

Plantlet Regeneration from Zygotic Embryos of *Securidaca longepedunculata* Fresen

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Abstract : *Securidaca longepedunculata* Fresen (Violet tree) belongs to the family Polygalaceae characterised by papilionaceous purplish flowers. This medicinally valued plant disappears at an alarming rate due to intensified anthropopressure particularly the unregulated manner of subterranean plant parts' collection from natural stands. Some indiscriminately harvested plants bear seeds containing both mature and immature zygotic embryos that are often discarded. Here, such seeds are collected for this experiment. Seeds were collected, washed, de-coated, and dipped in 70 % (v/v) ethanol for 30 s followed by rising in 5 % solution sodium hypochlorite, containing two drops of tween 20, for another 25 min. Mature zygotic embryos (MZE) were excised from seeds and cultured in two basal media (MS and B5), three carbon sources (sucrose, glucose and fructose) at five concentrations (0-40 g/L) while immature zygotic embryos (iMZE) were composed on similar basal media and carbon source supplemented with 0-2 mg/L Benzylaminopurine (BAP) and 0-2 mg/L Indole acetic acid (IAA). MZE cultured on MS + 30g/L sucrose differed significantly from other treatments at $p \leq 0.05$ with maximum percent sprouting (85.24 ± 5.67 %) and shoot length (7.53 ± 0.67 cm). MZE culture had the maximum percent sprouting (85.24 ± 5.67 %) and shoot length (7.53 ± 0.67 cm) in medium containing MS+ 30g L-1 sucrose. iMZE on the other hand had maximum growth on MS + 40g/L sucrose supplemented with 1.5 mg/L IAA+ 1.0 mg/L BAP. This study is geared towards creating an alternative path for the maximum production of plants in vitro, thereby, preventing the plants from disappearing.

Keywords : Gamborg's medium, Murashige and Skoog medium, *Securidaca longepedunculata*, zygotic embryos

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