



## Improvement of Xylanase Activity of *Aspergillus* sp. by Physical and Chemical Mutagenesis

T. Venkatram Reddy, M. Rajashekhar<sup>1</sup>, N. Kishore and D. Madhusudan Reddy\*

Department of Microbiology,

<sup>1</sup>Department of Zoology, Palamuru University, Mahbubnagar- 509 001, India

\*E-mail: dadireddy@gmail.com

---

**Abstract:** A xylan-degrading enzyme (endo  $\beta$ -1, 4 xylanase, EC 3.2.1.8) cleaves  $\beta$ -1, 4 glycosidic bond to produce xylose and is useful mainly in bio bleaching paper pulp, pharmaceutical and food industries. The purpose of the present investigation is to enhance xylanase production by subjecting indigenous xylanase producing strain *Aspergillus niger* to improvement by random mutagenesis by ultra-violet (UV) irradiation and *N*-methyl-*N*-nitrosourea (NMU) treatment. Mutants were screened as xylanase producers on the reddish zone of enzyme activity formation in PDA xylan agar plates. UV-12 mutant showed activities of 204.25 for submerged fermentation (Smf). UV-12 further mutated by NMU to produced NMU-10 mutant. Compared to wild strain, NMU-10 mutant produce 6.5 fold more activities in Smf. Thus these findings have more impact on enzyme economy for biotechnological applications of microbial xylanase.

**Keywords:** Strain improvement, *Aspergillus niger*, UV-NMU mutation, Xylanase production

---