Abstract

Medicinal plants contain natural chemicals which are acceptable to animal as well human systems; so called as ‘Chemical Goldmines’. For medicinal purpose humans have been dependent on medicinal plants since the beginning of civilization. This treasure can be explored for insect pest/vector management. Since these plants have properties such as Antimicrobial, Antibacterial, Antiparasitic, laxative, insect relent/attractant, Insect growth regulating etc. due to some chemicals called as ‘Allelochemics’ which plays significant role in defense against insects.

In present endeavor four medicinal plants wiz. *Withania somnifera* (Ashwagandha), *Curcuma longa* (Turmeric), *Zingiber officinalis* (Ginger), *Pelargonium graveolens* (geranium) were assessed for bioactivities against couple of insect pest/vector which are well to cause economic as well as health problems to human beings and are *Musca domestica* L. (House fly), *Phthorimaea operculella* Zeller (Potato tuber moth). House fly is cosmopolitan, vector causing not only nuisance but also transmits disease causing organisms. While the other one, Potato tuber moth causes serious damage to economically important crop Potato.

In case of house fly *P. graveolens* showed promise in both larvicidal (161.72 µg/cm²) and Adulticidal activity (106.66 µg/cm²). It also decreased the carbohydrate content by 14.09 mg/gm body weight; while 0.39 µmole/ml/min decease was observed in case of Invertase activity. *W. somnifera* also deserves the special mention as it has delayed the development by 11.3 days. It also showed 74% and 55 % repellency and oviposition deterrence respectively.

Persual of results in case of potato tuber moth reveals that *Z. officinalis* showed promise in toxicity assays (Larvicidal Activity: 116.452 µg/cm², Adulticidal activity: 201.127 µg/cm²). *W. somnifera* also exhibited promising IGR activity. *C. longa* and *Z. officinalis* found effective in Repellent assay and Oviposition deterrence assay.
These oils were also tested for their toxic effects on soil bacteria. Results conclude that there is no significant toxicity was caused by these selected medicinal plants. It leads to conclusion that these plants can be further explored for the development of ecofriendly pesticides for insect pest/vector management. This will solve the problems created by conventional synthetic pesticides such as High persistence, Pest Resurgence, Pest resistance, effect on non-target organisms as well as on human beings causing cancer.