

V. CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusions

Based on the results of the conducted research, the following conclusions are obtained:

1. The *Streptomyces* sp. isolate from the rhizosphere of the mangrove *Avicennia marina* is effective in inhibiting the hyphal growth of *Sclerotium rolfsii* by up to 52.22%.
2. Differences in soaking duration have a significant effect on inhibiting southern blight disease and promoting plant growth; the longest soaking duration of 45 minutes is capable of inhibiting disease intensity by up to 100% and increasing vegetative growth by 51.92% to 115.80% compared to the untreated plants of the chili pepper variety Dewata 43 F1.

5.2. Recommendations

Further field-scale trials are required to comprehensively determine the antagonistic activity and secondary metabolites produced by the mangrove rhizosphere-derived *Streptomyces* sp. in suppressing the growth of the fungus *Sclerotium rolfsii* under natural and more complex environmental conditions. Additionally, extended antagonism testing against other pathogens or on different host plants is necessary to observe the responses generated in each interaction and to evaluate the consistency of the isolate's effectiveness as a biological control agent.