RESEARCH ARTICLE

RICE – *RHIZOBIUM* INTERACTIONS FOR BIOLOGICAL NITROGEN FIXATION: TECHNICAL CHALLENGES

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Abstract: Nitrogen is the most important nutrient input required for rice production. As most of the soil is deficient of N, N-fertilizers are needed. But, instead of chemical fertilisers, biological nitrogen fixation (BNF) is preferred. In that too, conventional BNF has limited capacity to render rice independent of external sources of N. Therefore, a major goal of BNF research has been to extend the nitrogen fixing capacity to rice. In this context, recent advances in understanding symbiotic *Rhizobium*-legume interactions at the molecular level, the discovery of natural endophytic interactions of rhizobacteria with rice, potentiality of rice nodulation, as well as potentiality of introduction / expression of *nif* genes in (to) rice has offered exciting opportunities to stretch rice research horizons, though there are technological challenges. These aspects have been reviewed in this article.

Keywords: Rice-*Rhizobium* interactions, Biological nitrogen fixation, Endophytic association, Nodulation in rice

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