

## CHAPTER VI

### CONCLUSIONS AND RECOMMENDATION

#### CONCLUSIONS

1. The dichloromethane extract was toxic to Nile tilapia *O. niloticus* but the water extract from *D. trifoliata* leaves was not effected test fish.
2. The dichloromethane extract is acutely toxic to juvenile Nile tilapia *O. niloticus* with 24-h LC<sub>50</sub> of 7.66945, 48-h LC<sub>50</sub> of 2.25345, 72-h LC<sub>50</sub> of 2.09769, 96-h LC<sub>50</sub> of 1.98772 mg/L, respectively and NOEC is 1.5 mg/L.
3. The histopathological and ultrastructural alteration showed the cellular injury which including hydropic swelling, vacuolation and fat droplets accumulation, hemorrhagic inflammation, macrophage invasion, necrosis, fibrosis, proliferation of RER, lysosome and relative shift from RER to SER on the fish liver in response to the *D. trifoliata* leaves extract toxicity.
4. The *D. trifoliata* leaves extract reduced the growth (length and weight) of *O. niloticus* in the long-term exposure, the growth of treatment group in the first and the second month were lower than two of control groups significant, the significant differences ( $p \leq 0.05$ ) were found from the third month to the fifth month of experiment.
5. The relative liver weight index of treatment group was higher than standrard value and control groups and significant difference was found in 4th month.
6. The cellular injury depended on the duration of exposure.

## RECOMMENDATION

1. The pure bioactive compounds from *D. trifoliata* extract will give the exact point of study on their mode of action and how to apply them as pesticide.
2. It should be performed the field study on toxicity of *D. trifoliata* extract concurrent with laboratory study.
3. Acute toxicity test of pure active compounds should be performed on the early life stage of *O. niloticus* for providing more toxic sensitivity.
4. A full life cycle study on toxicity should be performed to provide more informations ; reproductive cycle, malformation, mutation.