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(72) ○○

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1

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(74) ○○

: ○○

(54)

17 S

aeruginosa) 17S . 가 (*Pseudomonas*
17S(*Pseudomonas aeruginosa* 17S) , 가
, 17
(*Pseudomonas aeruginosa*)
17S(*Pseudomonas aeruginosa* 17S) . 가
17S(*Pseudomonas aeruginosa* 17S) 가
가 17S (*Mycosphaer*
ella melonis) 15 .

17S(*Pseudomonas aeruginosa* 17S), ,

aeruginosa) 17S
 17S(*Pseudomonas aeruginosa* 17S)
 (*Pseudomonas aeruginosa*)
 17S(*Pseudomonas aeruginosa* 17S)
 (lipopolysaccharide) (elicitor)
 (Leeman , 1995).
 (Carroll , 1995; Moon , 1996; Rosales , 1995).
 (siderophore)
 uysens , 1996; Carroll , 1995; Seong , 1991; Seong , 1992). (B
 17S(*Pseudomonas aeruginosa* 17S)
 (*Pseudomonas aeruginosa*) *Pseudomonas* spp.
 (Busens , 1995; Buysens , 1996; Kurmar , 1992; M
 oon , 1996; Seong , 1991; Seong , 1992). (*Pythium aphanidermatum*),
 (*P. ultimum*), (*Fusarium oxysporum*)
 (siderophore) (Gam
 liel , 1993).
 가 , 7:3
 (*Pseudomonas fluorescens*) 10%
 가 (Gagne , 1993).
 (*Fusarium*) (Liu , 1995).
 (*Pseudomonas*)
 (Cho , 1998).
 가 (Paulitz, 1997).
 가 가 , 가
 (*Fusarium oxys*
 porium) (*Trichoderma*) 70%
 (Rattink, 1993), 가 (Paulitz, 1997),
 (*Pseudomonas aeruginosa*) 17S
 (*Fusarium oxysporum* f. sp. radis- lycopersici) 62% (*Nectri*
 a radicicola) 97.4% , 가 가
 100%
 가 , 17 가
 가 (*Pseudomonas a*

aeruginosa) 17S

aeruginosa) 17S (*Pseudomonas aeruginosa* 17S)
 (*Pseudomonas corrugata*)
aeruginosa) 17 (*Pseudomonas aeruginosa*) 17 (streptomycin) 200ppm 17S
uginosa 17S) (*Pseudomonas aer*

1.

5g 200Mℓ 100Mℓ 5 (King's) B 1 24 5g 200Mℓ (nutri ent broth) 가 (*Pseudomonas corrugata*) (King's) B 150rpm (nutri 38 (nutrient) 100rpm, 25 48 5,000rpm 10mM- 2 17 (*Pseudomonas aeruginosa*) API20NE (kit) 85% (Bergey's manual) (*Pseudomonas aeruginosa*) 17S(*Pseudomonas aeruginosa*1 17S) 가 (1). 가 (1).

2.

5Mℓ (nutrient) 가 30 , 150rpm 16 50ppm 550nm 17 가 50μℓ 5Mℓ (nutrient) 30 , 150rpm 16 가 0.3 0.5가 1.5Mℓ 5,000rpm 5 1.2Mℓ 가 0.3 0.5가 50ppm 가 (nutrient) .7 30 , 100ppm, 200ppm 17 550nm 가 0.3 0.5 5ppm 가 50Mℓ (nutrient) 500μℓ 30 , 1 50rpm 7 가 50Mℓ (nutrient) 30 , 150rpm 16 500μℓ 2 가 가 100ppm, 200ppm 가 가 00ppm 가 (nutrient) (nutrient) 4 가 2 17 200ppm 17S 4

가 (2).

3.

(*Mycosphaerella melonis*), 가 (*Sclerotinia sclerotiorum*), (*Rhizoctonia solani*), 가 (*Verticillium dahliae*), (*Didymella bryoniae*), (*Bipolaris coicis*), (*Alternaria solani*), (*Botrytis elliptica*), (*Sclerotinia sclerotiorum*), (*Sclerotinia sp.*), (*Botrytis cinerea*), (*Rhizoctonia solani*), (*Phytophthora capsici*), (*Magnaporthe grisea*), (*Phytophthora infestans*) PDA, YDA, V8
 9cm (petridish) 가 17S(*Pseudomonas aeruginosa* 17S) x100]
 (3). 가
 17S(*Pseudomonas aeruginosa* 17S) 가 15
 YDA

4.

17S(*Pseudomonas aeruginosa* 17S) (3g, 2.5g, 5g, 1) 28 , 150rpm 72 () ()
) 72
 3 , 10⁸ cfu/Mℓ (*F. oxysporum* f. sp. *lycopersici*), (*Phytophthora capsici*) 10% (sucrose) 가 2 121
 25 2g 1 (*Pseudomonas aeruginosa* 25R, 17S) (*Pseudomonas aeruginosa* 25R) 53% (*Pseudomonas aeruginosa* 17S)
 가가 100% 13%
 가 가 100%

5.

17S 5,000rpm , 10⁸ cfu/Mℓ 70
 100Mℓ
 25 17S 17S
 (King's) B 25 150rpm 36 5,000rpm 17S
 10⁸ cfu/Mℓ T93' (1998 7 11)
 7:3 9cm
 10⁸ cfu/Mℓ 1/2 1 , 1 , 1
 3 1.5g 100Mℓ 150rpm, 20
 가 가(Pseudomonas agar, Difco) 42
 가 50μg/Mℓ, 50μg/Mℓ
 17S(*Pseudomonas aeruginosa* 17S) 가
 가 17
 S(*Pseudomonas aeruginosa* 17S) 10⁸ cfu/Mℓ
 17S(*Pseudomonas aeruginosa* 17S) 10⁶ cfu/Mℓ 가 가

6.

T93 1 17S(*Pseudomonas aeruginosa* 17S)
 5 (Laskin)(1989) (salicylic acid) 1g
 90% 10Mℓ 18,000g 1
 5 100% 5Mℓ
 18,000rpm 40 5%(wt/vol)
 (trichloroacetic acid) 5Mℓ 10Mℓ (ethy
 acetate - cyclopentane - isopropanol)(50:50:10) 가
 0.5Mℓ , 0.6Mℓ/min
 (colum) C 18 (Lichrosorb RP- 18 10micron, 25cm)
 (excitation) 314nm (emission) 406nm
 6 (salicylic acid
 : SA) (White 1994). SA (SAR marker protein) , SA (Yalpani , 1991).

25R) SA 17S(*Pseudomonas aeruginosa* 17S) (T93 (17S(*Pseudomonas aeruginosa* 17S) 25R(*Pseudomonas aeruginosa* 25R) SA (*Pseudomonas aeruginosa* 25R)) 17S(*Pseudomonas aeruginosa* 17S) SA 가 (5). 17S(*Pseudomonas aeruginosa* 17S) SA 가 가 가 가 17S(*Pseudomonas aeruginosa* 17S)가 (KCTC: KOREAN COLLECTION FOR TYPE CULTURES) (20 01.3.30) .(: KCTC 0978BP)

(*Pseudomonas aeruginosa* 17S) 가 17S(*Pseudomonas aeruginosa* 17S) (salicylic acid) 가 가 가 가

[1]

	(17S)	x
-		
-		
		ND
		ND
		ND
		ND
		ND
VP		ND
42		
(80 가)		ND
		ND
		ND

*ND (Bergey's manual)

[2]

, 가 ,		17S					
		(cfu/M ℓ)	(cm)	(mm)	(g)	(%)	(cfu/g)
(7:3)		10 ⁸	34.9 b*	4.4 a	32.5 b	6.5 a	4.5×10 ⁵
		10 ⁶	36.5 b	4.5 a	27.1 c	5.7 b	5.0×10 ⁵
		10 ⁴	32.9 b	4.6 a	27.4 c	6.0 ab	7.5×10 ⁴
			40.9 a	4.9 a	38.2 a	6.1 ab	-
	가	10 ⁸	21.1 a	3.0 a	20.2 a	7.3 a	5.0×10 ⁶
		10 ⁶	19.6 a	2.9 b	16.6 b	6.7 a	1.3×10 ⁵
		10 ⁴	19.9 a	3.0 ab	20.8 a	7.2 a	2.5×10 ⁵
			21.1 a	3.0 ab	16.1 b	5.5 b	-
		10 ⁸	18.5 b	2.7 b	8.1 b	7.2 a	1.8×10 ⁶
		10 ⁶	18.9 a	2.6 b	8.1 b	7.4 a	6.0×10 ⁵
		10 ⁴	21.2 a	3.0 a	11.9 a	7.6 a	6.0×10 ⁵
			21.3 a	2.9 ab	10.6 a	6.7 b	-
		10 ⁸	45.5 a	4.5 a	36.1 bc	10.1 a	3.3×10 ⁶
		10 ⁶	46.3 a	4.7 a	38.7 ab	9.8 a	5.8×10 ⁶
		10 ⁴	41.0 a	4.7 a	32.5 c	9.4 a	8.8×10 ⁵
			46.1 a	4.7 a	42.8 a	10.0 a	-
	가	10 ⁸	17.5 a	2.8 ab	13.1 a	10.4 a	3.0×10 ⁵
		10 ⁶	18.5 a	2.8 ab	13.3 a	10.4 a	1.5×10 ⁵
		10 ⁴	14.1 b	2.7 b	9.1 b	10.9 a	1.3×10 ⁴
			18.1 a	3.0 a	11.9 a	10.1 a	-
		10 ⁸	26.8 ab	3.2 a	12.5 b	10.1 a	5.8×10 ⁵
		10 ⁶	28.5 a	3.4 a	15.3 a	9.9 a	1.3×10 ⁶
		10 ⁴	25.6 b	3.3 a	13.1 b	7.6 a	-
			26.4 ab	3.2 a	12.0 b	8.9 a	-

* DMRT at 5% level

[3]

17S			
		(%)	
		PDA	YDA
	(<i>Mycosphaerella melonis</i>)	40	42
가	(<i>Sclerotinia sclerotiorum</i>)	27	40
	(<i>Rhizoctonia solani</i>)	36	34
가	(<i>Verticillium</i>)	39	44

(<i>Didymella bryoniae</i>)	30	36	22
(<i>Bipolaris coicis</i>)	48	41	35
(<i>Alternaria solani</i>)	38	39	27
(<i>Botrytis elliptica</i>)	45	44	33
(<i>Sclerotinia sclerotiorum</i>)	33	35	22
(<i>Sclerotinia sp.</i>)	37	28	19
(<i>Botrytis cinerea</i>)	33	39	40
(<i>Rhizoctonia solani</i>)	33	38	31
(<i>Phytophthora capsici</i>)	23	37	32
(<i>Magnaporthe grisea</i>)	26	40	56
(<i>Phytophthora infestans</i>)	37	37	33
* = (-) / × 100			

[4]

	*	(cm)	(g/)	(%)	(%)	가	(cfu/g)
	17S	41.8 b	6.0 ab	11.4 ab	0	100	2.4 × 10 ⁸
	17S+F	46.3 a	7.1 a	10.9 b	0	100	1.2 × 10 ⁸
	F	37.9 c	5.7 b	12.1 a	53	0	-
	17S	34.7 a	3.0 a	13.0 ba	0	100	2.1 × 10 ⁵
	17S+P	34.3 a	3.1 a	12.2 b	0	100	1.8 × 10 ⁵
	P	34.4 a	3.5 a	13.8 a	13	0	-
* LSD at 5% level							
* 25R :		25R					
17S :		17S					
F :		(<i>Fusarium oxysporum</i> f.sp. <i>lycopersici</i>)					
P :		(<i>Phytophthora capsici</i>)					

[5]

17S	SA
	(μg/g)
	17S
T93	5.5 7.0

(57)

1. 가 17S(KCTC 0978BP).
- 2.

1 ,

17S.

3.

1 2 ,
(salicylic acid) 가

17S.

4.

5.