

## Potential Growth of Tomato Plants in Induced Saline Soil with Rhizobacteria (PGPR)

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**Abstract :** The critical evaluation of tolerance in tomato plants against the induced saline soil were assessed by transcript analysis of genes coding for products potentially involved in stress tolerance. A reverse transcriptase PCR experiment was performed with Hsp90-1, MT2, and GR1like protein genes using RNA isolated from different tissues of tomato plants. Four strains of *Bacillus magisterium* were inoculated with 100 Mm & 200 Mm concentrations of salt. Eleven treatments each ten replica pots were installed in green house experiment and the parameters taken into account were morphological (length, weight, number of leaves, leaf surface area), chemical (anthocyanin, chlorophyll-a, chlorophyll-b, carotenoids) and biological (gene expression). Results bare a response i.e. highest response of MT2 like gene was at 24 hpi and the highest levels of GR1 like protein transcript accumulation were detected at 36 hpi. The chemical and morphological parameters at diverse salt concentrations bequeath superlative response amongst strains which candidly flank on Zm7 and Zm4. Therefore, *Bacillus magisterium* Zm7 strains and somehow Zm4 strain can be used in saline condition to make plants tolerant. The overall performance of strains Zm7, Zm6, and Zm4 was found better for all studied traits under salt stress conditions. Significant correlations among traits root length, shoot length, number of leaves, leaf surface area, carotenoids, anthocyanin, chlorophyll-a and chlorophyll-b were found and suggested that the salt tolerance in tomato may be improved through the use of PGPR strains.

**Keywords :** *Bacillus magisterium*, gene expression glutathione reductase, metallothionein, PGPR, Rhizobacteria, saline

**Conference Title :** ICFEB 2015 : International Conference on Food Engineering and Biotechnology

**Conference Location :** Prague, Czechia

**Conference Dates :** March 23-24, 2015