

Technical Note

Effects of different rhizobium strains on nitrogen fixation of mungbean using ureide and ^{15}N abundance methods

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Abstract: The effects of different rhizobium strains on nitrogen fixation of mungbean were assessed by ureide and ^{15}N abundance methods. Three genotypes of mungbean (MJU3, KPS2 and CN72) were used as the main plot factor and three rhizobium strains, viz. *Bradyrhizobium* sp. (SB1), *Bradyrhizobium elkanii* (SB2) and *Rhizobium* sp. (SB3) plus an uninoculated control (without rhizobia), as the subplot factor. Nodule fresh and dry weights in all genotypes increased significantly upon inoculation with SB2 strain at the R7 stage. Inoculation with SB2 also resulted in all genotypes being highest in total nitrogen, whereas inoculation with SB3 caused the greatest gain in shoot fresh and dry weights at R3.5 and R7 stages respectively. The highest percentage of nitrogen derived from the atmosphere both from the ureide and ^{15}N abundance techniques was found in MJU3 genotype combined with SB2 inoculation at R3.5 and R7 stages.

Keywords: mungbean, nitrogen fixation, rhizobia, ureide method, ^{15}N abundance method
