

CHAPTER V. CONCLUSIONS AND SUGGESTIONS

A. Conclusion

The three entomopathogenic fungi, *Trichoderma asperellum*, *Beauveria bassiana*, and *Metarhizium anisopliae*, possess the potential to control *Aphis gossypii* attacking red chili peppers. They function as agents for controlling *A. gossypii* and promoting the growth of chili plants (*Capsicum annuum*). All fungi caused over 90% aphid mortality within 7 - 10 days at concentrations of 10^8 - 10^{10} conidia/mL. The concentration of fungi spores at 10^8 was the best. *T. asperellum* achieved the shortest lethal time ($LT_{50} = 1.30$ days) and the strongest suppression of aphid reproduction at 10^{10} conidia/mL. At a concentration of 10^8 conidia/mL, all fungi achieved more than 90% mortality in 10 days. Fungal inoculation also enhanced chili plant physiology. Treated plants exhibited significant increases in plant height (55.4 - 56.2 cm) and leaf number (111 - 132). Chlorophyll content rose from 6.69 to 8.22 - 8.29 mg/g FW. Salicylic acid in plant leaves increased around 4.78-5.46 $\mu\text{g/g}$ FW, indicating enhanced defense responses. *T. asperellum* induced the highest Salicylic acid accumulation.

B. Suggestions

Future studies should confirm these results under field conditions and various chili cultivars. Optimizing formulation and application is vital for better efficacy. *T. asperellum* should be prioritized for bio-inoculant development. Further studies should assess molecular, environmental, and economic aspects to ensure sustainable pest management.