

Effect of medical compounds plant cloves (*Dianthus spp*) on the positive and negative bacteria to gram

Baan Munim Abdulrazzaq Twaij*

*College of Science, Al-Mustansiriya University, Baghdad, Iraq

ABSTRACT: The research was conducted in the greenhouse (Botanical Garden) and laboratory microbiology, Mustansiriya University, college of Science / Department of Biology, for a period of 19 \ 1 \ 2014 to 15 \ 4 \ 2014 the target noted the effect of plant hormones to increase the intensity and number of leaves plant, and determine the effect of plant extracts of cloves (seeds, leaves which treatment with plant hormones, leaf not treatment with plant hormones) on bacterial growth. And use the hormone vegetable (Kin) Kinten to plant cloves were compared the results with the number and plant leaves density of plant cloves that were without hormonal treatment where it was working on a set of clips (seedlings) and small-old, as it has been sprayed with different concentrations of (Kin) (0.1 , 0.2, 0.3) mg \ l, results showed that the concentration (0.2) mg \ l (kin) gave the best result of the growth and density of plant leaves. Have also been used clove extracts to determine their effectiveness on bacterial growth was observed where the effectiveness of the bacteria and negative and gram-positive and different concentrations where all of these extracts showed the effectiveness of both negative and positive types. And showed us the seeds of carnations best effect inhibitory at concentrations (100,500) g \ ml and a diameter of inhibitory (14.15) mm negative bacteria and positive, respectively, and came after the securities transaction when the focus (300) g \ ml and diameter (11.13) mm respectively , then untreated papers which gave comparable results in all concentrations. Experimental results show the effectiveness of extracts normalize against negative bacteria higher than in positive bacteria.

KEY WORDS:- *Dianthus spp*, medical compounds plant cloves.

I. INTRODUCTION

Perhaps the human interest in medicinal and aromatic plants and toxic began with the creation and existence, it has managed to human instinct Find alleviates pain and dentistry using the surrounding plants .The plant cloves evergreen tree, narrow and opposite flowers and leaves of different colors and shapes, seeds resemble nails, the most parts widely used and also called stick Nawar and the color red and turn to brown and when they become dry, use dried seeds in a lot of foods in addition to the Medical their effects useful ⁽¹⁾ , contains a volatile oil such as Gallic acid, Oleanic acid, kaempfero, biflorin, myricetin, Eugenol⁽³⁾⁽⁴⁾ , And is used widely as mouthwash and because of its effect topical anesthetic was used in the placement of dental pain ⁽⁵⁾ . Described carnations as repellent fever and sterile gut and stomach ⁽⁶⁾ , and healing of mouth sores and pain of the brain, epilepsy, strengthens the immune system and relieve sensitivity inflammatory and stimulates the heart, generates menstruation, interrupt urinary incontinence ⁽⁷⁾ , and enjoys a plant, especially in the treatment of some cases do sick advantages as used in the treatment viral infection behind the disturbances kills cloves food poisoning oil for some types of bacteria, including: - shigella, pseudomonas aeruginosa, which can all cause food poisoning ⁽⁸⁾ , and is clove oil from the kinds of strong oil if used in pure so it is advisable to ease oil form the last type of oils such as olive oil ⁽⁹⁾ . Plant physiology and know that the science that tries to interpret the rules of the whole plant activities physicist and chemist and discover all the laws of nature ⁽¹⁰⁾ . The use of a phytohormones Activity Aoxina compound cause most of the physiological responses in plants, including the plant regulators, growth hormones, growth regulators , And classification of plant hormones into five groups are Alaoxinat, Aljprlinat, ethylene, Alsaitokanen, Alabcisan ⁽¹¹⁾ , and is Alsetukajtn of the most important hormones that make in developing Tops In a recent growth Securities and transferred to the parts of the plant works to stimulate the division of the cytoplasm and is used in the production of the contract as it uses in the production of fruit without fertilization and seedless ⁽¹²⁾ .

Kingdom:- Plantae

Phylum:- mangoliophtae

Class:-magnoliopsida

Order:- caryophyllales

Family:- caryophllaceae

Genes:-*Dianthus spp*.

(2)

II. MATERIALS & METHODS

- instruments used in the treatment of plant leaves- :
cylinder, Sranj 5ml, water sprays, Beaker
- chemical substances used- :
Kinten, Thyamine, water
- instruments used in the extraction process- :
-flask, filter paper, Plane tube , Centerfuge , Autoclave , Funnal , plastic plates , Oven , distilled water ,
Saqib cork , Piptte & tipe , ethanol 100% , Swab
- **Treatment of leaves of the plant:** -
 - 1- were divided into 4 groups of Anvils (0.0, 0.1, 0.2, 0.3 mg / L) so that each group included 5.
 - 2- withdraw 0.1 ml of Kinten (Kin) and 0.1ml of the thyamine by syringe and put it in the cylinder and complements the size to 100 ml of distilled water and placed in plastic packaging in the form of spray and sprayed on the first set of leaves plant cloves
 - 3- withdraw 0.2 ml of (Kin) and 0.1ml of the thyamine also by syringe and put it in the cylinder and complements the volume to 100 ml of water and mix and shake and then we put it in the plastic packaging in the form of spray and sprayed on the second group of plant cloves papers
 - 4- withdraw from 0.3ml (Kin) and 0.1 ml of the thyamine by syringe and put it in the cylinder and complements the size to 100ml of water and placed in a container and sprinkle on the third group leaves to plant cloves.
 - 5- After 8 weeks of treatment plant hormone (Kin) watching the plant note that the best concentration is 0.2 mg \ 1 where gave the highest percentage of growth leaves cloves, and then comes the focus of 0.1 mg \ 1 observed that the stock ratio was lower density and smaller size of concentration of 0.2 mg \ 1 noticed that while the proportion of securities in concentration of 0.3 mg \ 1 was much less in terms of size and number of leaves is similar for the control almost.
- extraction (seeds, leaves non-treatment, treatment of papers)**
 - 1- We crushed the parts to be extracted amount of 50 g of each part of the plant using Blender mill
 - 2- Keep all part of the plant in the flask and add alcohol ethanol 100% and leave for three days with constant agitation
 - 3- We nomination extracted using the nomination papers take filtrate and neglect sediment
 - 4- conducting centrifuges for leaky 3000 cycle \ 10 minutes we take the filtrate and neglect sediment
 - 5- monument filtrate in plastic plates and dried using the oven 40 m
 - 6- Take demodulator output and make a series of dilution (100,200,300,400,500) using the law $C1V1 = C2V2$
 - 7- treat bacterial isolates such dilution and after watching the results Wi extract and concentrate better inhibition of bacterial growth.

III. RESULTS & DISCUSSTON

The effect of hormones on plant growth: -

After 8 weeks of plant leaves of different concentrations of cytokinin treatment (Kin) Kinten (0.1,0.2,0.3) mg \ 1 observed that the concentration of 0.2 mg \ 1 gave the best result or has had a major impact on increasing the number of leaves and density, compared to aconcentration (0.3, 0.1) mg \ 1, note that as a result of the transaction, focusing (0.1) mg \ 1 gave a better result than (0.3) mg \ liter increase in the vegetative to the plant (leaves density and size) Previous concentrations were compared combined with control (non-treatment) and this we infer that (Kin) concentration (0.2) mg \ 1 Ilha concentration (0.1) mg \ 1, respectively stimulated increase growth, as it works (Kin) as the key to start the division may be adenin in the molecule cytokinin is the part that lead role fundamental in the process of cell division.



Fig 1- Model of clips before exposure to the hormone



Fig 2- Model of clips after exposure to the hormone



3-

Fig (3) Cloves plant with a concentration of 0.2 mg \ l before exposure to the hormone



4-

Fig (4) Cloves plant with a concentration of 0.2 mg \ L after exposure to the hormone

The effect of extracts on bacteria: -

The results reflect the existence of effective inhibition of good seed extract alcohol and alcoholic extract of the leaves treatment and non-treatment in the growth of bacteria *E.coli* and *Staphylococcus*. When using concentrations (100 and 200, 300, 400, 500) g/ml note that alcoholic extract of the seeds of a concentration (100) g/ml was more effective on the *E.coli* bacteria as diameter reached inhibitory region (15 mm), while the concentration (200) g \ ml was more effective on the *Staphylococcus* bacteria as Qatar reached inhibition (14 mm).

The Securities extract treatment was less effective than the seed extract as the highest percentage of inhibition arrived at a concentration of 300 g \ ml in both types of *Staphylococcus* bacteria in diameter was inhibition (13 mm) either in the *E.coli* bacteria was diameter (11) mm.

We note that the stock extract non-treatment was the least effect compared with the seed extract and securities transaction on both types in bacteria, where the results were almost all close in all concentrations. As in Table (1).

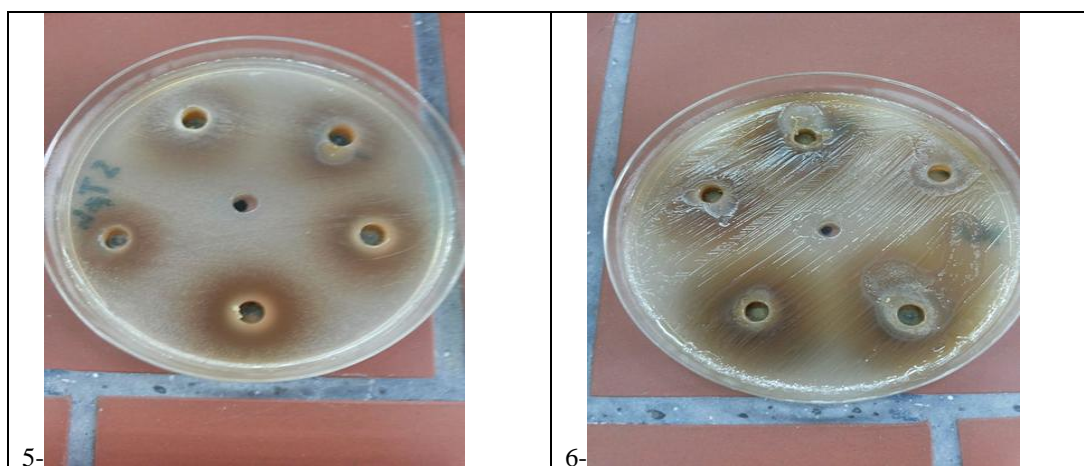


Fig (5) represents the model of the effect of the seed extract of the bacterium *Staphylococcus* (G+ve)
 Fig (6) represents a model of the effect of the seed extract of the bacteria *E.coli* (G-ve)

Part of plant	concentration Name	500 g/ml	400 g/ml	300 g/ml	200 g/ml	100 g/ml
seed	Staph (G+ve)	12 mm	10 mm	11 mm	14 mm	11 mm
	E.coli (G-ve)	14 mm	mm13	12 mm	14 mm	15 mm
leaves of the plant non treated	Staph (G+ve)	10 mm	8 mm	9 mm	10 mm	9 mm
	E.coli (G-ve)	8 mm	9 mm	9 mm	9 mm	9 mm
treatment plant leaves	Staph (G+ve)	9 mm	9 mm	13 mm	12 mm	11 mm
	E.coli (G-ve)	11 mm	10 mm	11 mm	10 mm	10 mm

Table (1)

Reason may be attributed the difference between the effectiveness of the seed extract for extract-treated leaves of the plant and leaves the plant non treated to the presence of some secondary metabolites-effective inhibitory to bacteria at high seeds, either treatment leaves of the plant extract was more effective than non-treated leaves of the plant extract in the concentrations used all of them. From the above, we find that the seed extract is the most effective of the types of bacteria used in the study, followed by treatment leaves of the plant extract and leaves of the plant non treated extract was this difference is due in effectiveness to the quality and quantity of chemical compounds-effective inhibitory to bacteria in extracts, may be the reason is the polarity the solvent used in the extraction. In terms of the contrast between the types of bacteria in sensitivity toward the extract has noted several studies^(13,14) that the bacteria positive for gram more sensitive to the inhibitory factors for growth of the gram negative bacteria. The reason for this goes back to the cell wall components that provide some kind of protection from bacterial cell to these factors as well as having some protection to enable them to resist the unfavorable conditions Systems. There are also some studies⁽¹⁵⁾, which dealt with the effect of plant extracts in the growth of bacteria suggest that the bacteria *staphylococcus* be tougher inhibition of other types of bacteria.

IV. CONCLUSTON

We conclude from the current study that the seeds of clove extract its inhibitory effect on the types of bacteria in this study, which is the most inhibition followed by treatment leaves extract and then leaves extract untreated extracts was less impact on bacterial growth

REFERENCE

- [1]. Albhedy, Mohammed Abdel-Hamid, Hassan Ahmed Hassan (1985) Horticulture book translator, Arab House for publication and distribution Cairo.
- [2]. Plants.usda.gov (scientific classification of Dianthus spp).
- [3]. Moussa Al Jafar Hassan oada Credi, Khamis Al Habib Mutlaq, and Sundus Hamid Ahmed (2013), Department of Food Technologies, Agricultural Research Service, the Ministry of Science and Technology.
- [4]. Dictionary of plants and herbal therapy.
- [5]. Abbas, Fadel (1987) care and storage of fruits and vegetables Public Library Printing and Publishing Directorate of Mosul.
- [6]. Shahat, Nasir Abu Zeid (1988), aromatic plants, agricultural and pharmaceutical products, the first edition, Dar Al Arabia for Publishing and Distribution, Egypt, p. 79.
- [7]. Ani, Tariq Ali (1991) Physiology germination and composition of growth, Dar al-Hikma for printing and publishing, Baghdad, Iraq.
- [8]. Aleateem, Salah al-Din Mahmood (1995 m). Veseloggio and post-harvest handling of horticultural crops, modern university office - Alexandria, p. 167.
- [9]. Ani, Tariq Ali (1991), Plant Physiology and composition of growth, Dar al-Hikma for printing and publishing, Baghdad, Iraq, p. 59.
- [10]. Hussain, Asim Mahmood (1985), Introduction to Plant Physiology and Ministry of Higher Education and Scientific Research - Iraq p. 9.
- [11]. Saqr Moheb Taha and Plant Physiology, Faculty of Agriculture, Mansoura University.
- [12]. <http://www.uobabylon.edu.iq>
- [13]. Cimanag ,Kambu ,Tone , Apers, Debruyne. L. Hermans , Tote,, Pieter, L. amd vlietinc, k;k; L. s.; T.; N.; A.J. "Correlatin between chemical composition and antibacterial activity of essential oils some aromatic medicinal plants growing in the congo gournal ethanophamacolcgy ". 79(2);213-220-2002.
- [14]. 14-Benekeblia. N. "Antimicrobial activity of essential oil extraction of various onions(*Allium cepa*) and garlic (*Allium sativum*)".food sei. Technol.,37(2):263-26.2004.
- [15]. 15. Agaoglu, Dostbil, And Alemdar, S.; N."Antimicrobial effect of seed extract of cardamom (*Elettariacardomummaton*)".YYU veterinerfakultesi dergisi.74(2);113-123.2005.sss.