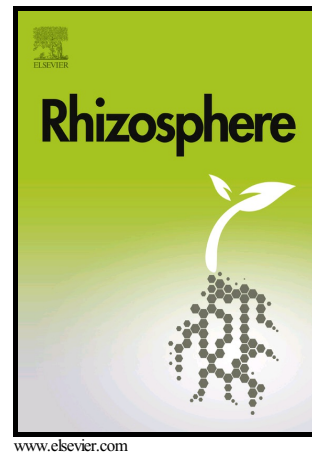


Author's Accepted Manuscript

Field application of two plant growth promoting rhizobacteria with potent antifungal properties

Sunrit Basu Sarbadhikary, Narayan Chandra Mandal



PII: S2452-2198(16)30156-2
DOI: <http://dx.doi.org/10.1016/j.rhisph.2017.04.014>
Reference: RHISPH58

To appear in: *Rhizosphere*

Received date: 28 November 2016
Accepted date: 24 April 2017

Cite this article as: Sunrit Basu Sarbadhikary and Narayan Chandra Mandal
Field application of two plant growth promoting rhizobacteria with potent
antifungal properties, *Rhizosphere*
<http://dx.doi.org/10.1016/j.rhisph.2017.04.014>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and a review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain

Field application of two plant growth promoting rhizobacteria with potent antifungal properties

Sunrit Basu Sarbadhikary^a and Narayan Chandra Mandal^{b*}

^aUGC-JRF, Mycology and Plant Pathology Laboratory, Department of Botany, Visva-Bharati, Santiniketan 731235, West Bengal, India

^bProfessor, Mycology and Plant Pathology Laboratory, Department of Botany, Visva-Bharati, Santiniketan 731235, West Bengal, India

sunrit.tapu2016@gmail.com

mandalnc@rediffmail.com

mandalnc@rediffmail.com

*Corresponding Author: Prof. Narayan Chandra Mandal, Professor, Mycology and Plant Pathology Laboratory, Department of Botany, Visva-Bharati, Santiniketan 731235, West Bengal, India. Telephone Number: +91-9434016026.

ABSTRACT

Two bacterial strains VBLR10 and VBLR39 were identified for their anti-fungal properties from the rhizosphere of healthy *Solanum lycopersicum* (tomato) plants in a wilt infested field of Binuria, West Bengal and showed maximum sequence similarities with *Bacillus subtilis* and *Cellulosimicrobium cellulans* respectively in 16s rRNA gene sequence homology. The strains showed excellent plant growth promoting activities in small field trials and antifungal activity in the laboratory against *Alternaria alternata*, *Helminthosporium oryzae*, *Penicillium digitatum* and *Fusarium oxysporum* producing prominent zones of inhibition on agar. Cell free supernatants of both VBLR10 and VBLR39 could reduce radial mycelial growth of *Fusarium oxysporum* when they were used to poison the growth medium. VBLR39 was also found to produce siderophore in a qualitative assay. Both strains survived for more than one year in alluvial soil sample at 28°C and at 37°C. The efficiency and applicability of the strains

Download English Version:

<https://daneshyari.com/en/article/5762863>

Download Persian Version:

<https://daneshyari.com/article/5762863>

[Daneshyari.com](https://daneshyari.com)