



SOME METHODS FOR QUALITY TESTING OF CYANOBACTERIAL BIOFERTIZERS

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ABSTRACT

Cyanobacteria are a large group of Gram- negative Prokaryotes that perform oxygenic photosynthesis. These Prokaryotes have ability to fix atmospheric nitrogen symbiotically as well as free living. These Prokaryotes uses sunlight as the source of energy for the fixation of nitrogen and therefore have potential as bio fertilizer. Availability of a good quality inoculants is a major constraint in popularization of cyanobacteria Taxonomic Characters of Cyanobacteria changes so drastically that reliable identification of species becomes difficult.

Key words : Cyanobacteria, Inoculants, Biofertilizers, Nitrogen Fixation, Taxonomy.

INTRODUCTION

Cyanobacteria (blue green algae or BGA) are unique in possessing the capacity of oxygenic photosynthesis. These prokaryotes have ability to fix atmospheric nitrogen symbiotically as well as free living. Nitrogen fixing cyanobacteria uses sunlight as the source of energy for the fixation of carbon and nitrogen and therefore have potential as biofertilizer. The composite inoculants consisting of cyanobacterial cultures viz. Nostoc, Anabaena, Calothrix, Tolypothrix, Oscillatoria and Scytonema have been used for inoculation in rice (Kannaiyan, 1993). The biofertilizer techniques of cyanobacteria are limited mainly due to the non-availability of good quality inoculants. Traditionally cyanobacteria have been distinguished on the basis of phenotypic properties, structure and physiology. Taxonomic characters change so drastically that reliable identification of species becomes difficult (Thajuddin *et*

al., 2002; Rajkumar, 2004 and Chillappa *et al.*, 2004). More importantly, the morphology of cyanobacteria in laboratory cultures is often considerably altered from the original morphology of environmental isolates and the diversity of strain within a culture may be reduced because of selective culturing condition. Many techniques have been used to study the phylogenetic perspectives, which are more reliable in cyanobacterial strain identification. These techniques could be effectively utilized in checking genetic purity of the strains.

Various methods for quality testing are tried but few rapid methods to ensure quality of inoculants are

MATERIALS AND METHODS

Visible and Planktonic samples were collected from various Ponds and Canals in and around Shamli Distt. M. Nagar (U.P.) using net and khurpi along with algal mat water samples were also collected and were analysed for Physicochemical and Biological parameters such as

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