CHAPTER 5

CONCLUSION, RECOMMEDATION AND COMMERCIALIZATION

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5.1 Conclusion

To be conclude, the objectives of this study were achieved. First of all, the main objective of this study was to determine the efficacy of different forms of Aloe vera extracts with MIC. The results for MIC were being obtained. In addition, the anti-fungus and anti-bacteria efficiency of Aloe vera extracts were evaluated. The gel extract showed the best result in both inhibition zone of *C. orbiculare* and *B. subtilis* respectively. The second best result was the mixed extract and the leaf extract was the weakest in both inhibition of growth of both fungus and bacteria. This proved that the Aloe vera gel was reportedly contained the enzymes, vitamins and etc. that have the ability of anti-viral and antifungal. The leaf of the Aloe vera contained the same composition of such active compounds but the concentration was far lesser than the inner gel contained.

Other than that, this study also proved that the *C. orbiculare* was the fungus that responsible for the cause of anthracnose disease to the cucurbit plants such as cucumber. The pure colony of *C. orbiculare* fungus was successfully isolated from infected cucumber fruits. The fungus was observed in microscope and the result was similar with the research made.

5.2 Recommendation

From the study that had been done, there were some improvements that can be carried out in order to increase the accuracy of the result and improve the experiment. The objectives of this study was achieved but the results were not clear enough to show the consistency. Therefore, the improvements can be done to the study are listed as below.

1. The Aloe vera leaves can be extract by using a laboratory roll processor or a machine extractor that designed to separate the liquid fraction which is the inner gel of the leaf as used in the commercial process. The machine make sure the separation process of inner gel can be totally separated and thus improving the results accuracy.

2. The Aloe vera plant itself may have its own disease or infection that the problem of microbial resistance that affect the natural antimicrobial compounds. The phytochemical composition of Aloe vera plant should be carried out by professionals or plant experts to make sure the plant is free of infection and prevent any contamination during the experiment.

3. Another species of fungus, such as *Colletotrichum Capsici* from chili anthracnose disease should to be used as a comparison with *C. orbiculare*, fungus from cucumber anthracnose disease to show a better comparison of efficacy in the inhibition growth of fungus among the three type of extracts thus the antifungal properties of Aloe vera plant.

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5.3 Commercialization

The emergence of natural-based products which include Aloe vera is a success story in the world recently. The topical use of Aloe vera plant in cosmetics and skin care products has been emphasized due to the effective moisturizing and wound-healing effects of Aloe vera gel. However, the leaves are being dumped since the inner gel is the part being processed. This study proved the Aloe vera leaf have the same active

compounds but in a less concentration. The leaves can be processed in the form of health juices and supplements that bring the same benefits as the gel. Fungicide in agricultural sector can also be utilized that antifungal and anti-bacteria properties of Aloe vera plant is effective against the plant disease. Therefore, this study helped increasing the value of Aloe vera plant though success in this segment will be a breakthrough.

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