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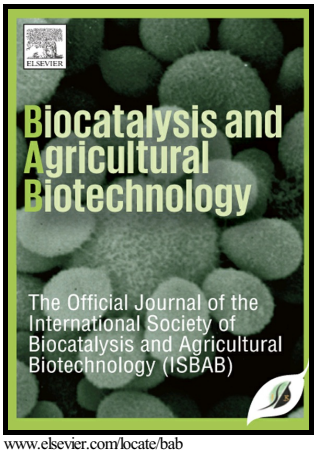

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Rhizobial genetic diversity in root nodules of *Trigonella foenum-graecum* cultivated in sub-himalayan region of Uttarakhand

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ABSTRACT

The aim of the present study was to characterize rhizobia isolated from the root nodules of *Trigonella foenum-graecum* (fenugreek) cultivated in the sub-himalayan region of Uttarakhand by means of morphological, physiological, biochemical and molecular characteristics to know their phylogenetic relationships. The genetic relatedness amongst twenty root nodule isolates of fenugreek was analyzed employing PCR-RFLP (ARDRA) analysis of 16S rDNA amplicons, ERIC-PCR and sequencing technique. Restriction analysis of the amplified 16S rRNA gene and ERIC-PCR of fenugreek rhizobia led to the identification of three ribotypes that appear to represent three distinct species: *Ensifer* (*Sinorhizobium*) *meliloti, Rhizobium leguminosarum* and *Burkholderia* sp. Based on plant growth promoting activities four isolates RHT2, RHT8, RHT12 and RHT19 were selected from three distinct groups and identified as *Ensifer* (*Sinorhizobium*) *meliloti*, *Burkholderia* sp., *Burkholderia* sp., *Rhizobium leguminosarum* by 16S rDNA sequences. The majority of isolates is closely related to *Ensifer* (*Sinorhizobium*) *meliloti*. This study clearly shows that the characterization of symbionts of fenugreek will reveal additional diversity.