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Use of natural growth enhancer for *in vitro* micropropagation of *Stevia rebaudiana*

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Stevia rebaudiana is an agro-based herb, which produces zero-calorie diterpene glycosides in its leaves, which can be used as a substitute for sucrose since they are about 300 times sweeter than sucrose. Micropropagation enables a rapid increasing of the biomass of stevia. Sterilized young nodal cuttings were cultured on Murashige and Skoog (MS) media combined with young coconut water (CW) and 6-benzylaminopurine (BAP) for initiating shoots. Coconut water is a good source of nutrients consisting of a unique chemical composition of sugar, vitamins, minerals, amino acids and phytohormones. Higher frequency of bud break (93.33%) and the average length of shoots (41.86±0.85mm) was observed in media with only coconut water (10% CW), while coconut water with 6-Benzyl amino purine (BAP) (10%CW+0.2mg/L BAP) produced the highest average number of shoots (9.44±0.51) and the number of leaves (8.28±0.81) within 3 weeks of culture. By using ½ MS, callusing was reduced. Rooting media with only macronutrients and Indole-3-butyric acid (IBA) and 5% CW showed the earliest rooting (6 to 7 days). Root initiations was highest with ½ MS + 0.2mg/L IBA+ 5% CW. Regenerated plantlets were successfully hardened and acclimatized in glass jars with compost and sand covered with a polypropylene cap under greenhouse condition. Stevia is capable of rapid in vitro growth with minimum nutrients. Our results suggest that micropropagation of Stevia plants can be enhanced with the incorporation of CW to the media.

Keywords: Acclimatization, Coconut water, Nodal segments, Rooting, Shooting, *Stevia rebaudiana*,