



A REVIEW

Morphological study of nitrogen fixers

Monalisa Panda¹, Ushashee Mandal¹, Saurav Barman² and Praveen Boddana*

Department of Plant Pathology, Centurion University of Technology and Management, Paralakhemundi (Odisha) India (Email: bpraveen@cutm.ac.in)

Abstract : Biological diversity, the common term of biodiversity, in the simplest word means the variation and variety of life forms. The biodiversity being the amalgamation of dual word *i.e.* ‘Bios’ meaning “Life” and ‘Diversitas’ meaning “Variety” or “Difference”. Nitrogen fixation on one hand and Photosynthesis on the other hand is the foundation of all the living system in this planet. Nitrogen fixation can be defined as a chemical process involving the conversion of atmospheric nitrogen into the nitrogenous compound, either biologically or physically. Biological Nitrogen Fixation (BNF) contributes about 90% of the process and rest 10% is carried out by the physical activities which include lightening, thunder, etc. Each and every year, approximately 17.2×10^7 tons of nitrogen are biologically fixed worldwide. The main contributors in BNF are the microorganisms which falls under two categories *i.e.* may be aerobic or anaerobic. Majority of the microbes do not have the potentiality to reduce nitrogen. The microorganisms having the potentiality of reducing nitrogen play a vital role in the nitrogen fixation along with nitrogen cycle in the nature. The microbes involved in BNF are usually the prokaryotes which make use of a biocatalyst or enzyme nitrogenise to bring about the catalysis of atmospheric nitrogen (N_2) to form ammonia (NH_3). These prokaryotes consists of aquatic organisms like blue green algae, free living nitrogen fixers like *Azotobacter*, *Clostridium*, symbiotic nitrogen fixers like *Rhizobium* and associative symbiotic includes *Azospirillum*. The current review paper delineates with reference to the morphological study of nitrogen fixers.

Key Words : Aerobic, Anaerobic, *Azotobacter*, Biological nitrogen fixation, Morphology, Nitrogenase, Nitrogen fixation, Prokaryotes, *Rhizobium*

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*** Author for correspondence :**

¹Department of Botany, School of Applied Sciences, Centurion University of Technology and Management, Bhubaneswar (Odisha) India

²Department of Soil Science and Agricultural Chemistry, M.S. Swaminathan School of Agriculture, Centurion University of Technology and Management, Paralakhemundi (Odisha) India