

لبذور اليانسون ضد البكتريا (موجبة لصبغة كرام) و *Bacillus subtilis* و *Staphylococcus aureus* وبكتريا (سالبة لصبغة كرام) و *Escherichia coli* و *Pseudomonas aeruginosa* والاعفان *Mucor spp*, *Aspergillus spp*, *Penicillium spp*, *Rhizopus spp* لكونها تمثل

4000 2000 1000

كرام *Staphylococcus aureus* و *Bacillus subtilis* كانت أكثر تأثراً من البكتريا السالبة لصبغة كرام *Escherichia coli* و *Pseudomonas aeruginosa* وبلغ أقصى معدل لأقطار مناطق

4000

24,26

13,18

الاختبار *Rhizopus spp* كان أكثر الاعفان تأثراً عند التركيزين 2000 و 4000 جزء بالمليون من

%42 , %30

الكحولي 95% لبذور اليانسون للبكتريا الموجبة لصبغة كرام 8.8 و 7.4 لكل من *Staphylococcus aureus* و *Bacillus subtilis* على الترتيب بينما لم يظهر للمستخلص الكحولي لبذور اليانسون أي تأثير أو تثبيط لنمو بكتريا *Escherichia coli* حتى في تركيز 4000 جزء بالمليون. أما عفني *Mucor* و *Rhizopus* أظهرت أكثر نسبة تثبيط من *Aspergillus* و *Penicillium* حيث بلغت نسب

% 22,25,28,29

(*Pimpinella anisum* L.) Anis
Ombelliferaceae , Umbelliferae
(1988) Hemphill Hemphill (1972) Davis

Hemphill Hemphill

.(1994) Reineccius (1988)

1988 Hemphill Hemphill 1972 Davis)

.(1994 Reineccius

%3-2

%90 -80

Methyl chavicol Anethol

.(2008) Al-Kassie

, (1997) Rattray Dwyer

%21

%29

Choline

%0.5

(2007) Erhen

Bolukbasi

Coliform

.(2008 Al- Kassie)

Pimpinella anisum

Escherichia coli
Aspergillus spp

Staphylococcus aureus
Rhizopus spp

Bacillus subtilis
Pseudomonas aeruginosa
Penicillium spp ,*Mucor spp*

Nutrient

48- 24

° 37

agar

° 25
 ° 5
 Potato Dextrose Agar
 (1972 Mitcher) 72
) 50
 150 (Clevenger
 ° 4
 200 15
 Millipore
 5 ° 40 , 0.45
 .(1993) Mohamoud ° 7-5
 ,
 .(1993), Mohamoud
 .(2006 Al-Ani 1998 Al-Ani)
 :
 10000
 4,2,1 Stock culture
 Potato Dextrose Agar Nutrient agar 6,8,9
 ° 50 - 45
 4000,2000,1000
 ° 4
 .(2006 Al-Hakeem) P.D.A. Nutrient agar
 :
 Stock 10000
 6,8,9 4,2,1 culture
 4000,2000,1000
 N.A , P.D.A.
 . (1993 Mohamoud)

° 37 Nutrient Broth
 Filter Paper Disc Diffusion 24
 N.A. 0.1 (2006 Al-Hakeem)
 Whatman 6-4 , L
 10 4 No.3
 , micropipette
 (Clear Zone) 24 ° 37
 .(2008 Saeed)

(Poisoned Food Technique)

0.5

° 25

5

: (2008 Saeed 2008 Jasim 1962 Beneke)

100× _____ = %

(2001) , Statistical Analysis System

. LSD

Bacillus subtilis ()
Escherichia coli () *Staphylococcus aureus*
Rhizopus spp , *Penicillium spp*) *Pseudomonas aeruginosa*
 (*Mucor spp* *Aspergillus spp*,

.(2006 Al-Ani 1998 Al-Ani)

(1)

24 26 *Bacillus subtilis* *Staphylococcus aureus*
 2000 4000
Escherichia coli 11 3
 1000 *Pseudomonas aeruginosa*
 .1

<i>Pse. aeruginose</i>	<i>E.coli</i>	<i>Sta.aureus</i>	<i>B.subtilis</i>	تركيز الزيت جزء بالمليون
-	-	-	-	نموذج المقارنة
11	3	14	12	1000
13	7	18	17	2000
18	13	26	24	4000
2.830	2.715	3.094	3.540	LSD 0.05

(2)

4000 %39 %42
Mucor spp *Rhizopus spp*
 1000 *Aspergillus spp* *Penicillium spp*
 %15 %12

Methyl chavicol Anethol)

% 90-80 (

Al-Kassie)

.(2004

Lee 2003

Cabuk 2008

. 2

نسبة التثبيط %				تركيز الزيت جزء بالمليون
<i>Penicillium spp</i>	<i>Aspergillus spp</i>	<i>Mucor spp</i>	<i>Rhizopus spp</i>	نموذج المقارنة
-	-	-	-	1000
12	15	20	22	2000
18	22	29	30	4000
26	28	39	42	LSD 0.05
3.874	4.112	4.678	5.017	

1000 (3)
Staphylococcus aureus
Escherichia coli , 4000 8.8
 4000
 . (2007)
 %95 3

<i>Pse.aeruginosa</i>	<i>E.coli</i>	<i>Sta.aureus</i>	<i>B.subtilis</i>	تركيز المستخلص جزء بالمليون
-	-	-	-	نموذج المقارنة
-	-	-	-	1000
6.0	-	7.4	6.6	2000
6.8	-	8.8	7.4	4000
1.293	0.00	1.475	1.340	LSD 0.05

1000 (4)
Rhizopus spp 4000
 %28 %29 *Mucor spp*
 (2006) Al-Hakeem

%95 .4

نسبة التثبيط %				تركيز المستخلص جزء بالمليون
<i>Penicillium spp</i>	<i>Aspergillus spp</i>	<i>Mucor spp</i>	<i>Rhizopus spp</i>	نموذج المقارنة
-	-	-	-	1000
15	13	16	18	2000
22	25	28	29	4000
2.547	3.068	3.156	3.451	LSD 0.05

- العلامة (-) تعني إن نسبة التثبيط تساوي صفر.
- العلامة (-) تعني إن معدل قطر منطقة التثبيط تساوي صفر .

.2007.

.(38)

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THE EFFECT OF ANISE SEED EXTRACTS IN SOME MICROORGANISMS .

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ABSTRACT

Antimicrobial activity of oil, aqueous and alcoholic extracts of anise seeds against gram positive (*Bacillus subtilis* , *Staphylococcus aureus*) and gram negative (*Escherichia coli* , *Pseudomonas aeruginosa*) bacteria and molds (*Rhizopus spp*, *Mucor spp* , *Aspergillus spp* , *Penicillium spp*) were tested ; those microorganisms represent common causes to some human and animal employed in extracting anise oil. Concentration of (1000,2000,4000 PPM) of the extracts above were used to find their action in the tested microorganisms. It has been shown that *Ba-subtiles* and *Staph. aureus* bacteria were affected more than *Escherichia coli* , *Pseudomonas aeruginosa* .The maximum diameters of inhibitory zones (24, 26 mm) were appeared at a concentration of 4000 ppm of oil extract against the tested gram positive bacteria comparing with 13 ,18 mm of diameters of inhibitory zones recorded against the tasted gram negative bacteria at the same conditions. The tested mold *Rhizopus spp* was the most susceptible to the oil extract, the percentages of their inhibition at constrictions of 2000 and 4000 ppm were 30 and 40% consequently in comparison with alcoholic extract 95% which was 7.4 and 8.8% for *Bacillus subtilis* , *Staphylococcus aureus* consequently .The alcoholic extract had no effect in the growth of *Escherichia coli* even at the concentration of 4000 ppm. The molds *Rhizopus spp*, *Mucor spp* were influenced more than , *Aspergillus spp* , *Penicillium spp* since the percentages of inhibition were 29,28,25,22% consequently. The aqueous extract was not effective in all tested microorganisms because it had no anise oil and thus no anithol dissolved (the active material), generally result indicated from seed Anise oil have more activity than alcoholic and water extracts.