Close

Web of Science
Page 1 (Records 1 -- 1)

Print

[1]

Record 1 of 1

Title: Influence of inoculation with plant growth promoting rhizobacteria (PGPR) on tomato plant growth and nematode reproduction under greenhouse conditions

Author(s): Almaghrabi, OA (Almaghrabi, Omar A.); Massoud, SI (Massoud, Samia I.); Abdelmoneim, TS (Abdelmoneim, Tamer S.)

Source: SAUDI JOURNAL OF BIOLOGICAL SCIENCES **Volume:** 20 **Issue:** 1 **Pages:** 57-61 **DOI:** 10.1016/j.sjbs.2012.10.004 **Published:** JAN 2013

Abstract: Numerous species of soil bacteria which flourish in the rhizosphere of plants or around plant tissues stimulate plant growth and reduce nematode population by antagonistic behavior. These bacteria are collectively known as PGPR (plant growth promoting rhizobacteria). The effects of six isolates of PGPR Pseudomonas putida, Pseudomonas fluorescens, Serratia marcescens, Bacillus amyloliquefaciens, Bacillus subtilis and Bacillus cereus, were studied on tomato plant growth and root knot nematode reproduction after 45 days from nematode infection. The highest number of shoot dry weight/g (43.00 g) was detected in the plant treated with S. marcescens; then P. putida (34.33 g), B. amyloliquefaciens (31.66 g), P. fluorescens (30.0 g), B. subtilis (29.0 g), B. cereus (27.0 g) and nematode alone (untreated) 20 g/plant. While the highest number of plant height was observed when plant was treated with S. marcescens, P. fluorescens, P. putida, B. amyloliquefaciens and P. putida 52.66, 50.66, 48 and 48 cm respectively. No significant differences were seen between previous treatments but only had significant differences compared with untreated plant. The highest number of fruit/plant was observed when plants were treated with S. marcescens (10.66), then B. amyloliquefaciens (8.66), P. putida (8), P. fluorescens (8) and B. cereus (7.66). No significant differences between the last 4 treatments, but all had significant differences compared with untreated plants. The highest weight of plant yield (g) was observed with S. marcescens (319.6 g/plant) and the lowest weight of plant yield was observed in plants treated with nematode alone (untreated). On the other hand, the lowest numbers of J(2)/10 g of soil (78), galls/root, (24.33) galls/root, egg masses/root (12.66) and egg/egg masses were observed in the plants treated with S. marcescens. (C) 2012 King Saud University. Production and hosting by Elsevier B.V. All rights reserved.

Accession Number: WOS:000312959300008
PubMed ID: 23961220
Language: English
Document Type: Article
Author Keywords: PGPR; Meloidogyne; Biological control; Rhizobacteria; Pseudomonas
KeyWords Plus: INDUCED SYSTEMIC RESISTANCE; BIOLOGICAL-CONTROL; FIELD CONDITIONS; MELOIDOGYNE-INCOGNITA; PSEUDOMONAS; BIOCONTROL; BACTERIA; RHIZOSPHERE; POPULATIONS; PATHOGENS

Addresses: [Almaghrabi, Omar A.; Abdelmoneim, Tamer S.] King Abdulaziz Univ, Fac Sci, Dept Biol, Jeddah 21454, Saudi Arabia.
[Massoud, Samia I.; Abdelmoneim, Tamer S.] Suez Canal Univ, Fac Agr, Dept Agr Bot, Ismailia, Egypt.
Reprint Address: Almaghrabi, OA (reprint author), King Abdulaziz Univ, Fac Sci, Dept Biol, POB 15758, Jeddah 21454, Saudi Arabia.
E-mail Addresses: omar.almaghrabi@yahoo.com
Author Identifiers:

Author	ResearcherID Number	ORCID Number
Abdelmoneim, Tamer	H-9633-2012	0000-0002-2992-419X
Fac Sci, KAU, Biol Sci Dept	L-4228-2013	
Faculty of, Sciences, KAU	E-7305-2017	

Publisher: ELSEVIER SCIENCE BV
Publisher Address: PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS
Web of Science Categories: Biology
Research Areas: Life Sciences & Biomedicine - Other Topics
IDS Number: 062YB
ISSN: 1319-562X
29-char Source Abbrev.: SAUDI J BIOL SCI
ISO Source Abbrev.: Saudi J. Biol. Sci.
Source Item Page Count: 5
Open Access: gold
Output Date: 2017-07-20

Close

Web of Science
Page 1 (Records 1 -- 1)

Print

[1]