

## **SYNTHETIC SEEDS OF CLITORIA TERNATEA L. FOR MASS PROPAGATION AND CONSERVATION**

**Noraini Mahmud<sup>1</sup>, Rosna Mat Taha<sup>2</sup>, Norlina Rawi<sup>3</sup> and Sadegh Mohajer<sup>4</sup>**

Institute of Biological Sciences, Faculty of Science, University of Malaya, Malaysia

Correspondence: <sup>1</sup>fara\_aid@siswa.um.edu.my, <sup>2</sup>rosna@um.edu.my, <sup>3</sup>inna\_linn@yahoo.com, <sup>4</sup>mohajer.ae@gmail.com

### **ABSTRACT**

Synthetic seeds of *Clitoria ternatea* L. were successfully created from leaf explants within 3 weeks after germinated on Murashige and Skoog (MS) media. The seeds were initially washed with tap water and teepol, then the seeds were sterilised with 99% (v/v) sodium hypochlorite solution for 1 minute and rinsed with distilled water three times. In a laminar flow cabinet, the seeds were dipped in 70% (v/v) ethanol for 1 minute and blotted with sterilised tissue. The shoot tip explants were encapsulated with 3% alginate (w/v) which supplemented with various concentrations (0.5-2.5 mg/l) and combinations of NAA, BAP and adenine. The optimum concentration for the formation of encapsulation matrix was 3.0% sodium alginate (NaC<sub>6</sub>H<sub>7</sub>O<sub>6</sub>). Encapsulated beads were soaked in 100 mM calcium chloride dehydrate (CaCl<sub>2</sub>.2H<sub>2</sub>O) solution for 30 minutes. No suitable beads were formed with low concentration (1-2%) of sodium alginate. Within 10 minutes soaking in calcium chloride dehydrate, clear and bead formation with no definite shape was observed. While, within 20 minutes in calcium chloride dehydrate, clear beads, solid and round in shape was observed, however, inside the bead was still in liquid condition. In the present study, the rate of germination of synthetic seeds were slightly decreased from 90% to 80% after 30 days of storage at 4°C. To date, this is the first report on synthetic seeds technology involving *Clitoria ternatea* L. as an alternative and supplementary method for mass propagation and conservation of this medicinal, attractive ornamental and also forage crop for future uses and exploitation.

**Keywords:** In Vitro Propagation, Synthetic Seeds, Adenine, Alginate.