

Sinorhizobium meliloti
Medicago sativa

(2010 / 8 / 16 2010 / 6 / 8)

Ruta graveolens L.

38.6 47.5

Rhizobium Minimal Mediam

24 12.3 27.7

595

S. meliloti

Sinorhizobium meliloti

Manitol Salt Yeast Extract (MSY)

(RMM)

48

(

Nitrogen Free (NF)

Sinorhizobium meliloti :

**Effect of Extract Callus Plant Rue on the Growth of Bacteria
Sinorhizobium meliloti and its Relationship with
Plant Alfalfa *Medicago sativa***

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ABSTRACT

The disparate impact of extract callus plant *Ruta graveolens* L.(rue) on the growth of bacteria *Sinorhizobium meliloti* in the nutrient medium, as noted its effect inhibitory on the growth of bacteria in the medium of Manitol Salt Yeast Extract (MSY) liquid in terms of numbers tend to decrease by 47.5 and 38.6%, as shown by its effects as an energy source when you add it to the medium of nutritional deficiencies *Rhizobium* Minimal Medium (RMM) instead of sugar Mannitol and increasing the bacteria by 27.7 and 12.3%, after 24 and 48 hours of incubation compared to a sample comparison (bacteria developing in the nutrient medium without the addition of extract), in terms of measuring the turbidity at the spectral wavelength 595 nm, in the other hand, this extract inhibited the formation of root nodules on alfalfa seedlings inoculated with the bacterium *S. meliloti* developing in the middle (NF) Nitrogen Free solid, also reduced the number of vegetative branches , and leaves, with the death of some of seedlings and low protein content, but at the same time, led to a higher level in the inoculated seedlings compared to sample comparison.

<i>Rhizobium</i>	Rhizobiaceae	<i>Sinorhizobium meliloti</i>
(1.2 0.5)		(De Lajuide <i>et al.</i> , 1994)
	(Graham, 1998)	
	(Arias <i>et al.</i> , 1982) <i>Rhizobium meliloti</i>	.(Burdass, 2002)
Young,) <i>Ensifer meliloti</i>		(De Lajuide <i>et al.</i> , 1994) <i>Sinorhizobium meliloti</i>
(Casida, 1982)		<i>Ensifer</i> spp. (2003)
	(Stougaard, 2000)	
<i>Trigonella</i>	<i>Melitus</i>	<i>Medicago sativa</i>
		. (Hirsch <i>et al.</i> , 2001)

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(2000) Rutaceae *Ruta graveolens* L.

Acridone (Bowen *et al.*, 1988)

(Staba, 1982)

Dictamnine

.(2006)

S. meliloti

Dictamnine

S. meliloti

Medicago sativa

Sinorhizobium meliloti

/

FA8

S. meliloti

.(2005)

***S. meliloti*, FA8**

Mannitol Salt Yeast Extract (MSY) medium

Rhizobium

(Khanuja and Kumer, 1989)

(Singh *et al.*, 1984) Minimal Medium (RMM)

Medicago sativa

(Burdass,

%70

M. sativa

NaOCl

%3

10

2002)

NF ³ 50

(New Brunswick

/ 100 (15)

° 2 ±25

Scientific, Co. Inc. Edison, N.J., USA)

/ 16

3000 8

Ruta graveolens

/

(Murashige and Skoog, 1962) Murashige & Skoog (MS)medium
 .(2006) / 0.5 Benzyladenine (BA):2.0Naphthalene acetic Acid (NAA)

S. meliloti

0.1 /³ 9.9 ³ 25 MSY
 (20 1 121) (³ / 200) ³

S. meliloti ()

° 2 ± 30 (New Brunswick Scientific, Co.Inc. Edison, N.J., USA)

Spectrophotometer 18

.(2005) 595

S. meliloti

NF

M. sativa

(/ 6) NF

(³ 15 -10) *S. meliloti*

3-2

M. sativa

.(Lowry *et al.* , 1951) NF

S. meliloti

MSY

R. graveolens (1)

% 38.6 47.5 48 24 595

.()

.....

S. meliloti *R. graveolens* :1
 48 24 595 MSY

(595)				
	%			()
0.52	47.5	1.53	1.69	24
0.59	38.6	1.14	1.81	48

S. meliloti

RMM

RMM

% 21.3 27.7

S. meliloti

% 94.6 75.3

Spectrophotometer

48 24

.(2) 595

S. meliloti

R. graveolens

:2

RMM

(595)				
	%			()
0.51 (0.53)	27.7 (75.3)	0.47 (0.97)	0.13 (0.73)	24
0.55 (0.58)	21.3 (94.6)	0.61 (0.93)	0.13 (0.88)	48

. / RMM

M. sativa

NF

(B A 1) (3)

S. meliloti

M. sativa

(D C 1)

/ 3.5 3.0

/ 3.6

(F E 1)

% 72.2

% 83.3

M. sativa

Ruta graveolens

:3

S. meliloti

					%	<i>M. sativa</i>
/	/	/	/			
(3.0)2.95	5.4	2.2	0.0	0.0	0.0	
(3.5)3.52	15.9	6.5	2.0	3.0	82	+
(3.6)3.58	4.9	3.3	1.0	0.0	0.0	
(2.6)2.55	17.3	3.3	1.0	0.0	0.0	-

NF

: +

NF

: -

(1)



:1

NF	<i>S. meliloti</i>	-A
	A	-B
NF	<i>S. meliloti</i>	-C
	C	-D
NF	<i>S. meliloti</i>	-E
	E	-F

meliloti

(2002)

Sinorhizobium.(Denarie *et al.*, 1994)

(Odebiyi and Sofowora, 1979)

)

(2006) *Ruta graveolens*

YEM

S. meliloti

(2006

.(Sota and Fujiwaw , 1996)

(CH-CH₂)

RMM

(2006)

Dictamnine

meliloti

(C=N)

NF

S.

S. meliloti

(2006)

Rhizobium Sinorhizobium meliloti

.(2005)

leguminosarum bv. *Trifolii**Ruta graveolens* L.

.(2006)

.81-68 (10)17 .

Dictamnine

.2 .

.(2000)

Agrobacterium

.(2002)

rhizogenes R1601

Ruta

.(2006)

graveolens L.

.1 11 .

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