

**EVALUATION OF NITROGEN FIXATION ABILITY
OF *Azospirillum spp.* ASSOCIATED WITH
SUGARCANE, MAIZE AND GUINEA GRASS AND
FORMULATION OF A BIOFERTILIZER**

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ABSTRACT

Bacteria of the genus *Azospirillum* are considered as plant growth promoting bacteria. Nitrogen fixation by *Azospirillum* sp. in association with grasses and other plants has been examined. In this study, *Azospirillum* strains were isolated from sugarcane, maize and guinea grass. Roots and leaves samples were collected from farmer's fields near to the Uva Wellassa University. Washed solutions of roots and surface sterilized root parts were successful for the isolation of *Azospirillum*, than the washed solutions of leaves. The nitrogen fixing potential of ten isolates was evaluated by kjeldhal method. Nitrogen fixing efficiencies were varied from 1.08 to 1.35 mg of N per gram of malate. The highest nitrogen fixing strain was isolated from sugarcane roots.

Key words: isolation, *Azospirillum*, Nitrogen fixation, biofertilizer, kjeldhal