

Title: ALLELOPATHIC ACTIVITY OF EXUDATES ROOT CORN ON THE GERMINATION OF A HETEROLOGOUS GENOTYPE MAIZE

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Abstract:

The root exudates produced by different plant species are able to induce chemotactic responses on soil microbiota, mediating plant-bacteria interactions. Among these exudates biomolecules are carbohydrates, organic acids, peptides and flavonoids. Different groups of associative microorganisms (beneficial and pathogenic) are attracted by the root exudates - an effect called chemotaxis. The bacteria *Azospirillum brasilense* Ab-V5 Dygs was grown in liquid medium for 48 hours at 28 ° C, and this culture was used to prepare chemotaxis chambers in petri dishes lined with filter paper saturated with water. Different substances were tested for chemotactic effect: the exudates DKB 240 or DKB 390 genotypes; organic malic acid, citric acid or oxalic acid; and flavonoid naringin, rutin or hesperidin. These substances were arranged in capillary tube kept in contact with 50mL of bacterial culture at an angle of 45 °, for 24 hours at 28 ° C. At the end of the incubation period was taken to determine the number of colony forming units (CFU) in the capillaries. CFU determinations showed that root exudates of genotypes DKB 240 and DKB 390 have a high capacity for chemotaxis *A. brasilense* Ab-V5, wherein the genotype DKB afforded 240 CFU counts greater than 390 DKB genotype (CFU 7,9X10³ / ml and 4,9x10³ CFU / ml, respectively). None of the substances evaluated showed significant chemotactic effect being obtained CFU values ranging from 4 x 10¹ CFU / ml for AC. Citric, and 1 x 10² CFU / mL for AC. Malic. Thus we conclude that chemotactic effect of organic acids and flavonoids tested was much lower than the effect caused by root exudates on *A. brasilense* Ab-V5. In addition, the different chemotactic behavior of *A. brasilense* Ab-V5 for exudates of genotypes indicates qualitative and quantitative diversity in its composition.

key word: *Azospirillum brasilense*, inoculants, bacteria promoting plant growth.

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