

CONCLUSION

This study shows that protease inhibitor that derived from *Senna surattensis* leaves have a wide potential to be explore in many field especially in producing insecticide. This is due to the fact that Serine proteinase inhibitors is thought to have phytochemical defenses against herbivorous insects (Broadway 1995) apart from its other usage in other filed; biological functions, such as blood coagulation, platelet aggregation and anti-carcinogenesis (Chaudhary *et al.*, 2008).

The molecular weight of obtained for *Senna surattensis* leaves were calculated and was determined to be 27.93 kDa while the molecular weight of *Mimosa diplotricha* fruit were estimated as to be 29.17 kDa (Table 7 in Appendix 9). Both plants have the potential serine protease inhibitor that needs to be explored more. The K_i value of *Senna surattensis* leaves determined is 8.89×10^{-5} mM with the mode of activity determined as competitive inhibitor.

Even though *Senna surattensis* leaves showed stability at a narrow range of temperature, which is only until 60 °C, but it is still should be given a fair chance to be studied even more because the efficacy of inhibitor is not only dependent on the temperature it react also dependent on the compatibility of the plant protease inhibitor reactive site and the substrate binding site in the target organism (Broadway 1995).

Current literature review only support the general hypothesis of the serine proteinase inhibitors ability in protecting plants against herbivorous insects (Broadway 1995). Thus, future research should also include the adverse effect of protease inhibitor usage

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and on compatibility of the protease inhibitor reactive site with other target binding site to produce the most effective insecticide toward wide range of insects.