



Comparative study of the impact of flowers and fruit extract of *Datura metel* and two types of pesticides against of red chicken mites *Dermanyssus gallinae* (Acari: Dermanyssidae)

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Abstract : The effectiveness of flowers and fruits of plant extract *Datura metel* and two types of pesticides, chemical pesticide and herbicide Cypermethrine Deltamethrin were tested against the red chicken mites *Dermanyssus gallinae*. Results of the study have shown that the alcoholic extract of the flowers and fruits of plant *Datura metel* has the effect of low numbers mites rate since the first day of treatment, in the concentrations (5.10 20 mg / ml.), and found increased loss ratio with increasing concentration of extract, and the flowers extract mentioned was more influential than fruit extract concentrations mentioned, and the effectiveness of the alcoholic extract of the flowers and fruits approached effectiveness of the effect of insecticides mentioned.

Keywords: *Datura metel*, red chicken mites *Dermanyssus gallinae*.

1-Introduction

It is the mites from external parasites that infect different species of birds and is a genus *Dermanyssus gallinae* types of mites that parasitize chickens, causing a disease called red pox or red Chicken pox¹. Causing many of the symptoms, such as a reduction in the growth and lack of egg production, is also a vector for other diseases such as the virus that causes chicken pox.² and other diseases. Many methods have been used in the fight against these parasites, including the use of pesticides such as pesticides organophosphorus³, but because of the impact of these pesticides on the environment and deterring studies have tended to use plant extracts as alternatives to pesticides for being not to cause any effects of cumulative when used for a long time⁴. Among the plants used in the fight against the plant *Datura*, it was found by mani&chitra⁵ to extract the *Datura stramonium* has an impact on juvenile nematodes. *Meloidogyne incogita* outside the body of the organism. Alamen & Alalak also noted⁶ that the plant leaves extract *D. stramonium* an impact on the life *Porcellio* as the reason mortality in adult stages. He also added Moosavi⁷ that the aqueous extract of the leaves and seeds of *Datura metel* against parasitic worms *Meloidogyne javanica* causing high mortality to have.

2-Materials and methods

2-1- Collect the plant *Datura metel*

The plant was collected from one of the farms in the town of al-Qasim city. Dried flowers and fruits of plants were brought to the laboratory and milled using mediated electric mill and put powder in cloth bags and deposited in the refrigerator. Person at plant by a .m.d. Suhaila Hussein / College of Education / University of Qadisiyah, as *D. metel* of the family Solanaceae, either adult stages of the mites insect was obtained, diagnosis was done by veterinary clinics in the city of Diwaniyah.

2-2 Preparation of extract

Chosen as Ethyl alcohol as a polar solvent for the preparation of the extract according to the method of Ladd et al⁽⁸⁾. Weigh 20 g of flowers and dry fruit powder and put in a continuous extraction device and added a 200 ml of ethanol, and as long as the extraction (24) hours at a temperature (40 m) were then extract concentration mediated by a rotary evaporator degree 45 m . Then the sample is dried. Three concentrations of the test, namely, (, 20.10 5) mg / ml of ethyl alcohol extract of the flowers and fruits of the plant either the control treatment the use of ethyl alcohol.

Preparation of pesticides2-3

As well as the preparation of a three concentrations (25.0, 5.0, 1) ml / liter of water for each of the insecticides 10% E.C cyper and Deltamethrin E.C 2.5% either control treatment Vtm use water.

2-4- The influence of alcohol ethyl extract of the fruits and flowers datura and chemical pesticides in the destruction of adult stages of a mites

It was taken (6) samples from the adult stages of the mites of each repeater and with three replicates for each concentration of the concentrations mentioned in paragraph (2-2) and distributed in Petri dishes and sprayed concentrations mentioned the incubator temperature (27 m) and recorded a loss ratios after 24, 48 and 72 hours.

Experiments designed according to the model of experiments with completely randomized design (CRD) and corrected percentages of mortality according Abbott Formula equation⁽⁹⁾ at the level of probability of 0.05

$$\frac{\text{The mortality rate in the sample} \% - \% \text{ The mortality rate in control}}{100 - \% \text{ The mortality rate in control}} \times 100$$

3-Results and discussion

Results shown indicate in the tables (1) and (2) that the alcoholic extract of the flowers and fruits of plant Aldathura has the effect of lower numbers dream rate since the first day of treatment, all the concentrations (5.10 (20 mg / ml, where increased loss ratio with increasing the concentration of extract., as well as the flower extract of the plant mentioned was more influential than the fruit extract and all the concentrations mentioned, that the results described above are consistent with many of the researchers in the effectiveness of plant extracts against adults mites of intruding on the chicken, it was found⁽¹⁰⁾ that garlic extract thyme him effective in the control of reducing the number of mites chicken red reaching perdition 92.05 percent and 89.4 percent, respectively, for each of the extracts, one day after the spraying. as well as in many vegetable oils derived test has been found that several plants such as *Coriander sativum* and *Sinapis alba* and *menthas* and *Capsium annum* and *Thymus vulgaris*⁽¹¹⁾ Use as Alioukalaptoz extract as an alternative to chemical pesticides against the dream¹²The results also show that the effect of plant extracts oncoming effectiveness of insecticides Alhacrien, and the insecticide Deltamethrin was more effective than the pesticide Cypermethrine in reducing the number of mites, as the mortality rate among the 50.2 range) -98%) after 24 hours of treatment and continued mortality rate to rise until it reached 100% after 72 hours of treatment. This is consistent with what he found Hassain,¹³ in the effectiveness of the pesticide Deltamethrin was more effective than the pesticide Cypermethrine in the fight against Tetranychusurticae. While another said a study by Nahar¹⁴ included the use of pesticide Malathion, Sulphur, Cypermethrine. Cypermethrine that pesticide was most effective in the fight against mites.

Table 1 The effect of flower and fruits extract of *datura metel* in the deaths of adults *Dermanyssus gallinae*

72 hour	48 hour	24 hour	Concentration ml	
50.5 %	35.1%	29.42%	5	Fruit extract
61.66%	38.77%	36.4%	10	
70.2 %	44.74%	40.00%	20	
%64.20	48.44%	37.0%	5	Flowers extract
75.21%	52.2 %	43.55%	10	
82.00 %	63.20%	42.70%	20	

Table 2 The effect of pesticide Deltamethrin and Cypermethrine in the deaths of adults *Dermanyssus gallinae*

Decimation Percentage of			Concentrations ml	Pesticide
72 hour	48 hour	24 hour		
90.23%	74.00%	58.66%	0.25	Cypermethrine
100%	92.56%	89.33%	0.5	
100%	96.00%	92.33%	1	
96.3%	79.60%	69.2%	0.25	Deltamethrin
100%	97.18%	90.55%	0.5	
100%	100%	98.00%	1	

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