



EVALUATION OF SORGHUM PLANT GROWTH-PROMOTING BY STRAINS BACTERIAL ISOLATED FROM DIFERENT REGIONS OF MEXICO.

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Introduction. A consequence of chemical fertilizers used in agriculture, has caused environmental destruction and soil showing its lost productivity. Biofertilizers are a sustainable technology that promises to improve crop yields and economic, without causing environmental damage because it is made by microorganisms with nitrogen-fixing ability. This project evaluated four nitrogen-fixing strains compared with chemical fertilization treatment and the unfertilized treatment in sorghum and maize crops with a variable, the poncho (insecticide) and see if there is a difference in treated seeds and biofertilizers for both crops under greenhouse conditions.

Methods. Seeds were inoculated corn and sorghum poncho and corn and sorghum poncho without previously sanitized with 4 different strains fix nitrogen, *Bacillus megaterium* strain IAM 13418 isolated from Tamaulipas México, *Virgibacillus Koreensis* strain BH30097 isolated from Veracruz Mexico, *Ensifer adhaerens* strain LMG 202106 isolated from Mexico y *Brevibacterium Frigori* tolerans strain DSM8801 isolated from Coahuila Mexico. A solution volume of 1300ml total volume of inoculum (1×10^{-8}), varied according to the amount of each strain curve, the absorbance was adjusted to 1 to the 4 strains and thereby the volume of each strain was different and remaining capacity with sterile distilled water to 1300ml complete. Were seeded and analyzed greenhouse condition 1 month 10 days. Was evaluated plant height, height of root, stem and root fresh weight, shoot and root dry weight.

Results According to the evaluated parameters was obtained that the bacteria *Ensifer adhaerens* has greater impact on plant height, root height, number of leaves, shoot fresh weight and root fresh weight in sorghum poncho. Also it was found that no chemical fertilization treatments exceed biofertilization.

Table 1 Parameters evaluated on effect of strains in Sorghum with poncho and without poncho,

Cultivation	Sorghum without poncho			sorghum with poncho		
	T(-)	T(+)	S	T(-)	T(+)	S
plant height	14.21	9.67	12.18	<u>11.55</u>	<u>11.07</u>	<u>12.7</u>
Height root	<u>12.64</u>	<u>12.14</u>	<u>15.11</u>	<u>13.82</u>	<u>15.28</u>	<u>16.64</u>
Number of leaves	5.2	4.7	5.2	<u>5.5</u>	<u>5.5</u>	<u>5.8</u>
Stem fresh weight	<u>0.66</u>	<u>0.23</u>	<u>0.55</u>	<u>0.59</u>	<u>0.67</u>	<u>1</u>
Root fresh weight	<u>0.6</u>	<u>0.3</u>	<u>0.9</u>	<u>0.5</u>	<u>0.6</u>	<u>1</u>
Stem dry weight	<u>0.07</u>	<u>0.02</u>	<u>0.11</u>	0.05	0.03	0.04
Root dry weight	<u>0.05</u>	<u>0.02</u>	<u>0.5</u>	0.05	0.03	0.04

Conclusions. *Ensifer adhaerens* coded sample strain greater effect on sorghum with poncho, poncho Biofertilization not affect the contrary poncho treated treatments germination and there were more pest control

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