

## *Conclusion*

Salinity is the major constraint in agriculture and adversely affect plant growth and metabolism. A plant growing under salinity stress shows retardation in growth and altered level of enzymes of various metabolic pathways. Under such condition of stress, halophytes are the plants which can growth and complete their life cycles. Salinity tolerance of these halophytes has been well understood and being exploited to transfer the characters to crop plants .

Among these halophytes , Suaeda and Salicornia are two genus which has the potential for commercial exploitation besides mangroves. *Salicornia biglovii* has already being under commercial cultivation as a source of edible oil. The widely growing Indian species of Salicornia i.e. *S. brachiata* can also be used as a source of oil in the country. Suaeda species are also source of seed oil and fodder.

It is there fore, both the genus are investigated in details with reference, their micropropagation potentials, salinity tolerance and induction of soma clonal variations. Differential response was noticed both at inter specific level and inter generic level regarding callogenesis. It was easy to induced organogenesis in Suaeda while Salicornia

was calcitrant towards all the modification of culture conditions.

Since, *in vitro* plant regeneration from cell cultures offers a suitable system for selection, variation and mass propagation of suitable plant species, It would be worth while to make efforts for large scale production of somatic embryos in *Salicornia* as that would greatly aid to the genetic manipulation and production of modified plants with reference to different type of salinity in the world . Induction and conversion of somatic embryos in to plant remained limitation in both species as a regeneration system .

Although , we know that the balance between auxin and cytokinin can bring about organogenesis in callus culture, this can not be unfortunately applied universally. During the present studies also, it was difficult to the achieve the same. Somatic regeneration in cultured cells provide useful system for differentiation and development of plants at cellular level. Macro molecules such as DNA , RNA and proteins play a decisive role along with growth regulators in the activities of cells during growth and differentiation . The present investigation confirms that organogenesis lead to the increase activities of DNA, RNA and proteins and related enzymes. Roles of RNA and proteins during

organogenesis has already been demonstrated in a number of plant species .

Soma clonal variation induced in Suaeda can be exploited in future for production of variable genotypes. This would eventually lead to identification of some desirable regenerants suitable for different type of salinity.

It is concluded that the morphogenetic response of a tissue culture depends on the endogenous growth substance present at the time of culture. A wound callus arises as an outgrowth from cut surface following cell division. Requirement of growth hormones and nutrients for callus growth vary specific not only species to species but also the source of explant. Above data shows that even different explant of the same plant have different requirement of hormones for callus induction. Callus from the explant show 5 distinct phases lag, exponential, linear, progressive & stationary phase during growth of callus.

Both in Suaeda and Salicornia the lower as well as higher concentrations adversely affected the callus initiation and growth. Mainly the exponential phase and stationery phase of growth were affected by change of concentrations.

\* \* \*