



EFFECT OF NITROGEN FIXING BACTERIA AND HALOPHILIC IN PROMOTING GROWTH AND YIELD IN TOMATOE PLANTS (*Lycopersicon esculentum Mill.*)

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Introduction. Tomato (*Lycopersicon esculentum Mill.*), is an important vegetable in the world and its popularity is steadily increasing. Being the second most important vegetable, second only to the potato (1). The main producer is China with 15%, about 12.8 million tons.

In Mexico, tomatoe is an important crop in terms of employment generation, reporting exports of 963.798 tons (2). The tomato acreage in 2000 was 76.234 hectares, being Sinaloa, Michoacan and Baja California Norte the most important states in production (3).

Organic agriculture is an alternative to solve and mitigate some current problems on conventional agriculture (4), with a vision of agriculture that promotes intensification of natural processes to increase production, based on better soil management, use of local inputs, add value product (Codex, 1999).

Methods. The research was conducted in a tunnel type greenhouse covered with polyethylene cover and mesh antifidos PalauBioquim owned by SA de CV, located in Saltillo Coahuila located at 25 ° 25'05" N, 100 ° 59'36" W., at 1600 m above sea level, using tomatoe seeds (*Lycopersicon esculentum Mill.*). An inert substrate was prepared based on peat moss and perlite in a 2:1 ratio. In pots with 8 kg, with eight tomato seedlings of the Rio Grande variety for each treatment. We applied five treatments, consisting of 1 control (water), 1 halophilic bacteria (H1) and 3 nitrogen fixing bacteria (N1, N2 and N3). Variables to evaluate: Stem diameter, Seedling height, Fresh weight and dry plant weight, Germination, Stem height, Root length, Germination index (GI).

Results. Germination rates ranged between 100 and 60% (N4 concentration 0.0045%) and 6 (N4 concentration 0.0450%) the lowest. The stem height between 6.85cm (halophytic concentration 0.0090%) and 4.27 cm (N5

0.0909% concentration), tendency is clearly seen in Fig. 1,

Root length between 3.57 (N5 0.0090% concentration) and 1.92 cm (N5 concentration 0.0909%),

The germination rate is between 112.46 and 43.53 (N4 0.0909% concentration and 0.0450% respectively), germination percentage between 100 and 60% (0.0270% concentration N4 and 0.0450%).

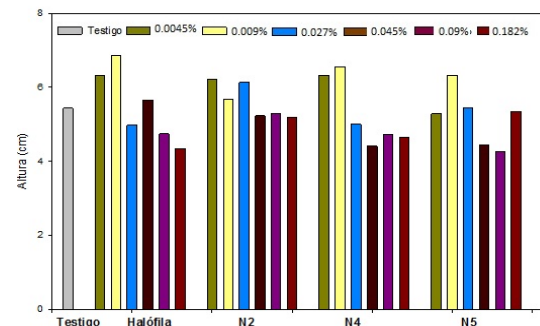


Fig 1. Shows the behavior in their length in relation to each microbial culture and its concentration applied

Conclusions. For variables stem diameter, plant height treatments showed the best results were T3 and T2, in both fresh weight of the plants the best treatment was T1 (control). Dry weight was the best treatment was T5 (N5), witness with lowest values for this variable

For variables of sprouts, IG and the germination percentage, best treatment was T14 that corresponds to N5 bacteria with the lowest concentration.

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