

VARIABILITY OF *Azospirillum brasilense* ISOLATEDS FROM ARID ZONE AND SEARCH FOR DEGRADING XENOBIOTICS GENES

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Abstract. Plant Growth Promoting Bacteria that interact with crops are considered a viable option as biofertilizers where *Azospirillum brasilense* produces the phytohormone indole acetic acid (IAA). The IAA promotes bacterial adaptation to stress conditions leading to improved plant development and production (Bianco et al. 2006). *Azospirillum* genus is bacteria found in soil associated with plants especially with the Gramineae family. These bacteria colonize mainly the rhizosphere and root surface (Döbereiner, 1992). The intensive agriculture using chemical fertilizers creates a highly selective and homogeneous environment that reduces bacterial diversity (Saleena et al., 2002). In the mid-60s a large number of microorganisms capable of degrading xenobiotic compounds were discovered emerging concept bioremediation. in the laboratory we have a collection of strains of *Azospirillum brasilense* native to arid areas which is of interest to measure the genetic variability among isolates in the production of Indole Acetic Acid and searching for genes capable of degrading products xenobiotics. . In the laboratory we have a collection of strains of *Azospirillum brasilense* native to arid regions which is of interest to measure their genetic variability among those isolates in the production of Indole Acetic Acid. Also, the search of genes capable of degrade xenobiotics products. According to 16S rDNA RFLP pattern of the 67 isolates of *A. brasilense* these were achieved grouped based on their counterparts patterns. Otherwise, the isolates of *A. brasilense* shows a variability on the IAA production, such as isolates going from 4 ppm to 61.44 ppm of IAA production. On the other hand we found, at the *A. brasilense* genome, 3 genes (*cdd*, *paaF*, *acyP*) related to the degradation of xenobiotics.