

(*Helianthus annuus L*)

(2004/6/22 ;2003/2/5)

45 -

/ (2000)

Macrophomina phaseolina *A. dianthi* *Alternaria alternata*

A. / (1000)

A. dianthi / (1000) 45- *alternata*

. *M. phaseolina* / (100)

**Chemical Control of Pathogenic Sunflower(*Helianthus annuus L*)
Seed Borne Fungi**

Nadeem A. Ramadan

Abeer A. Mahmood

*Biology Department
College of Sciences
Mosul University*

ABSTRACT

Effectiveness of five fungicides (benlate , captan , dithane M-45 , rhizolex , tecto) which were used in seed treatment and foliar application showed that tecto and rhizolex were the most effective *In Vitro* studies to control the studied fungi , while tecto and captan at the rate 2000 mg /l were the most effective in controlling damping – off sunflower (as seed dressing) .All the fungicides showed effectiveness in protection

sunflower plants from leaf spotting caused by *A. alternata* , *A. dianthi* and *M. phaseolina* i.e. captan , tecto the rate 1000 mg/L were most effective against *A. alternata* and benlate , dithane M-45 at the rate 1000 mg/l against *A. dianthi* while benlate and tecto at rate 100 mg/l were the best fungicides against *M. phaseolina* .

Compositae

(1990) *Helianthus annuus L.* sunflower

%50-30

(FAO , 2000)

(70)

(150) 1988

Roberts *et al* ,1986 Christensen,1969

. Krishnappa and Shetty , 1990

%50 Benomyle)

(%60 Dithana M-45) 45-

%50 Captan)

(%60 Rhizolex

(%60 Tecto)

(Krishnappa and Shetty , 1987)

(55-50)

5

/

1000 500 100

(10) PSA

.....

2± 25

(C) (I) (I=C-T/Cx100) Vincent
 (T) ()
 (Krishnappa and Shetty , 1987) ()

45 -

2000 (Pre-Post emergence damping off)
 / 5000 45- : /
 (Diekmann 1993)
 Hoggar (20)
 (11)
 / 10 (10)
 (Saydam *et al.* , 1973)

Hoggar Aur IPA

A. dianthi . *A. alternata*

M.phaseolina

(10)

⁵10× 3.5) *M.phaseolina* (24)

(/ ⁵10× 5) *A. dianthi* *A. alternata* (/

(24)

R. solani *F. solani* (1)
/ 1000 *A. alternata*
M. phaseolina *R. solani* (Roy , 1975)
Jeffrey and (1993 Abo El-Dahab et al., 1980) / 250
. *A. dianthi* (Lipps, (1985
A. / 1000 500 *M. phaseolina*
A. dianthi *R. solani* *alternata*
Jeffrey and Lipps,) (Hemeda, 1985) *F. solani*
(Diekmann, 1993) (1993) (1985
carboxin *Fusarium*
M. phaseolina *A. alternata* 45 -
F. solani / 1000 *R. solani* *A. dianthi*
M. (1993) Diekmann (1980) Abo El-Dahab
A. alternata / 1000 *phaseolina*
F. solani *R. solani* *M. phaseolina* *A. dianthi*
. (Beldawi et al.,1989) *R. solani*
(Jeffrey and Lipps , 1985)
Thiabendazole Chlorothaionil *A. dianthi*
(1994)
. *M. phaseolina* *F. solani* *R. solani*

M. phaseolina 45-
A. dianthi
. *R. solani*

.....

: 1

					/	
<i>R.solani</i>	<i>M.phaseolina</i>	<i>F. solani</i>	<i>A. dianthi</i>	<i>A. alternata</i>		
95.55	100	100	51.33	* 57.77	100	
96.3	100	100	54.44	83.33	500	
100	100	100	75.0	92.77	1000	
74.25	80.18	42.58	55.0	71.55	100	
86.85	100	69.44	64.88	90.44	500	
93.0	100	68.22	76.0	92.22	1000	
33.33	94.25	31.55	74.66	98.22	100	45-
52.41	100	58.14	89.66	94.88	500	
95.92	100	85.55	100	100	1000	
99.03	100	85.22	91.88	100	100	
100	100	92.66	97.44	100	500	
100	100	93.0	100	100	100	
100	100	100	86.38	97.55	100	
100	100	100	99.33	98.11	500	
100	100	100	99.33	99.66	1000	
0.0	0.0	0.0	0.0	0.0	0.0	

.() %5

*

(2)

A. alternata

45-

A. dianthi (Diekmann, 1993)

% 66.6

Jeffrey and Lipps (1985) .Chohan (1978)

/ 150 *A. dianthi* 45-

45-

F. solani

(% 93.3) 45-

Fusarium .sp

(Diekmann, 1993)

45 -

/ 4

M. phaseolina

(Diekmann, 1993)

% 73.3

R. solani

(Roy . 1975)

45-

(Hemeda, 1985)

R. solani

R. solani

(Beldawi et al., 1989)

(Diekmann , 1993)

R. A. alternata

F. solani A. alternata

45-

(Hemeda , 1985) *solani*

(1979)

% 20 % 10

R. solani A. alternata

. % 53.3

M. phaseolina

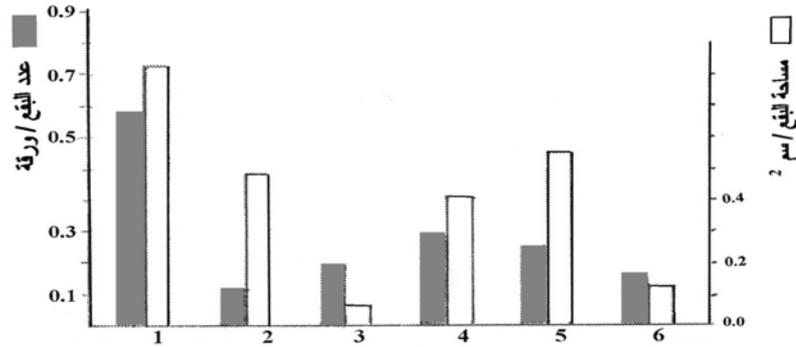
: 2

(%)						
		45-				
83.3	- 76.6	63.3	53.3	50.0	* 10.0	<i>A. alternata</i>
60.0	60.0	53.3	66.6	43.3	33.3	<i>A. dianthi</i>
- 76.6	- 66.6	93.3	53.3	46.6	43.3	<i>F. solani</i>
93.3	- 66.6	63.3	80.0	46.6	53.3	<i>M. phaseolina</i>
60.0	- 73.3	43.3	50.0	63.3	20.0	<i>R. solani</i>

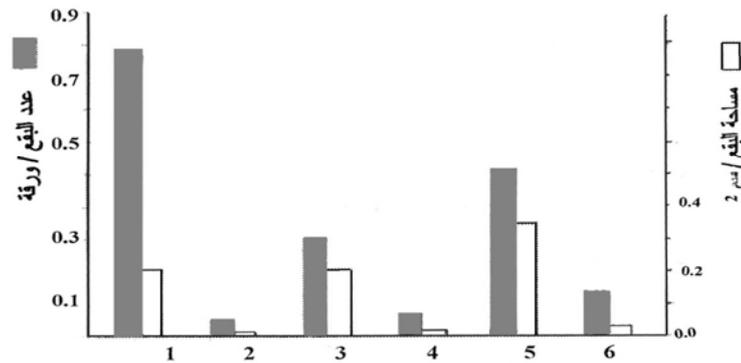
- / 0.68 (1)
A. alternata (Kolte et al., 1979)
² / 0.85
 (Hemeda , 1985) *A. alternata*
 Chohan)
- 45- (1985 , Hemeda , 1978
 Bhowmik and Singh (1976) 45-
Altarnaria sp 45-
 / 0.22
- 45- (2).
A. dianthi
² 0.21 / 0.07 / 0.88
 45- ² 0.01
 (Kolte *et al*, 1979) . (Bhowmik and Singh ,1976)
 (10-7) % 0.3 45-
 (Hemeda , 1985)
² 0.03 / 0.14 *A. dianthi*
 (Diekmann , 1993)
- A. dianthi*
 M. (3) . (Beldawi *et al*,1989) *R. solani*
 / 0.63 *phaseolina*
 (Goswami and Dasgupta , 1981) ² 0.97
- Rai Ilyas et al., 1975) ² 0.01 ² 0.79
 45- . (Abo El-Dahab et al., 1980 and Srivastava , 1978
 Abo El-Dahab

M.

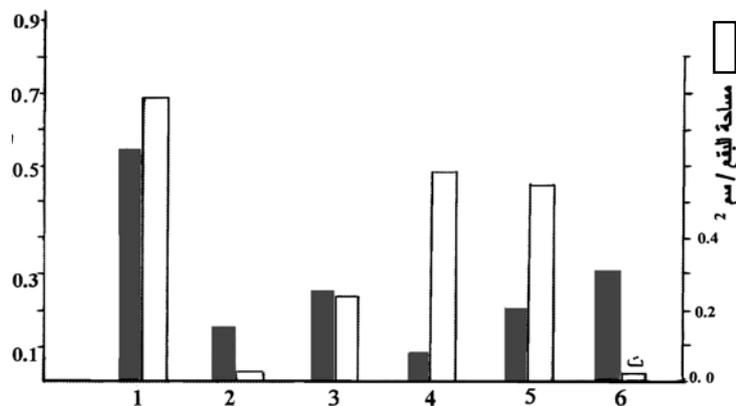
45-

et al., (1980)
. *phaseolina*

شكل (1) : تأثير المبيدات المستخدمة على عدد ومساحة البتق المتكونة على اوراق نباتات زهرة الشمس صنف (IPA) المصابة بالفطر *A. alternata* . 1- مقارنة ، 2- بنليت ، 3- كابنان ، 4- داينين م-45، 5- رايزولكس ، 6- تكتو .



شكل (2) : تأثير المبيدات الفطرية المستخدمة على عدد ومساحة البتق المتكونة على اوراق نباتات زهرة الشمس صنف (Azur) المصابة بفطر *A. dianthi* . 1- مقارنة ، 2- بنليت ، 3- كابنان ، 4- داينين م-45، 5- رايزولكس ، 6- تكتو .



شكل (3) : تأثير المبيدات الفطرية المستخدمة على عدد ومساحة البتق المتكونة على اوراق نباتات زهرة الشمس صنف (Hoggar) المصابة بالفطر *M. phaseolina* . 1- مقارنة ، 2- بنليت ، 3- كابنان ، 4- داينين م-45، 5- رايزولكس ، 6- تكتو .

- .1990
316 .
- .1979
397 . - .
- .1980
448.
- .1994
- /
- .1993
520 .
- Abo, El-Dahab, M.K. Tarabeih, A.M. and Mohamed, S.E., 1980. Studies on sunflower diseases in Egypt I. Studies on charcoal rot and its control . Egypt. J. Phytopathol. 12 (1-2) : pp.113-122.
- Beldawi, A.S., Shams El-Din , S., Hassan , W. and Jawad, A., 1989. Control of damping off disease caused by *Rhizoctonia solani* on cotton and okra with fungicides . Basrah J. Agric . Sci 2. (1-2) : pp.158-163.
- Bhowmik, T.P. and Singh , A., 1976. Combined effect of *Rhizoctonia* root and *Alternaria* leaf blight on sunflower . Indian Phytopathology. 30 : pp.195-197.
- Chohan, J.S., 1978. Diseases of oil seed crops , future plans and strategy for control under small holdings . Indian Phytopathology 31 : pp.1-11.
- Christensen, C. M., 1969. Factors affecting invasion of sunflower seed by storage fungi . Phytopathology 59 : pp.1699-1702 .
- Diekmann , M., 1993. Seed – borne diseases in seed production International Center for Agricultural Reserch in the Dry Areas (ICARDA) Aleppo , Syria 81 p.
- F.A.O. 2000. FAOSTAT , Satistical Database . [http : //WWW. FAO. Org](http://WWW.FAO.Org)
- Goswami, B.K. and Dasgupta, M.K., 1981. Leaf blight, powdery mildew and charcoal rot diseases of sunflower from west Bengal. Indian Phytopathology 34 (1) : pp. 14-16 . (Rev. Plant Pathol. 61.4296) .
- Hemeda, A.A.H., 1985. Health testing of certain oil seed crops with referance to control measures . M.Sc. Thesis. Univ. of Alexandria. Egypt .
- Ilyas, M.B. Ellis , M.A. and Sinclair , J.B., 1975. Evaluation of soil fungicides for control of charcoal-rot of soybean . Pl. Dis. Repr.. 59 : pp.360-364.
- Jeffrey, K.K. and Lipps, P.E., 1985. Seed-treatment fungicides for control of the seed-borne *Alternaria helianthi* on sunflower . Plant Dis 69 : pp.124-126 .

- Kolte, S.J., Balasubrahmanyam , N., Tewarl, A.N. and Awasthi , P., 1979. Field performance of fungicides in the control of the *Altrenaria* blight of sunflower . Indian J. Agric. Sci. 49 (7) pp.555- 559.
- Krishnappa, M. and Shetty, H.S., 1987. Control of seed-borne fungi in sunflower. Geobios 14 : pp.204-208.
- Krishnappa, M. and Shetty, H.S., 1990. Location of *Altrenaria* species in sunflower seeds. Plant Diseases Research 5 (2) : pp.203-204.
- Rai, J.N. and Srivastava, S.K., 1978. Studies on the chemical control of root and stem rot of Brassica Juncea caused by *Macrophomina phaseolina* .Indian Journal of Mycology and Plant Pathology 7 : pp.47-51.
- Roderis, R.G. Robertson , J.A. and Hanlin , R.T., 1986. Fungi occurring in the achenes of sunflower (*Helianthus annuus*). Can. J. Bot 64 : pp.1964-1971.
- Roy, A.K., 1975. Pathogenicity of *Rhizoctnia solani* and its control. Indian Phytopathology 28 : pp.184-188.
- Saydam, C.M.; Copcu, M. and Segin. E., 1973. Studies on the inoculation techniques of cotton which caused by *Verticillium dahliae* Kleb. 1-Invistigation on the laboratory inoculation techniques. Turkish Phytopathology . 2 : pp.69-75.