SUMMARY

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These experiments were carried out in the laboratory of agriculture station of Arab company for pharmaceutical and medicinal plants to evaluate pest management agents in certain different plant extracts against two lepidopterous cotton insect pests *Spodoptera littoralis* and *Agrotis ipsilon.*

These experiments were on the fourth instar of two insects because it was very dangerous for its feeding on plants.

The plant species were:

1-*Atropa belladonna* (belladonna)

2-*Cymbopogon proximus* (halfa bar)

3-*Datura stramoniunm* (thorn apple)

4-*Hyoscyamus maticus* (Egyptian henbane)

5-*Urginea maritime* (squill)

The sample of the plants were prepared in dry powder then extracted with three solvents (Petroleum/ether, acetone and ethanol 70%).

1-The previous data showed that ethanol extracts of Egyptian henbane, thorn apple and. belladonna were more effective and possess more antifeeding activity to the 4^{th} larval instar of the cotton leafworm and the black cutworm .

The highest antifeeding activity were 93.94, 93.11 and 92.77 at 10% of ethanol extracts for Egyptian henbane, thorn apple and. belladonna successively. Then the antifeeding activity were 90.88, 89.66 and 87.75 at 10% for

Egyptian henbane of acetone extract, halfa bar of ethanol extract and squill of acetone extract successively.While the lowest effect was 45.65 and 47.93 % at 1.25 % for squill of petroleum/ether and acetone extracts successively.

2-The results appeared the highest antifeeding activity to 4th larval instar of the black cutworm were 91.04, 90.05 and 88.29 at 10 % ethanol plant extracts for belladonna, thorn apple and squill successively after that 88.29 and 87.24 at 10 % for halfa bar petroleum/ether extract and Egyptian henbane acetone extract successively while the lowest effect were 48.60, 48.95 and 49.81 at 1.25 % for squill petroleum/ether, acetone and ethanol extracts successively.

3- The previous data showed that thorn apple, Egyptian henbane, *halfa bar* and squill were more mortality percentage to 4th larval instar of the cotton leafworm. The highest mortality recorded were 86.2 % at 10 % after one week for thorn apple and Egyptian henbane ethanol extracts to 4th larval instar of the cotton leafworm and the same mortality for belladonna at 10 % of acetone extract.

4-The high mortality percentage of belladonna ,eygptian henbane and squill ethanol extracts were more mortality to 4th larval instar of the black cutworm. The prefered extract of halfa bar was petroleum/ether plant extract in mortality.

The highest mortality recorded were 86.2 % at 10 % after one week for thorn apple and belladonna ethanol extracts to 4th larval instar of the black cutworm.

5-LC_{50} values of investigated plant extracts to 4th instar larval of the cotton leafworm The smallest values for LC_{50} thorn

apple extract with ethanol was the most effective one recording the lowest value of LC_{50} (0.876) after 3 days and (0.954) after one week . On the other hand the least effective extract against the cotton leafworm based on with LC_{50} values was squill extract (6.938) after 3 days.

6-While LC_{50} values of investigated plant extracts to 4th instar larval of the black cutworm. The maximum toxicity was noticed with ethanol extract of belladonna LC_{50} (1.111) after one week and acetone extract LC_{50} (1.124) after one week from the same plant. On the other hand the minimum toxicity was noticed with petroleum/ether extract of squill recorded 7.571 after 3 days and 4.43 after one week.

From the above study which give a similar results for three plants related to solanaceae family. These plants were thorn apple, belladonna and Egyptian henbane According to their contents of alkaloids mentioned in the references we select thorn apple and belladonna for the extraction of their alkaloids. The extract of these two plants were tested on the two insects selected for our study. They gave us a good result.

7-The highest antifeedant activity was 81.51 at 1000 ppm for alkaloid extraction from thorn apple to 4th instar larval of the cotton leafworm while the highest antifeedant activity was 82.78 at the same concentration for alkaloid extracted from belladonna to the black cutworm .On the other hand the lowest antifeedant activity were 49.68 and 52.23 at 125 ppm for alkaloid of belladonna to 4th instar larval of the black cutworm and the cotton leafworm successively. The

results indicated that the alkaloid of thorn apple and belladonna gave the same mortality percentage 68.97 % at 1000 ppm after one week from the treatment 4^{th} instar larval of the cotton leafworm. while the lowest mortality was 31.03 % at 125 ppm for alkaloid of belladonna after one week .

8-Toxicity of the alkaloid extracted from thorn apple to 4^{th} instar larval of the black cutworm was 79.31 % mortality percentage at 1000 ppm after one week while the lowest mortality 27.59 % at 125 ppm after one week too for the same plant.

9-Qualitative evaluation of the extracted alkaloids from thorn apple and belladonna.

Two methods were applied:

I-TLC methods:

According to previous results of TLC applications which indicated that the alkaloid in the extract of thorn apple and in the extract of belladonna was the same which was hyoscine from the observation of the same RF value obtained from the TLC chromatogram.

II- HPLC method:

It was stated that the alkaloid in the extracts of thorn apple and belladonna was the same and nearly identical with hyoscine as the control. The retention time in the chromatogram for thorn apple, belladonna and hyoscine (standard) were the same.