

AO15**Endophytic Bacteria from Soybean and its Potential for Plant Growth Promotion**

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Endophytic bacteria are ubiquitous in most plant species, colonizing locally as well as systematically, and influencing plants development by disease suppression, contaminant degradation, and plant growth promotion. So, the aim of this work was to select strains potentially able to improve plant growth by nitrogen fixation, auxin production and phosphate solubilizing. A collection of 373 soybean endophytic isolated from soybean leaves, stems and roots were studied. The *in vitro* ability to atmospheric nitrogen fixation, mineral phosphate solubilization and auxin (IAA) production was analyzed using qualitative methods. The percentage of isolates able to produce IAA and solubilize mineral phosphate was 34% and 49%, respectively. Furthermore, 75 isolates that were IAA and phosphate positive were also evaluated to capability to nitrogen fixation. Within this population, 60% of the isolates grown in nitrogen free medium and 20% were PCR positive for the *nifH* gene. In further analysis, the isolates were identified by partial 16S rDNA sequence analysis as *Acinetobacter calcoaceticus*, *Burkholderia* sp., *Enterobacter sakazaki*, *Erwinia* sp., *Pantoea* sp., *Pseudomonas oryzae* sp., *Pseudomonas* sp., *Ralstonia pickettii* and others. These results suggest that endophytic isolates could be used to improve the soybean growth by supplying auxin, enhancement of phosphate and organic N₂ to soybean plants.