



**TRANSFORMATION OF LITCHI (*LITCHI CHINENSIS* SONN.) WITH GLY I+II
GENE LEADS TO ENHANCED SALT TOLERANCE**

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ABSTRACT

Worldwide, it has been estimated that approximately 70% of crop yield reduction is the direct result of abiotic stresses [1]. The ever increasing pressure put on agricultural land by burgeoning human population; has resulted in land degradation and desertification of soil. The cumulative effect of abiotic stress (salinity) and increasing population affects the agronomically imperative cash crops viz. Litchi, which otherwise making sound economy of the growers and country as well. The litchi trees are susceptible to salt stress & not able to sustain in high salt concentration. Consequently it hampers the productivity of litchi. To combat, there is need to develop the salt tolerant cell lines of litchi which would be able to tolerate salt stress and is needed for the universalization of litchi plant. Since it has been reported earlier that an increase in the enzyme of the glyoxalase system imparts salinity tolerance in the model plant tobacco [2]. We used this strategy and took gly I & II genes together and manipulated the glyoxalase pathway for enhancing salinity tolerance in litchi. The transgenic that developed showed higher salt tolerance as compared to the wild type, observed by less reduction in chlorophyll content in the leaf disc. Further gene integration was checked by PCR, Southern & Western blot. Till date, there are no such reports in case of litchi. This finding will helpful in good litchi cultivation in stress environment without affecting its yield. . Our results suggest an important role of glyI+II in conferring tolerance to plants under stress conditions.

**Keywords: *Agrobacterium*-Mediated Transformation, Salinity Tolerance, Glyoxalase
Pathway, GlyI&II Genes, Methylglyoxal**