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In vitro propagation of *Stevia rebaudiana* (Bertoni) Bertoni (Asteraceae)

R. M. Dharmadasa,[1]* G. B. V. U. De Silva,[1] D. L. C. K. Fonseka,[2] A. Lintha,[1] and P. Ranasinghe[1]

[1]*Research and Development Division, Industrial Technology Institute, Colombo 07.*

[2]*Faculty of Agriculture, University of Ruhuna, Mapalana, Kamburupitiya.*

Stevia rebaudiana (Bertoni) Bertoni is a perennial herb native to South America, which produces glycosides of the diterpene steviol, that are low calorie sweeteners, about 300 times sweeter than sucrose. *Stevia rebaudiana* is widely used as a natural sweetener for the production of candy, sweets, and an array of beverages due to its safety for diabetic patients. Even though this plant has an immense potential to be used in Sri Lanka, it has not been introduced yet due to various reasons. The main objective of the present study is to find out an efficient protocol for *invitro* propagation in order to establish large scale production of *Stevia rebaudiana*. Nodal explants were collected from authenticated well grown mother plants maintained in the green house and they were surface sterilized using different concentrations of Clorox (10%, 15%) for 15 minutes and established in Murashige and Skoog medium (MS) supplemented with different concentrations and combinations of BA (0 mg/L, 1 mg/L, 2 mg/L, and 3 mg/L) and IBA (0 mg/L, 0.5 mg/L, and 1 mg/L). *In vitro* rooting of shoots were tested using different concentrations and combinations of IBA (1 mg/L – 2 mg/L) and charcoal (1000 mg/L – 2000 mg/L). The rooted plantlets were acclimatized. All the experiments were set upin a Completely Randomized Design and 10 replicates used per treatment. Data was recorded on growth parameters of *in vitro* experiments weekly and analysed using ANOVA, and mean separation was done by DMRT. Results of *in vitro* experiments showed the best surface sterilization method for *Stevia rebaudiana* is 15% clorox for 15 minutes with 18% contamination rate. Murashige and Skoog (MS) media supplemented with 0.5 mg/L IBA and 1 mg/L BA, 0.5 mg/L IBA and 2 mg/L BA, 0.5 mg/L IBA and 3 mg/L BA exhibited the best proliferation rate for the Stevia with 3.4 ± 0.48^{a}, 3.86 ± 0.63^{a} and 3.29 ± 0.43^{a} shoots per explant, respectively. 1000 mg/L charcoal and 1 mg/L IBA showed the best results for *in vitro* rooting (95% success) of *Stevia rebaudiana*.

Keywords: *In vitro* propagation, *Stevia rebaudiana*, nodal explant, MS medium

E-mail: dharmadasarm@gmail.com