and 750 mg/kgETV (D3) showed different influences, where the higher dose of *Thymus vulgaris* extract provided was further increase the IL-12.

As for the overall differences in IL-12 in each treatment above can also be depicted in graphic form as follows.

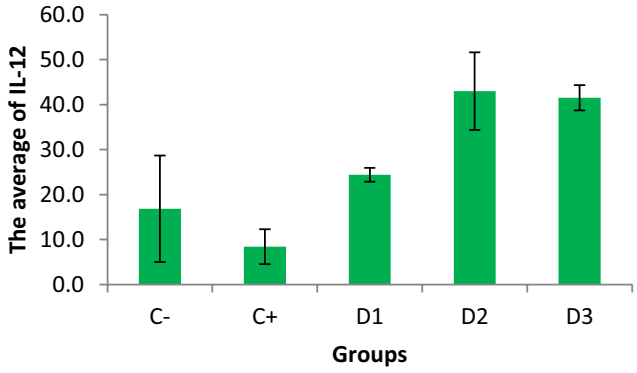


Figure5. 1 Graph of IL-12 at each dose of *Thymus vulgaris* extract

Based on test data normality test using the Kolmogorov - Smirnov test , IL-12 data has p-value of 0.200 ( p > 0.05 ), so it can be concluded that the data IL-12 has a normal distribution. Thus it can be tested by ANOVA, because the assumption of normality of data distribution have been appropriate

**5.2 The effect of *Thymus vulgaris* extract on number of bacterial colonies in liver of male mice model infected with.***Salmonella Typhimuryum*

Then the results of the study are as shown in Table as follows

**Table5.2 Average of THE COLONY OF** *SALMONELLA Typhimuryum*

| Groups | Sample | | | | Mean ± Std. dev. |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | |
| C- | 0 | 4 | 0 | 0 | 1.0±2.0 |
| C+ | 223 | 137 | 142 | 238 | 185.0±52.9 |
| D1 | 115 | 32 | 0 | 78 | 56.25±50.6 |
| D2 | 0 | 0 | 0 | 0 | 0±0 |
| D3 | 0 | 0 | 0 | 0 | 0±0 |

Based on the table above shows that the difference in dose of *Thymus vulgaris* extract influence or different effects on the colony of *Salmonella Typhimurium*. Based on the table above shows that the difference in dose of *Thymus vulgaris* extract influence or different effects on the colony of *Salmonella Typhimurium*. The existence of the effect of *Thymus vulgaris* extract is starting to look where the colony of

*Salmonella typhimurium* in mice induced *Salmonella Typhimurium* bacteria in the group D1 becomes lowest than positive control group, after the treatment was given in the form of *Thymus vulgaris* extract started at a dose of 250 mg/ml. Then the colony of *Salmonella Typhimurium* becomes zero when given higher doses of 500 mg/ml (D2), and decrease again when given higher doses of 750 mg/ml (D3).

As for the overall differences in the colony of *Salmonella Typhimurium* in each treatment above can also be depicted in graphic form as follows.

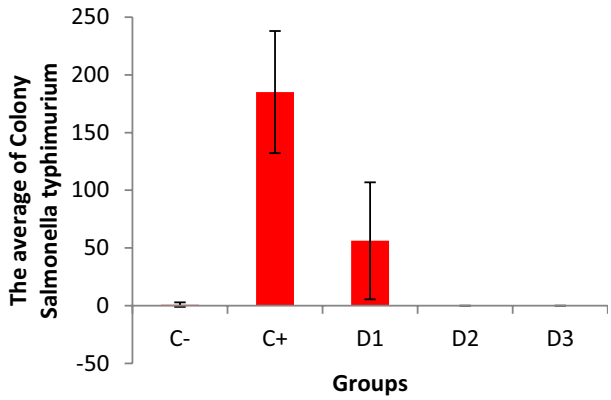


Figure5.2 Graph of the colony of *Salmonella* T*yphimurium* at each dose *Thymus vulgaris* extract

p value 0.005 that is lower than alpha 0.05, so rejected the statistical hypothesis which states there is no relationship between the dose of *Thymus vulgaris* extract with the colony of *Salmonella Typhimurium*. In other words, it shows there's significant relationship between the dose of *Thymus vulgaris* extract with the colony of *Salmonella Typhimurium,* where the higher of the dose *Thymus vulgaris* extract give The colony of *Salmonella Typhimurium* of negative control group, D1 (250 mg/ml), D2 (500 mg/ml ), and D3 (750 mg/ml) have different significantly with the colony of *Salmonella Typhimurium* in the positive control group ($p<0.05$). However, The colony of *Salmonella Typhimurium* of negative control group, D1 (250 mg/ml ), D2 (500 mg/ml ), and D3 (750 mg/ml) did not differ significantly for one each other ($p>0.05$).

Then the test results comparing multiple (Tukey 's Test) in each treatment showed that the colony of *Salmonella Typhimurium* in the positive control group differ significantly with the colony of *Salmonella Typhimurium* in negative control group, D1 (250 mg/ml ), D2 (500 mg/ml ), and D3 (750 mg/ml) ($p<0.05$).

n, than the colony of *Salmonella Typhimurium* wasl be decrease. And vice vers

the effect of *Thymus vulgaris* extract to the average the colony of *Salmonella Typhimurium* of research results by using One way ANOVA, it is necessary to the

fulfillment of some of the assumptions of data, where's data the colony of *Salmonella Typhimurium* must have a normal distribution and has a homogeneous variance.

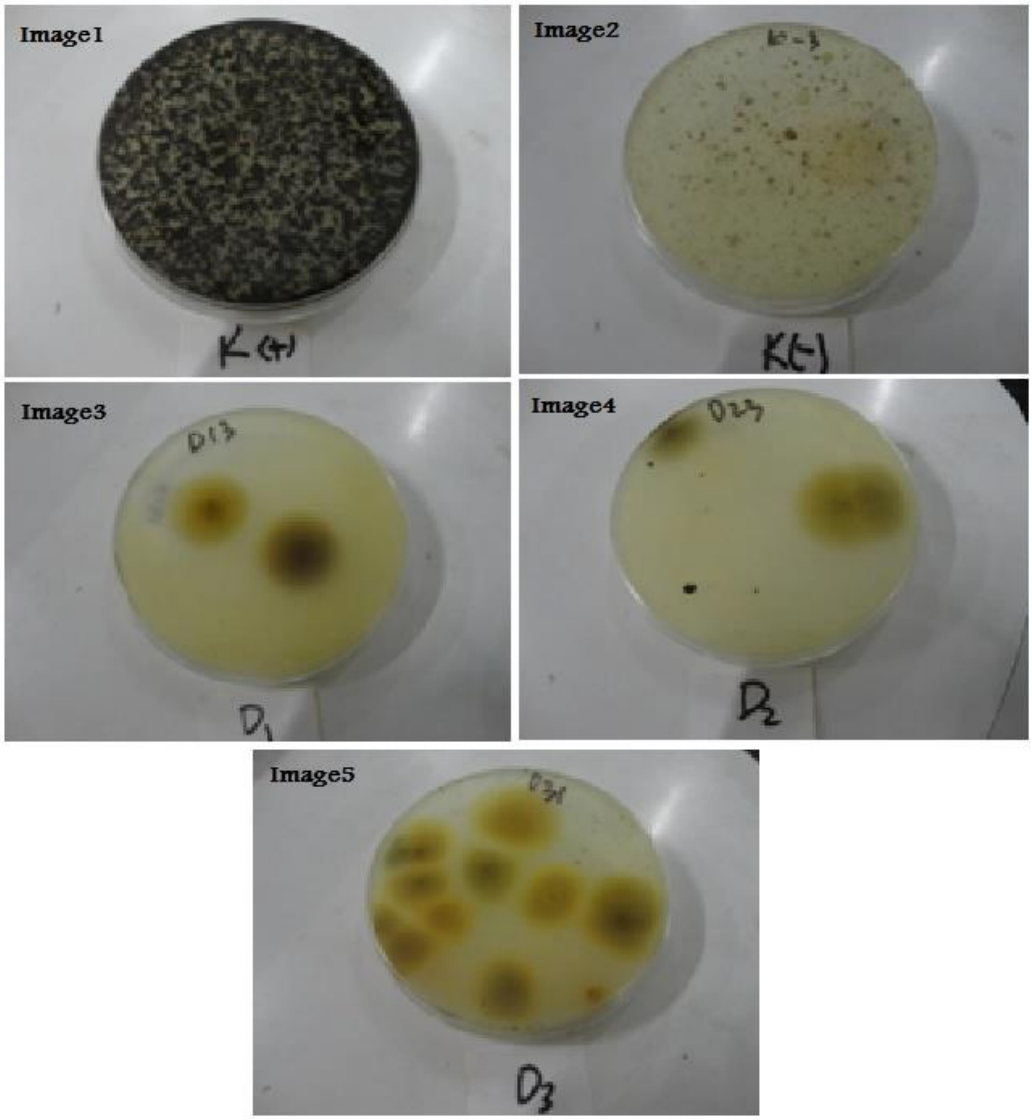


Figure5.3: *Salmonella typhimurium* colonies:

Image1: Positive control (there is over growth of bacteria)

Image2: Negativecontrol (There is no growth of bacteria)
Image3:Treatmentgroup1(there is no growth of bacteria)
Image4:Treatmentgroup2(there is no growth of bacteria)
Image5:Treatmentgroup3(there is no growth of bacteria)