Effect Of Aquatic Extracts Of Anethumgraveolens In The Values Of Enzymatic Concentrations And Total Protein Concentration Of The Southern Cowpea Beetle Disease Callosobruchus Maculates

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Abstract: The study was carried out in the Laboratory of Insect Environment for Graduate Studies / biology Science Department, Faculty of Science for women / Babylon University and Technical College / Musayyib / Al-Furat Al-Awsat Technical University for the period from 1/7/2017 to 15/3/2019 for the purpose of knowing the effect of plant Anethumgraveolens extracts (1, 3 and 5%) in some aspects of the life of the cowella beetle Callosobruchus maculates under laboratory conditions. The results of the study showed that the boiling and cold water extract of the plant had an almost equal effect on the different life performance parameters of the insect. A positive relationship was found and the percentage of the eggs mortality was increased by increasing the concentrations. When treated with boiling and cold water extract in each plant, And (54.8%), respectively, at 5% concentration compared with (12.6%) and (12.4%) respectively in the control treatment. The larvae in cowpea seed powder were treated as a result of treatment with boiling water and cold water extract in both the leaf plant (90.0%) and (80.0%) respectively at 5% concentration compared with 10% in control treatment. The results of the study indicated that the addition of boiling and cold water extracts to the 5% concentration of the plant had an effect on the GOT, GPT, Alkaliune phosphate and total protein concentration. The extracts resulted in a difference in values compared with control coefficients for both larvae extract and chick larvae separately.

Index Terms: Anethumgraveolens, Callosobruchus maculates, GOT, GPT, Alkaliune phosphate.

1 INTRODUCTION

The Leguminosae family of Angiosperms is a flowering plant with 917 species and 63525 species around the world (The plantlist, 2010). The Vignaunguicalata is a family of legumes cultivated in Western, Central and Eastern Asia (Coulibaly, et al., 2009). Its seeds contain 24.8% protein, 63.6% carbohydrate, 1.9% fat and 6.3% fiber as well as phosphorus, calcium and iron (Shaw, 2007) .The cowpea seeds are stored in various insects, causing damage to them. The most important of these insects is the C. colulata insect (Ahmadi and the priest, 1987). The southern cowpea beetle can destroy 100% whole crop in 3-6 months under storage conditions (Vareala, 2012). The insect has a wide range of legumes, such as beans, soybeans, chickpeas, lentils and basilias, as well as its main family (cowpea seeds). The seeds of these plants In the intensity of the attraction of the insect as they can be divided into severe, moderate and situational The attraction of insects (Hameed, Younis 2013). In view of the above and the economic importance of the seeds of cowpea when stored in stores and exposure to insects, and avoid the use of chemical pesticides manufactured in the fight against the fact that it is contaminated to the environment and has a risk to the labs.

The purpose of the following study on the use of effective natural products extracted from the plant, including the use of cold water and boiled water of the plant and testing its effectiveness in the life performance of the insect as followings:

1- Effect of cold and boiling water extract of the plant in immature roles (egg, larval role).
2- Study of the effect of water extracts of cactus plants in some enzymes (GOT, GPT, Al kaliune Phosphate) and total protein concentration.

2 MATERIALS AND METHODS OF WORK

2-1: Collecting and breeding insect of South cowpea beetle C. Laboratory macules. Seeds of healthy red lobsters were obtained from local markets in May 2017. They were placed in a 20 ° C freezer for four days to ensure that they were free from insect and fungal infections for the purpose of breeding the insect. The colony of the southern cowpea beetle was obtained. The insect colony was maintained by placing part of the infected cowpea with healthy cowpea in glass bottles (27 cm in diameter and 9 cm in diameter) and covered with a cover of Cloth the muffler and tie the cover with elastic strap to ensure no exit The incubators were incubated at 30 ° C, humidity 70 ± 5% and complete darkness (Mahmoud 1989). The same conditions were tested, and the colony was continuously renewed to ensure its sustainability after each generation

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2-2: Collection of plant samples under study

The plant samples were collected from the local markets and washed for the purpose of removing impurities, then dried at room temperature while stirring continuously to prevent rotting, then grinding with an electric mill and placing the vegetable powder in glass containers (27 cm) in diameter (9) Cm and sealed tightly and kept in the refrigerator until use.

2-3: Preparation of water extracts of A. graveolens

The cold and boiling water extract of the Al-Mansour plant (1995) and modified from Harborne (1973), with some

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modifications, was obtained by increasing the recovery time to 24 hours. Take 10 grams of powdered plant and put in a 500 mL glass flask containing 200 ml of cool distilled water. Mix the plant material with the magnetic mixer for 15 minutes and leave the solution for 24 hours (for better extraction) after covering it (to avoid impurities) Apply the solution with a soft cloth and take the leachate. The foreign materials were then deposited using Centrifuge at 3000 cycles / minute for 10 minutes. The filter was concentrated in rotary evaporator at 40 45 ° C for the purpose of drying dry, which was kept in small sealed glass bottles after recording its weight. It was empty and stored in the refrigerator until use. The previous steps were prepared in the preparation of boiling water extract Replace cold distilled water with boiling water. The extraction process was repeated several times for the purpose of obtaining sufficient dry dregs for testing. For the purpose of estimating the biological efficacy of the cold and boiled water extract, take 5 g dry dry for each extract and solute in 100 ml of distilled water. The concentration of the solution is (5%). Concentrate (1, 3 and 5% In addition to the treatment of the control was distilled water only.

3 Effect of water extracts of A. gravelolens in the cumulative loss of immature roles.

A number of infected seeds containing 50 fresh eggs were taken for each replicator with 3 replicates per concentration and placed in a 9 cm diameter plastic petri dish. The seeds infected with the water extracts were then sprayed separately by a small sprinkler spray (after ensuring that they were completely free of liquid residue). The eggs were incubated at 30 ° C, humidity 70 ± 5% and complete darkness (Mahmoud 1989). The eggs were followed daily until they were hatched. The percentage of the eggs and the larvae were recorded separately and after This was followed up to the stage of the makamal where the number of emerging mullets (males and females).

4 Effect of water extracts of A. gravelolens in the larval role and mixed in cowpea seed powder

For the purpose of determining the effect of the water extracts of the plant separately in the cumulative loss (by observing the immature roles and their clarity in the experiment), cowpea powder was prepared and placed in the Petri dishes at a rate of 4 g for each dish. The larvae were taken with the first larvae and the age (1 2) days obtained after hatching the eggs directly by dissecting the infected seeds and container on the larvae required for the experiment and placed in the dishes containing the cowpea powder by three replicates for each concentration in addition to the treatment of control were treated larvae and cowpea powder with water extracts separately and concentrations (1, 3 and 5%) in addition to the combination His control through spraying by a small spray used to spray liquids Cleaning Units (after making sure that they are free completely from the liquid residue) concentration (1, 3 and 5%) and put the dishes in the incubator at a temperature 30 ± m and humidity of 70 ± 5% and full darkness.And was followed up to the full stage and recorded the percentage of loss in the larval role. (Mahmoud 1989).

5 Preparation of the insect extract

For the purpose of studying the enzymes, the raw extract of the S. coli bean beetle was obtained from the treatment with cold and boiled water extract at a concentration of 5% with 1 g of insects and washed with Phosphate buffer saline (PBS) (pH7) Relating to it, I repeated this process 2 3 times .The amalgams were crushed in 5 ml of PBS with pH 7.5 for the basal phosphatase using an electrical homogenizer and using an ice bath to prevent the warming of the homogenous layer by placing pieces of ice in the water bath by us and then destroying the suspended cells Using the ultrasonic ultrasonic device at a frequency of 16000 pulses / sec for 2 seconds with cooling, repeat the process 3 4 times with intervals of 3 to 5 minutes, put the resulting suspension in the centrifuge at 1000 ppm for 10 minutes and then take the leachate and precipitate GOT, GPT and Alkaliune phosphate were studied Total protein concentration in accordance with the instructions of the commercial kit manufacturer (KIT) and followed the same steps in preparing the raw extract of the cowpea beetle larvae C. maculates.

6 Results and discussion

Effect of the concentration of cold and boiling water extract of A. gravelolens in the percentage of eggs lost from the cowpea beetle C. maculates. The table shows the effect of cold and boiling water extract concentrations of A. gravelolens in the percentage of the eggs of the cowpea beetle C. maculates. For the type of extract, the highest mortality rate was 40.78% in the cold water extract compared with 38.9% in the extract Boiling water. The results of the statistical analysis showed significant differences in the results obtained .The effect of the concentration factor was observed. The effect of the concentration factor was observed directly with the increase of the eggs' mortality rate. The highest mortality rate was 57.8% at a concentration of 5% compared to 23.1% in the control treatment. The results of the statistical analysis were significant differences through the results obtained .The effect of the interaction between the concentration and the type of extract, with the highest percentage of loss in eggs in the boiling and cold water extract of the two plants (60.2% and 54.8%), respectively, compared with 12.6% and 12.4% . The results of the statistical analysis were significant differences through the results obtained.

Concentration Extract (%)	Percentage of egg mortality The dill		
	Boiled aqueous extract	Cold aqueous extract	Concentration rate
5	60.2	54.8	57.8
3	38.4	42.2	38.6
1	21.0	20.1	23.1
Control	12.6	12.4	12.4
Type of extract		Boiled aqueous extract	Cold aqueous extract
		38.9	40.78

The results of this study are consistent with the study carried out by Khalaf (2013). The extract of alkholi for the dandelion plant gave the highest effect. The percentage of egg hatch percentage was 13.33% while 20.0% and 16.66% for datura and jasmine respectively. The alkaloic extract of the three kidneys showed a high mortality rate compared to zero for the control of the control, ranging from 75% to 90% and then to 95% for concentrations 3, 5 and 7 Respectively, and the results were positive not to hatch eggs of the cowpea beetle

insect When using the oil extract of Melia azedarch L. When treated with concentrations 5, 15 and 25% (al-Bayati, 2007). Effect of cold and boiled water extract concentration on A. gravelolens. In the larval role of the cowpea beetle beetle C. maculates on cowpea seed powder. The effect of cold and boiled water extract on A. graveolens and C. annum was found in C. larvae larvaelarvae. C. maculates The highest larval larval percentage was 69.8% in boiling water extract compared to 64.1% in cold water extract. The results of the statistical analysis did not show significant differences in the results obtained .The effect of the concentration factor was observed. The effect of the concentration factor was observed directly with the increase of the insect larvae mortality rate and the highest mortality rate was 88.2% at 5% compared to 10.0% in the control treatment. The results of the statistical analysis showed no significant differences in the results obtained .The effect of the interaction between the concentration and the type of extract was the highest in the larval role in the boiling and cold water extract of the plants and chili (90.0% and 80.0% respectively) compared to 10.0% and 10.0% respectively. In the control transaction. The results of the statistical analysis were significant differences through the results obtained.

Effect of the concentration of cold and boiling water extract of A. graveolens in the larval role of the cowpea beetle C. maculates

Concentration Extract (%)	Percentage of larva mortality The dill		
	Boiled aqueous extract	Cold aqueous extract	Concentration rate
5	90.0	80.0	88.2
3	60.0	63.0	64.7
1	50.0	43.0	48.0
Control	10.0	10.0	10.0
Type of extract		Boiled aqueous extract	Cold aqueous extract
		69.8	64.1

These results are consistent with the results of the study conducted by Al-Rubaie (2013). The results of the study showed that the cumulative loss of the immature roles of the cowpea beetle bean grown in the cowpea bean powder with the extracts concentrations was greater than the cumulative loss of the seed, The results showed an increase in the percentage of dead larvae of the southern cowpea beetle with an increased concentration of the extract with 80% concentration at 25% and the lowest of 63.3% at the concentration of 5% and significant differences between them (Bayati, 2007). Effect of boiled and cold water extract of A. graveolens in the values of GOT, GPT, Alkaliune phosphate and total protein concentrations) of the larval role of S. cowulates from the treatment. Effect of boiled and cold water extract of A. graveolens in the values of GOT, GPT, Alkaliuneph and total protein concentration) for the larval role of S. cowulates from the treatment and 5% concentration of extracts used. The differences between the values of enzyme concentrations and total protein concentration between the extracts used in the study compared to the control treatment . The highest value of the GPT (ALT) enzyme to filter R2 (cold water extract) was 60 U / L compared to the control treatment of 44 U / L The value of the enzyme GOT (AST) for the filtration of the treatments where the treatment of R (shampoo) was more influential as it was 7 U \ L compared to control treatment of 44 U \ L, and the deposit of the transaction was the treatment (rb) 4 U \ L compared to the control treatment of 51 U / L .As for the total protein concentration, the treatment of R1 (boiling water extract of the cement) was more effective at 1.6 g / dl compared to the control treatment of 1.9 g / dl in leachate treatments. The precipitation coefficients were treated with r (cold water extract) with a mean of 4.3 g / dl compared to the control treatment of 2.8 g / dl.

Effect of boiled and cold water extract of A. graveolens in the values of GOT, GPT, Alkaliune phosphate and total protein concentrations) of the larval role of S. cowulates from the treatment.

Treat-ment Name	ALT) (GPT		AST) (GOT		ALkaliune ph.		Prot-ein	Prot-ein
	U/ L	*1= U/L	U/ L	*1= U/L	U/ L	/7.1=K AU/dl	g/l	10= g/dl
R1	58	58	41	41	25	3.5	16	1.6
R	60	60	60	60	45	6.3	31	3.1
R2	60	60	29	29	14	1.9	22	2.2
R	18	18	47	47	16	2.2	43	4.3
Controll eachate	44	44	44	44	15	2.1	19	1.9
Control Deposit	60	60	51	51	46	6.4	28	2.8

A boiling water extract for the cell = R1
Cold water extract for leachate = R2
leachate = R
Deposit = r

The results of the study showed that the effect of plant extracts (oxal, eucalyptus and figs), especially the extract of leaves of the enzyme in enzymes, was higher than in the control group. The effect of these extracts on the effectiveness of enzymes is due to cell breakdown due to exposure and release This enzyme is explained (Melissa, 2002). Effect of boiled and cold water extract of A. graveolens in GUT, GPT, Alkaliune phosphate and total protein concentrations of C. colulates from the treatment Effect of boiled and cold water extract of A. graveolens in GUT, GPT, Alkaliune phosphate and total protein concentrations of C. maculate beetles from the treatment and 5% concentration of extracts used. Between the values of enzyme concentrations and total protein concentration between the extracts used in the study compared to the control treatment. The highest value of the GPT (ALT) enzyme for the treatment of R2 (cold water extract) was 52 U / L compared with the control treatment of 10 U/L. The GOT (AST) efficiency was the highest value of the treatments (R2 cold water extract for 60 U/L compared to the control treatment of 5 U/L.

Effect of boiled and cold water extract of A. graveolens in the values of enzyme concentrations (GOT, GPT, Alkaliune phosphate and total protein concentration) of the cowpea beetle beetle C. maculates

Treat-ment Name	(ALT) GPT		AST) (GOT		ALkaliune ph.		Protein	
	u/l	*1=u/l	u/l	*1=u/l	u/l	/7.1=kau/dl	g/l	10=g/dl
R1	4	4	21	21	18	2.5	11	1.1
R	20	20	6	6	41	5.7	10	1
R2	52	52	60	60	18	2.5	10	1
R	34	34	27	27	4	0.5	9	0.9
Controll eachate	10	10	5	5	29	4	9	0.9
Control Deposit	15	15	5	5	33	4.6	10	1

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