

*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* :



.....

(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 <sup>3</sup> 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 /<sup>3</sup> 9.9 <sup>3</sup> 25 MSY  
 ( 20 1 121) ( <sup>3</sup> / 200 ) <sup>3</sup>

*S. meliloti* ( )

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

Spectrophotometer 18

.(2005 ) 595

***S. meliloti***

NF

***M. sativa***

( / 6 ) NF

(<sup>3</sup> 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	-

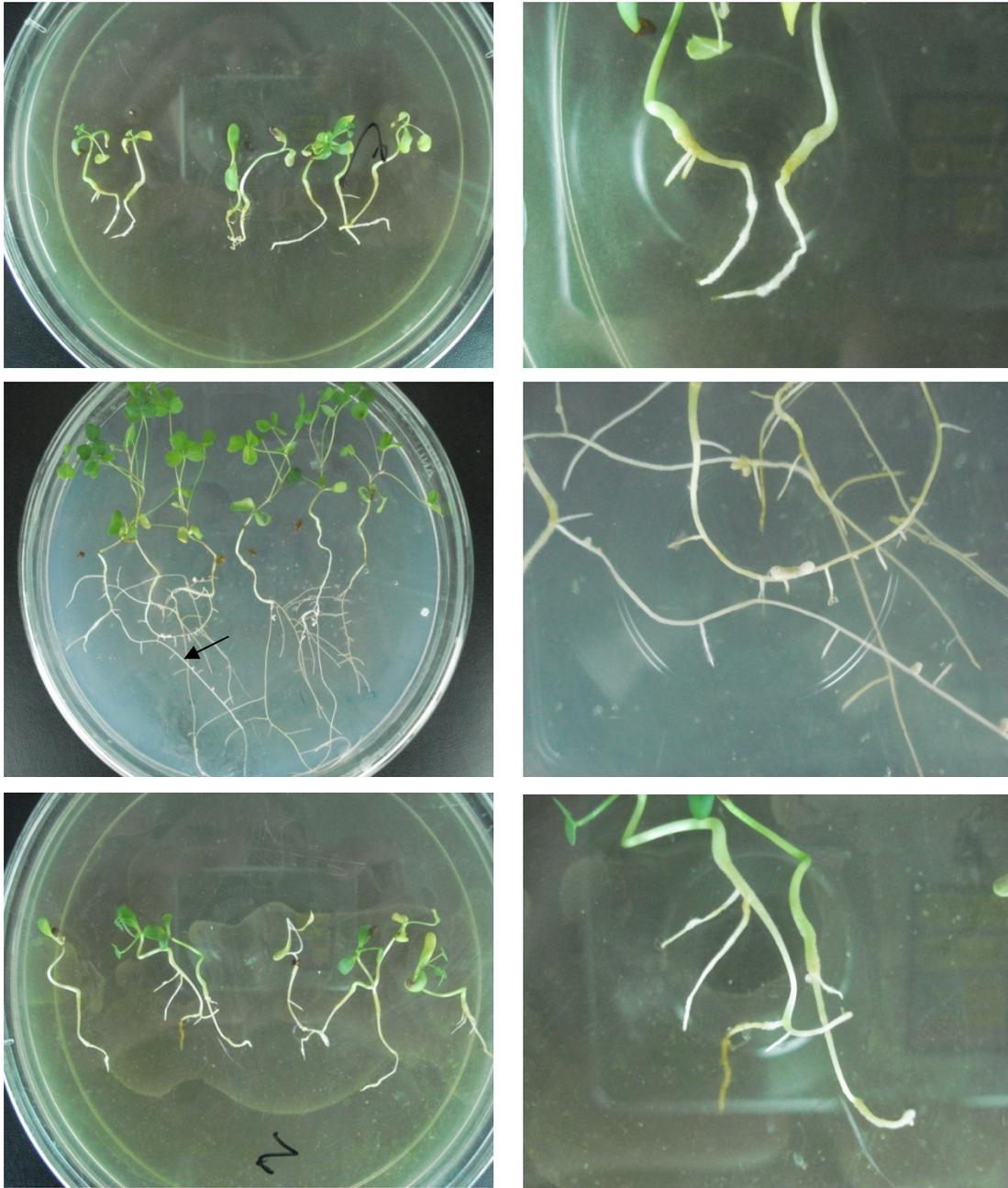
NF

: +

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-CH<sub>2</sub>)

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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