

Global Summit on Plant Science

September 21-23, 2015 San Antonio, USA

Development of green formulation for dual purpose of disease management and plant development

Pushpa Agrawal

R. V. College of Engineering, India

The use of chemical fertilizers and pesticides in commercial farming gives the threat of gradual aggravation of soil fertility. Use of agriculturally important microorganisms in different combinations is the only solution for restoration of soils. The bioformulations using humic acid with suitable biocontrol microorganisms namely, *Pseudomonas fluorescens* and *Trichoderma harzianum* have been developed to replace chemical fertilizers. *Trichoderma harzianum* is a major biocontrol agent against a wide range of phyto-pathogenic organism of economically important crops and extensively used in various parts of the world for plant disease management. These biocontrol agents are also known to degrade complex organic molecules into simpler molecules which help to improve soil fertility. Humic acid is an organic fertilizer which enhances the plant growth. The bioorganic formulations have been developed for controlling or suppressing of fungal diseases (*Fusarium* species) as well as to increase the plant growth and yield by increasing the soil fertility in an eco friendly manner. The present report reveals an additive effect of microorganism with humic acid in both disease management and better plant growth. The results revealed that the *Trichoderma harzianum* with 2% humic acid based formulation was effective in inhibiting *Fusarium* growth in vitro. The liquid bioformulation of humic acid along with the *Pseudomonas fluorescens* was tested and compared for viability as well as its inhibitory characteristics against *Fusarium oxysporum*, a fungus which cause wilt of tomato. Cell viability tests were carried out for the bioformulations by plate count method. Field studies were conducted for two crop varieties-radish and tomato. The results of *in vivo* and *in vitro* studies revealed better support for the viable cells as well as leafing and fruit characteristic in pots kept in field.

Biography

Pushpa Agrawal has completed her PhD degree in the year 1984 from DAVV, Indore and Post-doctoral studies from Miami University, USA and India Institute of Science Bangalore, India. She is a Professor of Biotechnology and Dean, Post-graduate studies in Biotech and Chemical Engineering at R. V. College of Engineering, Bangalore India. Many scholars are pursuing and completed PhD under her guidance. She has presented over 100 research papers in conferences and published more than 40 papers in reputed journals. She has co-authored a book on biotechnology and chapters in 2 books and has been serving as Managing Editor and Editorial Board Member of reputed journals. She has also received various awards, honors and fellowships.

pushpa_agr@yahoo.co.in

Notes: