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BIOPRODUCTION OF INDOLE 3-ACETIC ACID BY *RHIZOBIUM* STRAINS ISOLATED FROM ROOT NODULES OF *VIGNA TRILOBATA* CULTIVARS

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ABSTRACT

In the present study 25 strains of Rhizobia were isolated from Vigna trilobata cultivars grown in the soils of different districts in Andhra Pradesh. All the 25 strains produced IAA but maximum amount was produced by six strains on Yeast Extract Mannitol (YEM) medium supplemented with L- tryptophan. Among them, three were identified as Agrobacterium sp. and remaining three as one species each of Rhizobium, Sinorhizobium and Ensifer after 16sRNA sequencing. Agrobactrium sp. produced more IAA than rhizobium sp. and others. A. tumifaciens MRR 102 (KC428652) produced maximum amount of IAA (120 µg/ml) while Ensifer sp. MRR125 (KC503885) produced 46.5 µg/ml of IAA. IAA production increased with increase in incubation period from 24h and reached maximum at 72 hours for all the isolates. Similarly, with increase in concentration of L tryptophan, increase in IAA production was observed in all the isolates, with maximum IAA production at 200mg/ml of L tryptophan. IAA production was maximum at pH 7 for all the isolates. These strains were examined for effect of different carbon and nitrogen sources on IAA production. Mannitol proved to be the best carbon source and ammonium sulphate as nitrogen source for highest production of IAA by these isolates.

KEYWORDS: IAA Production Increased, Highest Production of IAA & Yeast Extract Mannitol

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