Biotechnologies towards Sustainable Development in Malaysia

Zarina Zainuddin

IIUM PRESS
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

Biotechnologies towards Sustainable Development in Malaysia

Zarina Zainuddin

IIUM Press

Published by:
IIUM Press
International Islamic University Malaysia

First Edition, 2011

Perpustakaan Negara Malaysia Cataloguing-in-Publication Data

Zarina Zainuddin
Biotechnologies towards Sustainable Development in Malaysia
Zarina Zainuddin
Include index
Bibliography: p. 149

ISBN: 978-967-418-200-7

Member of Majlis Penerbitan Ilmiah Malaysia – MAPIM
(Malaysian Scholarly Publishing Council)

Printed by :
IIUM PRINTING SDN. BHD.
No. 1, Jalan Industri Batu Caves 1/3
Taman Perindustrian Batu Caves
Batu Caves Centre Point
68100 Batu Caves
Selangor Darul Ehsan

Table of Contents

Chapter 24

In Planta Agrobacterium tumefaciens transformation of MR 219 rice

[*]Zaima Azira Zainal Abidin and Rabiah Abdul Wahab

[*]*Corresponding author: zzaima@iium.edu.my*

Introduction

Rice is the most important staple food for a large part of the world's human population, especially in East Asia, Southeast Asia, South Asia, the Middle East, and the West Indies .As rice is of a great importance, improvement in rice varieties with increased resistance towards pests such as striped stem borers and yellow stem borers; and plant pathogens as well as enhanced tolerance to salt and cold stresses, will certainly help in the mass rice production. Significant advances have been made in rice biotechnology since the first transgenic rice plantlets were successfully generated in 1988 through PEG and electroporation method (Tyagi and Mohanty, 2000). Nevertheless, successful transformation of rice using *Agrobacterium* remained controversial until Hiei and co-workers (1994) reported an efficient *Agrobacterium*-mediated transformation protocol for japonica cultivars - Tsukinihikari, Asanohikari and Koshihikari. Since then, tremendous progress has been made in rice transformation technologies with efficient transformation protocols for rice (Yookongkaew *et a.l*, 2007; Bajaj and Mohanty 2005; Roy *et al.*, 2000).