

Abstract

The present investigation aimed to throw light the effect of methylene chloride and normal hexane extracts of *Azadirachta indica*, *Citrullus colocynthis*, *Ammi majus* and *Mentha microphylla* on the 4th larval instar of the cotton leaf worm, *Spodoptera littoralis* and 2nd stage of desert locust, *Schistocerca gregaria* under laboratory conditions. The results showed that the methylene chloride extract of *Azadirachta indica*, *Citrullus colocynthis* are the most potent extracts against both pests. Consequently, marked reduction was observed in the weights and durations of the larvae of *Spodoptera littoralis* and *Schistocerca gregaria* nymph. In addition, exposing to the tested extracts led to causing deformations in all the studied stages of both pests.

The present study was also extended to conduct the insecticidal effect of the most potent extracts *Azadirachta indica* and *Citrullus colocynthis* methylene chloride extract post formulation on the two pests. The formulated material appears to induce more toxological and biological effects. Meanwhile, the recorded data showed more prolongation in the life cycle, increased in the rate of deformation and highly recognized less body weight of both pests. Moreover, the intrinsic effect of the prolonged exposure to the formulated extracts at sublethal doses was also taken into consideration. Marked biochemical changes however, being recognized in both pests as marked decreases in total lipids, total protein and glucose contents. The activity of both ALAT and ASAT are also being highly affected.

The tested dose levels also showed highly histopathological disturbances in the midgut and body wall cells of both pests. Among the most recorded observations are vacuolation, destruction of the cells, destruction of cell boundary and cuticular separation from the adjacent epidermal cells.

KEY WORDS: *Spodoptera littoralis*- *Schistocerca gregaria*- *Azadirachta indica*- *Citrullus colocynthis*- *Ammi majus*- *Mentha microphylla*.

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LIST OF ABBREVIATION

AchE	:Acetylcholine eastrase
ACP	:Acidic phosphatase
ALAT	:Alanine amino-transferase
AlkP	:Alkaline phosphatase
ASAT	:Aspartate amino-transferase
Bb	: Brush border
Cl	:cuticular layer
dcl	:detachment cuticular lamella
dec	:detachment epithelial layer
Ec	:Epithelial cells
E.C.	: Emulsifiable concentrate
Fa	:fat accumulation
gc	:granulated cytoplasm
V	:vacuole