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(71) ( )  
○○  
315

(72) ○○  
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(74) ○○

:

(54) , 25(Pseudomonasa  
eruginosa25)( KCTC 0710BP) 25R(  
Pseudomonasaeruginosa25R)( KCTC 0709BP)

25(Pseudomonasaeruginosa25)( KCTC 0710BP)  
25R(Pseudomonasaeruginosa25R)( KCTC 0709BP) ,  
25 25R , (果)  
가 , .



richoderma (Fusarium oxysporium) 가 T  
70%

(Lycopersicum esculentumMill)

5(Pseudomonas aeruginosa25)

25R(Pseudomonas aeruginosa25R) 2

1999 12 7

KCTC 0710BP KCTC 0709BP

(Pseudomonas corrugata)

25(Pseudomonas aeruginosa25)

25 , 25

(rifampicin) 200ppm  
25R(Pseudomonas aeruginosa25R)

25

25R

25

5g 200Ml

5g

200Ml

100Ml

5

King's B

1

as corrugata)

24

King's B

150rpm

(nutrient broth)

가

(Pseudomon

38

. 10 mM - phosphate buffer

2

108cell/Ml

100rpm, 25

48

, 5,000rpm

25

eruginosa), API20NE kit, 85%, 1, (Pseudomonas a  
 25( KCTC 0710BP)  
 1999. 12. 7.

[ 1 ]

	25	
-		
-		
		ND
		ND
		ND
		ND
VP		ND
42		
( 80 가 )		ND
		ND
		ND

(ND Bergey's manual )

1 , Bergey's manual

가 가

25R

가 가

5Mℓ nutrient  
 550nm

가 ,

, 30 , 150rpm 16

50ppm

25 가 .  
 , 5Mℓ nutrient 30 , 150rpm 16 , 50μℓ  
 2 4 550nm 가 0.3 - 0.5가 . 1.5 Mℓ  
 5,000rpm 5 1.2Mℓ , , 50ppm 가 nutrient  
 , , . 7 30 , 100ppm, 200pp  
 m

25 550nm 가 0.3 0.5  
 , , 5ppm 가 50Mℓ nutrient 500μℓ 3  
 0 , 150rpm 7 , ,  
 2 가 50Mℓ nutrient 30 , 150rpm 16  
 . 100, 200ppm .

가 가 가 nutrient 4  
 200ppm 가 nutrient .

. 25 200ppm 25R , 1999. 12. 7.  
 25R( KCTC 0709BP)

(colony) 2 4 가 . 25 25R

[ 2 ]

	colony ( × 10 <sup>11</sup> / Mℓ ) <sup>x</sup>	
	25	25R
	9.6 ± 4.8	4.6 ± 2.0
	6.9 ± 2.6	6.9 ± 3.6
	0	7.3 ± 2.3
	0	0

(<sup>x</sup> 30 , 16 ) 30 . 150rpm 10

25 25R ,

porumf. sp.radicis - lycopersici, Fusarium oxysporumf. sp.cucumerinum, Nectria radicola, F.oxys  
 25 , 100rpm 7 , 4 cheese cloth V8  
 8,000rpm 10 , 106  
 Hemacytometer Mℓ 106 . 25  
 25R nutrient 30 , 150rpm 48 0.22μm  
 hemacytometer 90μℓ 10μℓ 3 16  
 2 nutrient 3  
 가 3

[ 3 ]

	x ( )y (%)		
	Foc.	Forl.	N. radicola
	94.3 ± 2.4	97.6 ± 1.4	97.7 ± 1.6
	97.7 ± 2.1(0)	96.5 ± 0.9(0)	96.9 ± 2.0(0)
25	35.9 ± 14.4(63.3)	39.5 ± 10.2(59.1)	0.0 ± 0.0(100)
25R	30.4 ± 10.9(68.9)	53.5 ± 22.3(44.6)	0.0 ± 0.0(100)

(x 25 , 16 hemacytometer 3 100

y (%) = "( " - ) ] /

( ) × 100 )

3 , 25 Fusarium oxysporumf. sp.cucumerinum 63.3%  
 F.oxysporumf. sp.radicis - lycopersici 59.1% 25  
 (25R)  
 F.oxysporum Nectria radicola 100%

25R nutrient 5,000rpm 108cfu/Mℓ  
 70 100 Mℓ  
 25

150rpm 36 25R 5,000rpm 25R King's B 25  
 T93' 1998 7 11 7 : 3 108 cfu/Mℓ  
 9cm 1/2  
 108cfu/Mℓ

4 15cm 160cm 10 12 12 14  
 1 1 1 3  
 1.5g 100Mℓ 150rpm 20 가 Pseudomonas agar(Difc)

o ) 42  
 50 µg/Mℓ, 50 µg/Mℓ 가  
 dt ) ( ) , Vapodest - 40(Gerhar  
 BC ) , , , , Integra XM2(G  
 25R biomass가 가 4 25R  
 5 25R

[ 4 ]

	x	( )	(cm)	(cm)	(g)	(g)
	25R	3.0a <sup>x</sup>	4.3a	5.5a	1.7a	0.5a
		2.7a	3.4a	4.3a	1.1a	0.3a

(<sup>x</sup> 5% Duncan's Multiple Rage Test(DMRT) )

[ 5 ]

		( )	(cm)	(cm)	(g)	(g)
	25R	4.1a <sup>x</sup>	10.1a	6.9a	2.1a	1.0a
		4.1a	8.3a	5.7a	1.5a	0.4a

(<sup>x</sup> 5% DMRT )

, 25R 가 Mg, P,  
 가 K, Ca 가 6

[ 6 ]

	K(ppm)	Ca(ppm)	Mg(ppm)	P(ppm)	T - N(%)
25R	415a <sup>x</sup>	84a	34a	34a	2.5a
	406a	82a	33a	33a	2.5a

(<sup>x</sup> 5% DMRT )

, 25R 가  
 25R 1 , 7

[ 7 ]

	(mm)	(cm)	(cm)	(cm)
25R	8.5a <sup>x</sup>	39a	33a	6.9a
	9.7a	45a	37a	7.1a

(<sup>x</sup> 5% DMRT )

8

[ 8 ]

	K(ppm)	Ca(ppm)	Mg(ppm)	P(ppm)	T - N(%)
25R	163a <sup>x</sup>	201a	81b	35b	2.15a
	179a	172a	97a	39a	2.28a

(<sup>x</sup> 5% DMRT )

8 , Ca<sup>2+</sup> 가

가

9

가

, 25R

가

, 25R

26% 가

[ 9 ]

	(kg/10a)	(kg/10a)	(kg/10a)	(kg/10a)	(kg/10a)	(kg/10a)	(°Bx)
25R	5,399a(108)	4,810a(125)	318a(39)	18a	161a	91a	7.2a
	4,991a(100)	3,838a(100)	813b(100)	99a	191a	46a	6.9a

Pseudomonas가

25R

10

[ 10 ]

	8 12 (cfu/g)	10 12 (cfu/g)	12 16 (cfu/g)
25R	7.9 × 10 <sup>4</sup>	2.1 × 10 <sup>4</sup>	8.8 × 10 <sup>4</sup>

10

25R

10<sup>4</sup> cfu/g

25R 가

25

25R

가

(57)



1.

KCTC 0710BP).

25(Pseudomonas aeruginosa25)(

2.

eruginosa25R)(

25(Pseudomonas aeruginosa25)  
KCTC 0709BP).

25R(Pseudomonas a