**Chapter V**

**Conclusion and Recommendations**

**Conclusion**

.The effects of Sugar Apple (*Annona squamosa*) leaf extracts on the Black Bread Molds (*Rhizopus stolonifer*). After careful analysis of the data gathered and proper interpretation of the statistical treatment used, the researchers found out the different effects of the extracts on the Molds. The effects varied because of the different maceration process undergone by the leaves.

There had been a control group of cultured Black Bread Molds *(Rhizopus stolonifer)* that was left untouched and no extract added. The rest of the cultured Black Bread Molds *(Rhizopus stolonifer)*  were experimented by adding the extracts macerated from Water, Methanol, And Chloroform. All had three trials.

**Control Group**

The Control are the Black Bread Molds *(Rhizopus stolonifer)* that are not given any treatment by the extracts. This would show the normal growth of inhibition of the fungi to the bread.

|  |  |  |  |
| --- | --- | --- | --- |
| Trials | Initial ZOI | Final ZOI | Difference |
| Control Trial 1 | 1.4 in | 3.1 in | 1.7 in |
| Control Trial 2 | 1.6 in | 2.8 in | 1.2 in |
| Control Trial 3 | 1.7 in | 3.2 in | 1.5 in |

Figure 4. Results for the Control Group

**Extraction 1**

Extraction 1 was macerated by water. The concentration made the extracts from the A. squamosa, when treated to the Black Bread Molds *(Rhizopus stolonifer)*  gave a difference in the difference of the Initial diameter and Final diameter of the Zone of Inihibition.

|  |  |  |  |
| --- | --- | --- | --- |
| Trials | Initial ZOI | Final ZOI | Difference |
| Water Trial 1 | 1.2 in | 1.2 in | 0 in |
| Water Trial 2 | 1.4 in | 1.5 in | .1 in |
| Water Trial 3 | 1.5 in | 1.7 in | .2 in |

Figure 5. Results for Water-macerated A. squamosa leaves

**Extraction 2**

Extraction 2 was macerated by Methanol. The concentration made the extracts from the A. squamosa, when treated to the Black Bread Molds *(Rhizopus stolonifer)* gave a difference in the difference of the Initial diameter and Final diameter of the Zone of Inihibition.

|  |  |  |  |
| --- | --- | --- | --- |
| Trial | Initial ZOI | Final ZOI | Difference |
| Methanol Trial 1 | 1.9 in | 2 in | .1 in |
| Methanol Trial 2 | 1.1 in | 1.1 in | 0 in |
| Methanol Trial 3 | 1.3 in | 1.4 in | .1 in |

Figure 6. Results for Methanol-macerated A. squamosa leaves

**Extraction 3**

Extraction 3 was macerated by chloroform. The concentration made the extracts from the A. squamosa, when treated to the Black Bread Molds *(Rhizopus stolonifer)* gave a difference in the difference of the Initial diameter and Final diameter of the Zone of Inihibition.

|  |  |  |  |
| --- | --- | --- | --- |
| Trial | Initial ZOI | Final ZOI | Difference |
| Chloroform Trial 1 | 1.4 in | 1.4 in | 0 in |
| Chloroform Trial 2 | 1.5 in | 1.6 in | .1 in |
| Chloroform Trial 3 | 1.4 in | 1.7 in | .3 in |

Figure 7. Results for Chloroform-macerated A. squamosa leaves

Comparing the data collected, gathered and interpreted, we see a significant effect of multitasking to our performance and output. And, the researchers conclude that the results of the experiment that was conducted revealed that the leaves of A. squamosa possess potential antifungal property.

**Recommendations:**

As the research study was still on the process, there had been factor that could have affected the results and outcomes, for more reliable research, the researchers recommend the following:

A more complex microbiological study should be brought about the in vitro antifungal activities of A. squamosa

Calculate and present the idea of in a more specific and accurate data for the interpretation, analysis and discussions.

Further studies are required to isolate the active components from the extracts.