

T. viride *Trichoderma harzianum*

Trichophyton

(2010 / 12 / 27 2010 / 10 / 12)

, *T. viride* *Trichoderma harzianum* *Trichoderma*
2 , 1 , 0.5 , 0.1)

(ketoconazole) (/ *Trichophyton*

ketoconazole

T.harzianum

ketoconazole T.viride (/ 2 1)
%100 *T.harzianum* / 2

Trichophyton

T. viride *Trichoderma harzianum* :

.ketoconazole

***Trichoderma harzianum* and *T. viride* Crude Extracts Effect on Species of Trichophyton which Caused Skin Human Disease**

Maha A. Al-Rijabo

Omar M. Al-Obaidy

*Department of Biology
College of Science
Mosul University*

ABSTRACT

Two *Trichoderma* species (*T.harzianum* and *T.viride*) were used in this study, in which the crude extracts of these fungi were extracted and tested (with compared ketoconazole) at the concentrations 0.1, 0.5, 1 and 2 mg/ml against different species of the human pathogenic fungi *Trichophyton*, the results showed a huge inhibition activities of these extracts against the tested fungi with some differences in the ratio of inhibition also when compared with ketoconazole, but the results showed that the crude extract of *T.harzianum* showed the greatest inhibiting activities toward the tested fungi especially at the concentrations 1 and 2 mg/ml, in which the ratio of inhibition reached 100% at the concentration of 2mg/ml against all the tested fungi, and this extract must be take many test to could be used as one of the most active and potent biological control means against the human pathogenic fungi.

Keywords: *Trichoderma harzianum* , *T. viride*, external extract, Trichophyton, Ketoconazole .

Ascomycota

Trichoderma

Corn Meal Dextrose Agar (CMD)

Potato Dextrose Agar (PDA)

T. viride, *Trichoderma narciss* ,

° 25-30

.(Harman, 2006) *T.harzianum*

Biocontrol

Sclectium

Penicillium spp. *Fusarium* spp. *Aspergillus niger*

. (Muhmmad and Amusa, 2003; Yedidia *et al.*, 1999) *Pythium* spp. *rolfsii*

.....*Trichoderma harzianum*

(1998)

Bjorkman

(2009) Singh Singh

Trichoderma

Trichoderma

Protease

Cellulase

Hemicellulase

polysaccharide

.(Verma *et al.*, 2007)

Trichoderma

T. viride *Trichoderm harzianum*

Trichophyton

,)

(,

.(Emmons *et al.*, 1997) (10%) KOH

(70%)

()

KOH

(X40)

Chloramphenicol

(SGA) Sabroud Glucose Agar

28±2C°

(Clayton and Midgley, 1989)

(Beneke and Rogers,1970; Baron *et al.*, 1994)

14 30° C Corn Meal Agar (CMA)

Trichophyton Agar

.(De Hoog and Guarro, 1995)

Trichoderma

(T.h) *T.harzianum* *Trichoderma*

Eziashi . / (T.v) *T.viride*

14 T.h. T.v. (2007)

(PDB)

(/)

(DMSO) Dimethyl sulphoxide

(2 1 0.5 0.1 0) $N_1V_1=N_2V_2$ (/)

. SGA /

14 () 5

14 (28 ± 2 C)

.(*Kwon-chung* and Bennett, 1992; Pitt and Hocking, 1997) ()

)

Trichophyton mentagrophytes (*Tinea circinata* *Tinea capitis*
T. rubrum *T. terrestre* , *T. schoenleinii* , *T.verrucosum*

T. mentagrophytes

.....*Trichoderma harzianum*

(CMA)

Trichophyton

T. rubrum

. Trichophyton Agar

(T.h.) *Trichoderma harzianum*

(2)

(1)

(/) 2

%100

T. rubrum

/ 2

%100

%100

(1)

T. verrucosum

. / 1

(T.h.) *Trichoderma harzianum*

: 1

. Trichophyton

	(\)				
	0.1	0.5	1	2	
<i>Trichophyton mentagrophytes</i>	5	3.1	0.8	0	7.5
<i>T. rubrum</i>	3	1.7	0	0	7.5
<i>T. schoenleinii</i>	6.5	3.2	1	0	7.5
<i>T. terrestre</i>	5	2.9	1	0	7.5
<i>T. verrucosum</i>	1.9	1.1	0	0	7.5

*

Trichoderma harzianum

: 2

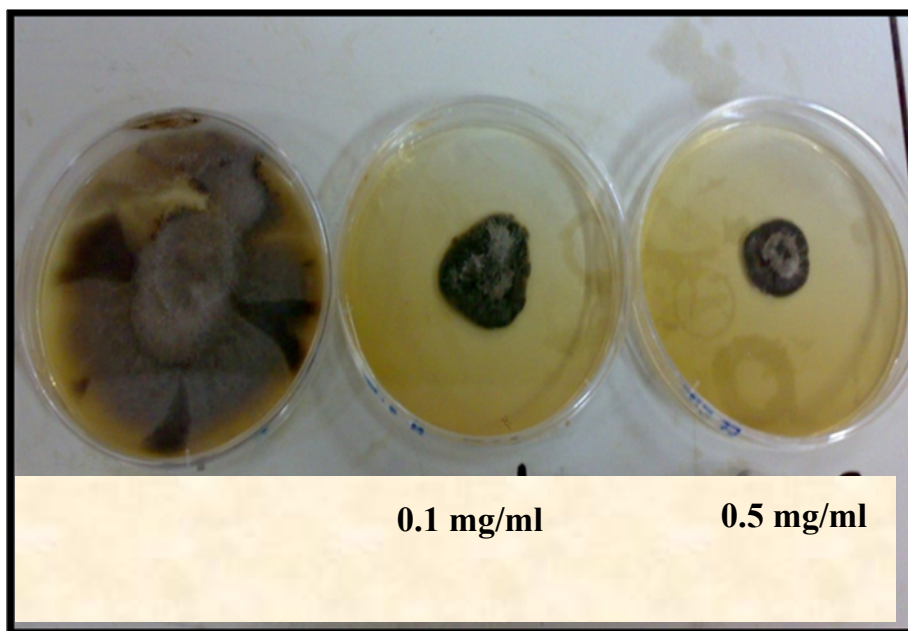
	%				
	0.1	0.5	1	2	
<i>Trichophyton mentagrophytes</i>	33.33 b	61.33 c	86.66 d	100 e	0 a
<i>T. rubrum</i>	59.78 b	77.21 c	100 d	100 e	0 a
<i>T. schoenleinii</i>	12.41 b	57.1 c	87.03 d	100 e	0 a
<i>T. terrestre</i>	32.97 b	58.88 c	89.27 d	100 e	0 a
<i>T. verrucosum</i>	74.42 b	86.08 c	100 d	100 e	0 a

(/)

T. harzianum

*

*

*Trichophyton verrucosum**T. harzianum*

:1

(*T.h*) (2)

0.1 *T.mentagrophyton* *T.terrestre*

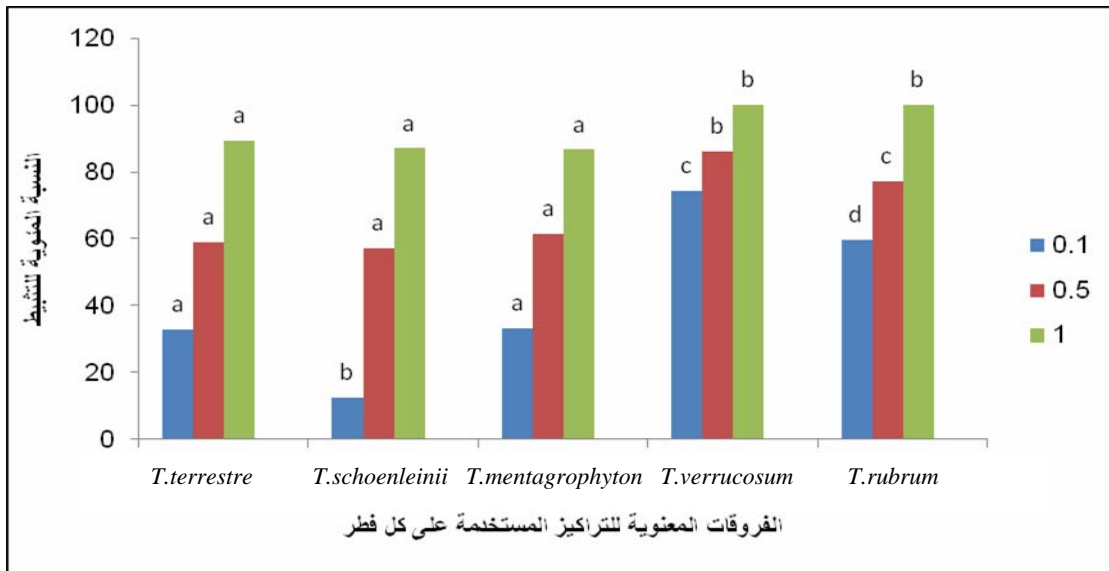
(/ 1 0.5) /

(/ 2)

T.mentagrophyton *T.schoenleinii* *T.terrestre*

100

/ 2 (1)



. *Trichoderma harzianum*

:2

(*T.h*) *Trichoderma viride*

(3)

(*T.v*)

(*T.h*)

(4)

%86.66 (/ 2)

T. schoenleinii %68.27 *T. rubrum* %98.65 *Trichophyton mentagrophyts*

(*T.v*)

T. verrucosum

% 100

T. terrestre

%86.59

(3) *T. rubrum*

T. verrucosum

Trichoderma viride

:3

.Trichophyton

	(\)				
	0.1	0.5	1	2	
<i>Trichophyton mentagrophytes</i>	6.8	5	3	1	7.5
<i>T. rubrum</i>	5.2	4	3.5	0.1	7.5
<i>T. schoenleinii</i>	7.5	5.5	4.3	2.5	7.5
<i>T. terrestre</i>	6	5	2	1.1	7.5
<i>T. verrucosum</i>	1	0.7	0.6	0	7.5

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Trichoderma viride

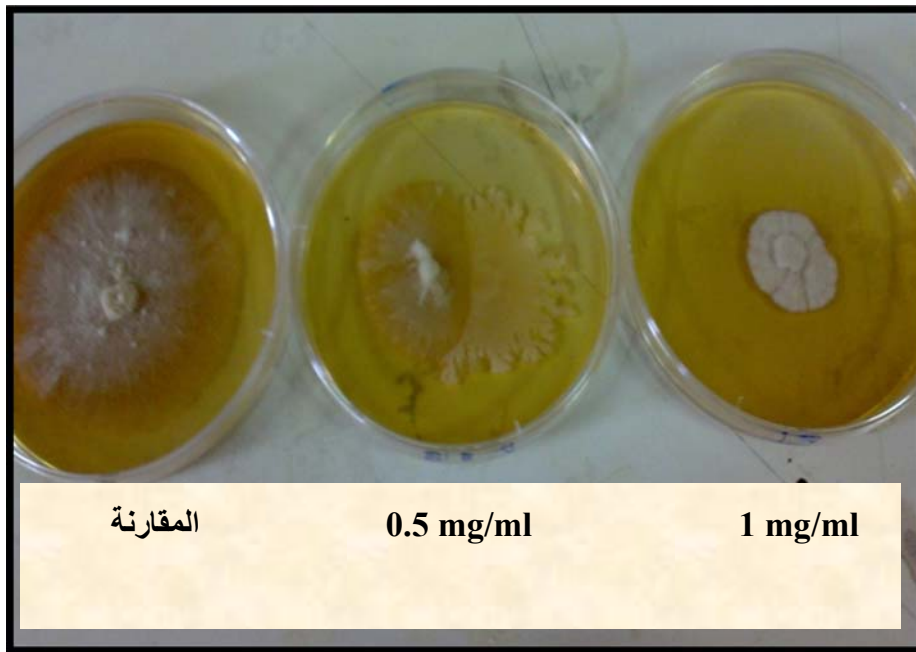
:4

	%				
	0.1	0.5	1	2	
<i>Trichophyton mentagrophytes</i>	.339 b	33.33 c	60 d	86.66 e	0 a
<i>T. rubrum</i>	29.98 b	46.16 c	52.88 d	98.65 e	0 a
<i>T. schoenleinii</i>	3.03 b	28.06 c	42.78 d	68.27 e	0 a
<i>T. terrestre</i>	19.55 b	32.96 c	73.18 d	86.59 e	0 a
<i>T. verrucosum</i>	86.54 b	90.58 c	91.92 d	100 e	0 a

.(/)

T. viride

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Trichophyton rubrum *T. viride* :3

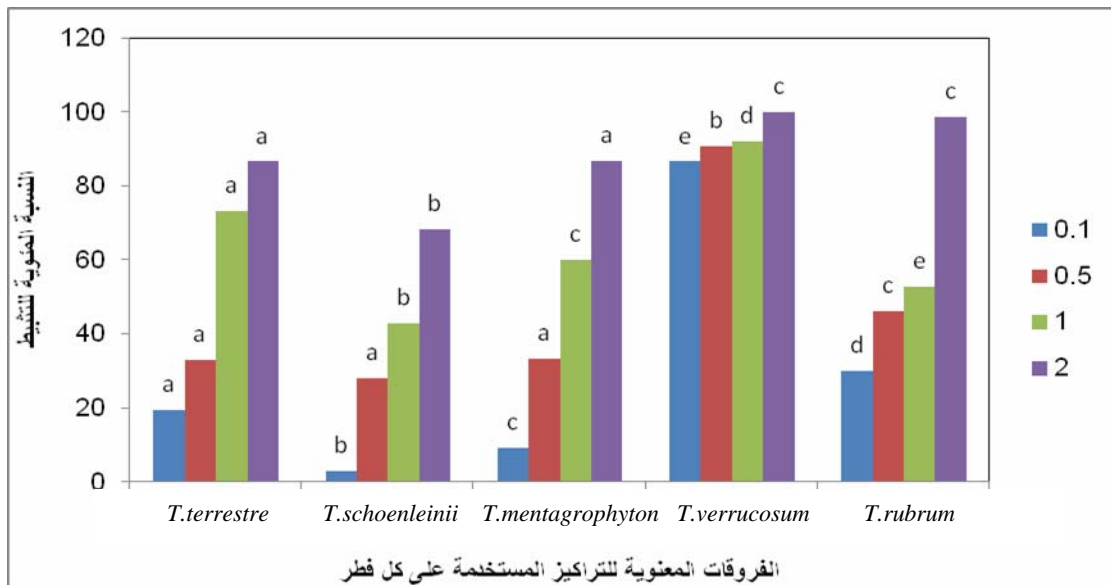
((4))

/ 0.5 / 1 0.1

T.mentagophytes *T.schoenleinii* *T.terrestre*

(/ 2)

T.verrucosum *T.rubrum* *T.mentagophytes* *T.terrestre*



Trichoderma viride

:4

Ketoconazole

(T.v T.h)

(5)

(6)

()

%91.11 / 2

Ketoconazole

%94.64 *T.schoenleinii* %91.06 *T.rubrum* %56.93 *T.mentagrophytes*

T.verrucosum %91.92 *T.terrestre*

Trichophyton

ketoconazole

:5

	/ ketoconazole				
	0.1	0.5	1	2	
<i>Trichophyton mentagrophytes</i>	2.3	1.4	1	0.7	7.5
<i>T. rubrum</i>	5.1	4	3.9	3.2	7.5
<i>T. schoenleinii</i>	2.1	1.4	1.1	0.7	7.5
<i>T. terrestre</i>	3	2	0.8	0.4	7.5
<i>T. verrucosum</i>	2	1.4	1.2	0.6	7.5

Ketoconazole

:6

	%				
	0.1	0.5	1	2	
<i>Trichophyton mentagrophytes</i>	.3369 b	.3381 c	7.118 d	91.11 e	0 a
<i>T. rubrum</i>	31.35 b	46.61 c	46.61 d	56.93 e	0 a
<i>T. schoenleinii</i>	70.51 b	81.23 c	86.14 d	91.06 e	0 a
<i>T. terrestre</i>	59.79 b	73.18 c	89.27 d	94.64 e	0 a
<i>T. verrucosum</i>	73.1 b	81.17 c	83.86 d	91.92 e	0 a

.(/)

Ketoconazole

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*

.....*Trichoderma harzianum*

(*T.h*)

. *Ketoconazole* (*T.v*)

T.rubrum *Ketoconazole* (*T.v*)

Trichoderma harzianum *T.verrucosum*

T.viride

Trichoderma

: *Trichoderma*

Rhizoctonia solani, Pythium aphanidermatum, Fusarium oxysporum, Sclerotium rolfsii,

(Inbar *et al.*, 1994) *Gaeumannomyces graminis var. tritici*

Ghisalberti and 1991) lytic enzymes

T. viride (2010) Rajendiran (Sivasithamparam,

(1996) Jensen .*A. fumigates A.flavus Aspergillus niger*

T. harzianum *Trichoderma*

Trichoderma *Pythium Altanaria Fusarium*

Rhizoctonia Pythium

(2005) Omero (Ruocco *et al.*, 2009)

Trichophyton *Trichoderma virens NRAL 26672*

. *T.rubrum* *rubrum*

T.harzianum

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