Effect extract *Clerodendrum inerme* and *Eucalyptus camaldelulensis* against *Sitophilus oryzae*

Safaa Mohamed yaseen

Assist instructor

College of Science

Abstract

This study was conducted in the laboratory of Alhacrat- Faculty of Science, University of Misan, the present study aimed to identify the killer focus and effectiveness of repellents vegetarian *Clerodendrum inerme* and *Eucalyptus camaldelulensis* against *Sitophilus oryza**e*** and the focus used in the experiment are 0.0,0.0.5,0.1,0.2, it was calculating the ratio centennial to kill the insect after seven days of struggle, and with the same emphasis as the above-mentioned insect repellent effect 48 hours after the fight.

The results showed superiority of *Eucalyptus camaldelulensis* extract concentration of 0.2% with a high of murder in the superiority of *Eucalyptus camaldelulensis* extract concentration (0.2) g kill an average of 4,700 on the same plant *Clerodendrum inerme* and killed an average of 3.160 concentration. 4.667% The results also showed superiority of *Eucalyptus camaldelulensis* extract concentration of 0.2 g% 6.300% with an average expel insect *Sitophilus oryza**e*** to *Clerodendrum inerme* extract at the same average percentage expelled focus was.

Introduction

More of studies from modern pointed to the possibility of using plant extracts and plant essential oils as an alternative to chemical pesticides manufactured in combating many of the insects (Epidi, and Odili. 2008) has stated to the effect of larvae and adult insect *Sitophilus oryza**e*** is clearly a result of exposure to the smell of *Eucalyptus camaldelulensis* leaf extract is an insect *Sitophilus oryza**e*** from important insects economically because of the spread in the stores, particularly affect the quality of the grain, which afflict (Arbogast, 1991) I have used routine ways to combat the insect using chemical pesticides now these substances are highly toxic and low decomposition remain in the environment for a long time (Kriishna et al ,2003) Although the offer chemical protection pesticides grain and eliminate the

insects that affect them. But there it made problem because the appearance described as resistance to these pesticides severely limits their use against insects which described the resistance show as well as contaminating the water, soil and kills the piece to change the quality characteristics of these vital parts of the biosphere and the resulting harmful to humans, animals and plants Effects (Timothy and Esther 2002) Wherefore it must be found other sources of anti-insecticides and be less impact on the environment (Machial , 2010) and due to the containment of plant material was chased by the killer of insects where this has led to the discovery of many pesticides plant that showed the adequacy of Aley in the fight against various insecticides for females. as indicated the pesticide plant characterized by the speed of decomposition and low toxicity to humans and animals and is the mother plant the recommended dose, as well as to be non-polluting as well as the lack of emergence of resistance described by pest plants given.

Owing to contain the plant *Clerodendrum inerme* contain on vehicle turbine (Gross, and Sutfeld. (1994) found it effective only discouraging for the growth of the organism. Either to plant *Eucalyptus camaldelulensis*

contain volatile oils and was a god important role in the fight(Kriishna et al ,2003)

Given the importance of plant extracts and used it in the fight against the insects to conducted This study was conducted to determine the effect of the use of powders plants *Eucalyptus camaldelulensis*

And *Clerodendrum inerme* to fight the insect

*Sitophilus oryza**e*** through their impact killer and repellent insect alternatives to pesticide chemicals and to reduce pollution environment.

Materials and methods of work

1- samples of insect collection

Compiled of individuals adult insect *Sitophilus oryza**e*** of rice silo Maysan province and kept the samples at a temperature of 25 m in the laboratory insects - Department of Life Sciences - University of Misan for a week for the purpose before the experiment.

2- collecting plant samples

Compiled leaves mentioned from public parks, and also from the Faculty of Education of the University of Misan Prerequisite After cleaning leaves preserved in the laboratory until the experiment.

3- leaves extracts the water

took 50 grams of dry leaves of the plant powder and placed in a glass beaker 500 ml containing 200 ml of distilled water cool, mixed with plant material magnetic mixer for 15 minutes and then leave the solution for 24 hours after his coverage, nominated the solution after the piece and took the filtrate after an operation expulsion Central, the filtrate concentrated in the laboratory and then dry the filtrate in the electric furnace at a temperature (45-40 m) for the purpose of obtaining the raw material dry.

4- test the effect of plant extracts in the percentage of the expulsion of the adult

Adopted the way Naworth (1973) from (Al-hadidi,2014)

With some changes in the proportion of the extruder plant extracts effect on insect ***Sitophilus oryzae*** where he was taking a large platter diameter of 14 cm and a height of 1.5 cm dish with taking another account have a diameter of 8.5 cm and a height of 1.3 cm had been little in the middle of the dish put platter were both installed by a substance gum and after the piece took 10 grams of amber grain rice broken were mixed with plant extracts and focus (0,0,0,5, 0.1, 0.2) per dish and three replications and then enter into the small dish 10 insects It was covered by a very large crater dish cloth linked whereby strap Rubber and after the piece recorded preparation insects emerging from the small to the large dish after 48 hours of treatment and the percentage calculated according to the equation for the expulsion of latte

$$\text{the percentage of expulsion} = \frac{\text{Number of insects emerging from the small dish to the platter}}{\text{The number of insects that were introduced to the small dish}} \times 100$$

5- test the effect of vegetable extracts in the percentage of the adult killed

tooking vegetable extracts for both plants *Clerodendrum inerme* and *Eucalyptus camaldelulensis* by concentration (0,0,0,5, 0.1, 0.2) were added to the adult diet, which consists of 10 g of amber grain rice Broken each dish and mix well, then enter

10 insects per dish adults and three replicates for each concentration and covered in cloth linked rubbery bond and recorded the percentage of dead insects after 7 days of treatment, and the results corrected by Abbott equation known as schneidir and orell(Abbott,1925)

$$\text{Corrected\% for death} = \frac{\text{\%Of deaths in the transaction - \% of death in comparison treatment}}{\text{\%- ١٠٠of death in comparison treatment}} \times 100$$

A statistical analysis of the

Experiment was conducted in accordance with the random design full (C.R.D) experiences a single-treatment and other factorial 'analyzed the percentages of the data after conversion by the conversion narrator Transformation Arcsine, then the results were compared using the test less teams moral (L.S.D) Significant Differences Test (Khalaf Allah, 1980)

Results and discussion

The results appear in Table (1) the impact of the use of concentration differing from the extract plant *Eucalyptus camaldelulensis* and *Clerodendrum inerme* in the ratio of the corrected killing insect ***Sitophilus oryzae*** in the superiority of the plant extract *Eucalyptus camaldelulensis* concentration (0.2) g average killed 4,700 to plant *Clerodendrum inerme* the same concentration with an average murder 3.160 focus

These findings are consistent with what it says) (Tariq ,2010) when used *Eucalyptus camaldelulensis* extract for possible use as a murderer touching insect beetle flour *Tribolium castaneum* with a significant decrease in singling out generation for the first, and with the remit to study(Billal,2015) on the impact of three botanical

extracts, including eucalyptus activity insect ***Sitophilus oryzae*** where *Eucalyptus camaldelulensis* leaf came in second place for the effect on the activity of the insect

Results did not agree with what it says (Mohammad , 2011) when they conducted a study to assess the efficiency of the dry powder in its impact on some aspects of the life of an insect *Musca domestica* where the *Eucalyptus camaldelulensis* extract less efficient than the rest of

The difference in the homicide rate among the plants of this study is due to the different chemical compounds for plants different way to use a powder or an aqueous extract (hot or cold). The mixing of grains and vegetable extracts caused the killing of insects, the spectrum may be due to toxic through contact with the surface of the body of the insect and penetrate chemical compounds through impenetrable flexible the regions or through spiracles, which leads to paralysis and death of the insect, as interpreted by **(**Ali abd Nasser ١٩٩٥)The why kill the insect may be due to contain plants effective compounds such as alkaloids and phenols and Tren and other compounds of these compounds will act to prevent the insect from feeding in Tabaip, as explained(Saadi ,2001) during his study that the rate of killing 64% of the adult *Callosobrauchus Maculatus* (Fabricius) when used in different concentration of eucalyptus powder due to its effect on the nervous and digestive organs

Figure (1) the use of different concentrations of plant *Clerodendrum inerme* and *Eucalyptus camaldelulensis* in the average percentage of expulsion insect ***Sitophilus oryzae***

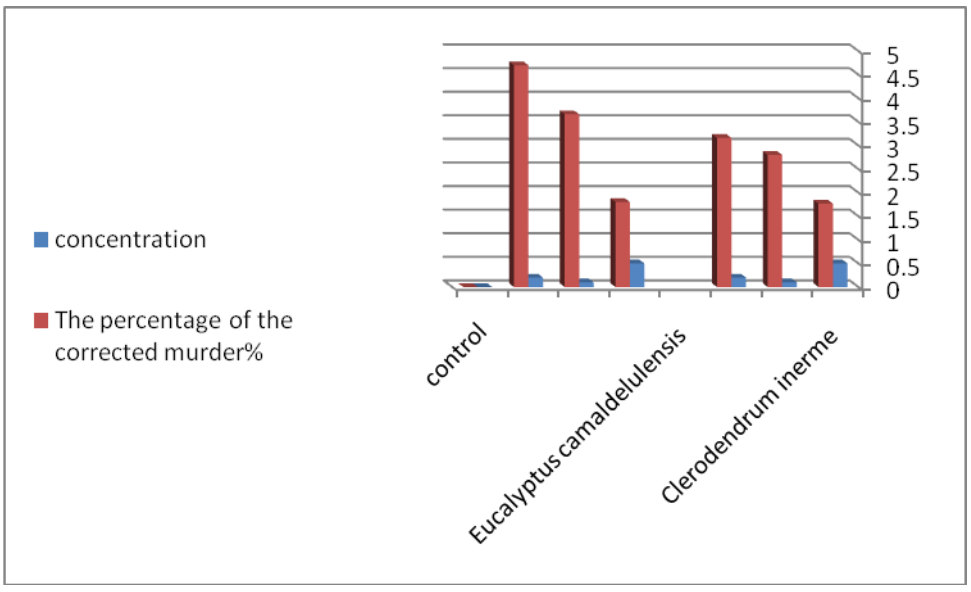


Figure 2 shows the average centrifugal effects of insect ***Sitophilus oryzae*** using varying concentration of plants *Clerodendrum inerme* and *Eucalyptus*

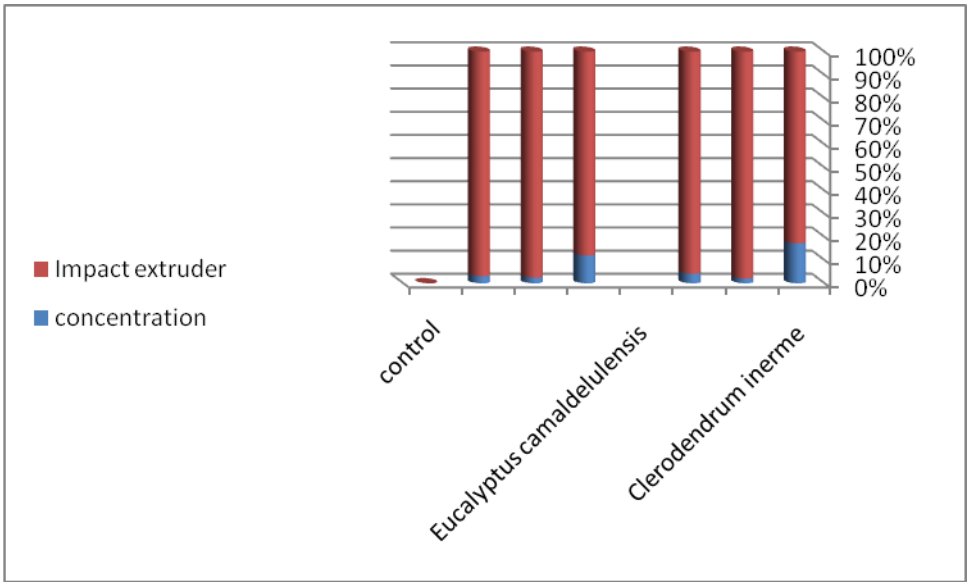
camaldelulensis through shape possible note outweigh the eucalyptus plant extract concentration of 0.2% g average expulsion of 6.300% insect ***Sitophilus oryzae*** to plant *Clerodendrum inerme* extract at the same average concentration expelled percentage was 4.667%

This study agreed with (Lawson,1999) in the loss of nipple with *Tetranychus urtica* rate increases with the concentration of water extracts of leaves Nerium oleander and *Eucalyptus camaldelulensis* and bitter melon by treating the spray, as these results agreed with Matousel him (Mohsen Aljassani,2000) when he used the water extracts of plants Eucalyptus and Atriplrx larvae to *Sitophilus granaries* the results showed superiority of plant extract *Eucalyptus camaldelulensis* extract Atriplrx plant, this study and comply with Matousel him Mustafa ,2007) when studying the extruder and attractive influence into four botanical extracts and was including eucalyptus extract, scoring higher percentage of the expulsion of the worker reached 86% compared with the expulsion of the extracts to other ratios, which amounted to 80%

These results did not agree with him Matousel (Mohammed Abdullah ,2010) when studying the effect of some chemical pesticides and plant extracts on the effectiveness of some of the enzymes insect *Blattella germanica* explained that the impact of oleander leaf extract was more the effect of eucalyptus leaf

The effect of plant extracts for this study differences may be due to the difference in the chemical have ingredients that may be inhibitors or catalysts fueled an effective and sometimes attract insect Article undesirable her because Mother substances within the food components have Atdrick by the insect, because their focus may be enough and mother to respond toxic to insect (Al-hadidi,2014), and the results show that increasing the proportion of expulsions increased with increasing concentration of the plant extract, because the increased focus kills increase the concentration of the active ingredient of vegetable Abstract

Figure (2) use different concentration of plant *Clerodendrum inerme* and *Eucalyptus camaldelulensis* in the average homicide rate corrected insect ***Sitophilus oryzae***



Resources

Arbogast, R.T. **1991**, Beetles; Coleoptera in: J.R. Gorham, Editor. Ecology and Management of Food Industry Pest. Association of Official Analytical Chemists. p.131-176.

Epidi, T.T.and E.O. Odili. 2008. Biocidal activity of selected plant powders against *Tribolium castaneum* Herbst in stored groundnut (*Araohishypogaeal*). *Afr. J. Environ. Sci.Technol*.Vol 3(1): 1 – 5

Timothy T. E. and O. Esther. 2009."Biocidal activity of selected plant powders against Tribolium castaneum Herbst in stored groundnut (Arachis hypogaea L.)" Africa J. Env. Sci. Tech. 3:1. 001- 005

Abbott, W.S.1925.Amethod of computing the effectiveness in insecticide. oils from plants towards *Tyrophagus putrescentiae* (Schrank) and *Suidasia pontifica* Oudemans (Acari: Astigmata) *Journal of Stored Products Research* .47 (4):267-
410 .

Machial , C . M . 2010 . Efficacy of plant essential oils and Detoxi fication mechanisms in *Choristoneura rosaceana* , *Trichoplusia ni* , *Dysaphis plantaginea* and *M yzus persicae* . A Thesis of doctor .The

university of British Clumbia

Tariq 2010 Biocidal activity of selected plant powders against *Tribolium castaneum* Herbst in stored groundnut (*Araohishypogaeal*). *Afr. J. Environ. Sci.Technol*.Vol 3(1): 1 – 5.

Manal M. Akbar , Nasir A. AL-Mansour and Alaa Nadhum The Effect of Organic Solvent Extracts and Secondary Compound Extract on The Biology of House Fly *Musca domastica* (Muscidae: Diptera).

1Biology dep./ Education college

Ali abd Nasser(1995). the effect of bicella lutea on performance of life for white flies (Bemisia tabaci). PhD thesis , college of sience . university of Basra.

Saidi Abdul abbas, (2001). Effect of some plant extracts on the productivity and the loss of adults (*Callosobruchus maculates*) master faculty of agriculture , university of basrah.

Kamal Suleiman 2002 . effect Eucalyptus camldulenis , Melia azedarach (L.) and Nerium oleander on Tribolium castaneum (Teneberionidae:Coleoptera) master thesis. Faculty of education , university of tikrit.

Petrson, C. J., R. Tsao, A. L. Eggler and J. R. Coats. 2000. Insecticidal activity of cyanohydrin and monter penoid compounds. *Molecules 5*.648-654.005

Aswalan, E.F., U.E. Ebere and K.C. Emeasor. 2012. Effect of some plant products on the control of rice weevil *Sitophilus oryzae* (L.) (Coleoptera: Curculionidae).*J.Med.plants Res*.Vol 6(33):4811 – 4814.

Billal NIA1, Naama FRAH2 and Imane AZOUI3, 2015. Insecticidal activity of three plants extracts against *Myzus persicae* (Sulzer, 1776) and their phytochemical screening

Kriishna,G.N;Balachandran,I;Aravind,S;Ganesh,M.R.(2003).Antifeedant and growth inhibitory effect of some heo clerodane diterpenoids isolated from clerdenram species (Verbenaceae) Earias Vitella &Spodoptera litura. J Agric food chem..12;51(6):1555-9.

Gross, E.M.; and Sutfeld.R. (1994). Polyphenols with algicidalin the submerged macrophyte Myriophyllum spicatum. L. Acta.Hortic. 381:710-716

N.M. Al–Mallah.1 S.A. Mustafa 2 W.A. Qasseer 3. 2007 Attraction and Repellency Effect of Wood Extracts of Some Forest Trees on Termite (*Microcerotermes diversus*

Silv. Isoptera, Termitidae) .j sciense basarih , V25,N 1

تأثير مستخلصات نباتي اليوكالبتوس Clerodendrum inerme والياسمين الزفر Eucalyptus camaldelulensis على حشره سوسه الرز Sitophilus oryzae

م.م. صفاء محمد ياسين
قسم: علوم الحياة
كلية العلوم

المستخلص

أجريت هذه الدراسة في مختبر الحشرات- كليه العلوم- جامعه ميسان ، وهدفت الدراسة الحالية إلى تحديد التركيز القاتل والفعالية الطاردة لنباتي اليوكالبتوس والياسمين الزفر ضد حشره سوسه الرز ، وكانت التركيز المستخدمة في التجربة هي 0.0,0.0.5,0.1,0.2 ، وتم حساب النسبة المئوية لقتل ألحشره بعد سبعه أيام من المكافحة ، وبنفس التركيز المذكورة أعلاه حسب التأثير الطارد لحشره بعد ٤٨ساعه من المكافحة .

وبينت النتائج تفوق مستخلص اليوكالبتوس بتركيز ٠,٢% بنسبه عاليه لقتل في تفوق مستخلص نبات اليوكالبتوس بتركيز (٠,٢) غم بمتوسط قتل ٤,٧٠٠ على نبات الياسمين الزفر بنفس التركيز وبمتوسط قتل ٣,١٦٠. كما أظهرت النتائج تفوق مستخلص نبات اليوكالبتوس تركيز ٠,٢%غم بمتوسط طرد ٦,٣٠٠% لحشره سوسه الرز على مستخلص نبات الياسمين الزفر عند نفس التركيز وبمتوسط طرد مئوي بلغ ٤,٦٦٧%.