

**INTERACTIVE EFFECT OF RICE FIELD HERBICIDE PROPANIL  
ON THE NITROGEN METABOLISM OF N<sub>2</sub>-FIXING  
CYANOBACTERIUM *NOSTOC LINCKIA***

**Gyanendra Kumar Dwivedi<sup>1</sup>, A.K. Pandey<sup>1</sup> and K.N. Mishra<sup>2</sup>**

*Received July 27, 2009 and Accepted September 11, 2009*

**ABSTRACT** : Nitrate (NO<sub>3</sub><sup>-</sup>) and ammonium (NH<sub>4</sub><sup>+</sup>) uptake in the N<sub>2</sub>-fixing cyanobacterium *Nostoc linckia* and interaction of rice field herbicide propanil was studied. N<sub>2</sub> grown cells scavenged extracellular NO<sub>3</sub><sup>-</sup> and NH<sub>4</sub><sup>+</sup>. Addition of herbicide propanil (10, 20 and 30 µg/ml) inhibited nitrate and ammonium uptake. Thus, the nitrate and ammonium uptake is sensitive to propanil and it provides enough ground to assume that all the energy and reductant dependent reactions will be subject to inhibition by such herbicide.

**Key Words** : Herbicide, propanil, Cyanobacterium, *N. linckia*, Nitrogen metabolism.