

6. SUMMARY AND CONCLUSION

In the present study was investigated the bioefficacy of ten selected plants at different solvent extracts against the stored product pest *Tribolium castaneum* and to identify the efficacy of promising plant extracts against the polyphagous field pest *Spodoptera litura*.

The plants were sequentially extracted with the increasing polarity of the organic solvents such as hexane, ethyl acetate and ethanol by soxhlet method. The crude extracts were condensed with the help of rotary vacuum evaporator.

The collected crude extracts were tested for their ovicidal activity, among the ten plants the *Cardiospermum halicacobum*, *Coriandrum sativum*, *Ocimum sanctum*, *Pongamia glabra* had more activity in ethanol extract at 200µg/ml concentration.

Oviposition deterrence activity was higher in ethanol extract of *Coriandrum sativum* at 200µg/ml and highest repellency was noted in *Coriandrum sativum* at ethanol and ethyl acetate extracts at 100µg/ml concentration and the 100% was observed in 200µg/ml concentration against *T. castaneum*.

The Highest insecticidal activity was noted in ethanol extracts of *O.sanctum* 96.90, in ethyl acetate extract of *Solanum xanthocarpum* 97.15 and 99.36 in hexane extract of *Solanum xanthocarpum* at 100µg/ml concentration.

The promising plant and its solvent extracts *Ocimum sanctum* were identified. The selected crude extracts were recorded the highest ovicidal, oviposition, deterrent, pupicidal and antifeedant activity in the ethanol extract at 100µg/ml. in *Spodoptera litura*.

The active fraction from the promising extract was isolated using TLC and Column Chromatography.

The promising ethanol extract of *O. sanctum* was subjected to Gas Chromatography coupled with Mass Spectroscopy (GC-MS) analysis and the spectral analysis of the clearly proved that the existence of various phytochemical compounds which includes eugenol, ursolic acid, carvacrol, linolal, caryophyllene, estragol, apigenine and cirsimaritin as its major constituents.

CONCLUSION

In the present findings, it is concluded that *Ocimum sanctum* was recorded the best insecticidal activity in the *Tribolium castaneum* and *Spodoptera litura*. The promising plant extract of *Ocimum sanctum* may be due to presence of several active phytochemical components like eugenol, ursolic acid, carvacrol, linolal, caryophyllene, estragol, apigenin and, cirsimartin renders protection against the insecticidal activity. So, we recommended to use the *O. sanctum* for insecticidal activity and leads to improve the health status. In recent years, natural insecticides have been developed due to the global concern about pollution through the use of synthetic insecticides. Crude essential oil and some of their constituents have been identified as a source of natural pesticides.

In conclusion, the active principles were identified from the promising extract will definitely play a major role in the near future as alternatives to the synthetic pesticides since, phytopesticides are always environmentally safer and almost non-toxic to non target organisms in general and to mammals in particular. So this could be employed in the Integrated Pest Management (IPM) programme as an important component in the green future.