

Efficient plant regeneration via organogenesis in “Egusi” melon (*Colocynthis citrullus* L.)

Valentine. O. N., Thirukkumaran. G., Iioka. I., Mii. M. Laboratory of Plant cell Technology,
Graduate school of Horticulture, Chiba University, Japan

Abstract

Plant regeneration protocol of “Egusi” melon (*Colocynthis citrullus* L.) was established using three local (“Ejagham”, “Sewere” and “Barablackedge”) and one improved (NHC1-130) cultivars. Cotyledonary explants of different lengths (1/2, 1/4 and 1/6) excised from 4- or 8-day-old seedlings germinated in vitro were cultured on MS medium supplemented with different concentrations of 6-benzylaminopurine (BA). The best results were obtained when cotyledons from 4-day-old seedlings were cut into 2 (1/2) halves. Plant regeneration was optimal on medium containing 5 mg/l BA, yielding 86.3%, 77.0% and 76.3% shoot induction frequencies amongst the three local cultivars of “Ejagham”, “Sewere” and “Barablackedge”, respectively. In NHC1-130, the highest shoot induction frequency (85%) was obtained on medium containing 2 mg/l BA. Adventitious shoots were elongated on medium containing 0.1 mg/l BA and successfully rooted on hormone-free MS medium. Flow cytometric analysis revealed 70% of the plants to be diploid.