In vitro plant regenaration of *Momordica cymbalaria* Fenzl. and assessment of genetic fidelity using ISSR markers.

Chaitanya.G, Ramakrishna.D, Suvarchala.V, Shasthree.T*

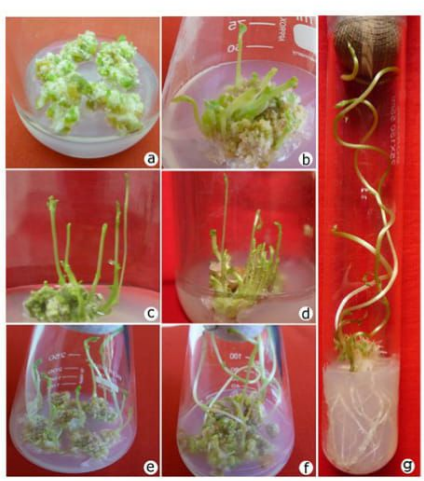
Plant cell, Tissue and Organ culture Laboratory, Department of Biotechnology,

Kakatiya University, Warangal, Telangana State, INDIA

chaitanya.gopu38@gmail.com and tadurishastri@rediffmail.com

Abstract: *Momordica cymbalaria* Fenzl.,is an important medicinal cucurbit, it is recognized in traditional medicine, used for the treatment of many diseases like diabetes mellitus, rheumatism, diarrhea. In India, the plant is not cultivated by the farmer as a regular crop, it occurs naturally in the boundary of fields as a weed plant, in the rainy season. It can be overcome by micropropagation a biotechnological approach. Plant tissue culture technique offer an integrated approach for the production of phyto pharmaceuticals. Leaf, shoot tip and nodal explants were successfully callused on Murashige and Skoog's medium (MS) supplemented with different concentrations of auxins 2,4-D, IAA,IBA,NAA and cytokinins BAP and KN alone or in combination. Maximum percentage of callus (95%) was obtained from leaf explants at 1.0mg/l 2,4-D. Leaf derived callus highly responded for the shoot regeneration(13.33± 0.667) on half strength MS medium containing 1.5mg/l BAP in combination with 1.5mg/l IBA. Elongated shoots were rooted on half strength MS media supplemented with 0.2- 2.0mg/l NAA and IBA.The highest number of roots were obtained (5.33±0.667) in 0.5mg/l NAA. The rooted plantlets were successfully hardened and transferred to the green house with 90% of survival. Inter Simple Sequence Repeat analysis revealed the genetic stability of *in vitro* raised plant with mother plant. The present study showed that regeneration of *Momordica cymbalaria* offers a good opportunity to raise micropropagation and inducing roots from leaf explants.

Keywords:Callus induction, Regeneration, *Momordica cymbalaria*, *In vitro*, Auxins, Cytokinins



(a) Initiation of green callus on MS medium fortified with IBA alone 1.5 mg/l.
(b) Multiple shoot induction on MS medium supplemented with 1.5 mg/l BAP + 1.5mg/l IBA.
(c,d) Proliferation of shoots after 2 weeks of culture.
(e,f) Subculture for elongation of shoots on same shooting medium.
(g) Micropropagated plant showing a well established shoot and root system.