

Callus Induction, *In Vitro* Plant Regeneration and Acclimatization of *Lycium barbarum* L. (Goji)

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Abstract: *Lycium barbarum* L. (Goji) belongs to Solanaceae family and native to some areas of China. Ethnobotanical studies has shown that this plant has been consumed by the Chinese since ancient times. It has been used as medicine in providing excellent effects on cardiovascular system and cholesterol level, besides contains high antioxidant and antidiabetic properties. In the present study, some tissue culture work has been carried out to induce callus, *in vitro* regeneration from various explants of Goji and also some acclimatization protocols were followed to transfer the regenerated plants to soil. The main aims being to establish high efficient regeneration system for mass production and commercialization for future uses, since the growth of this species is very limited in Malaysia. The optimum hormonal regime and the most suitable and responsive explants were identified. It was found that leaves and stems gave good responses. Murashige and Skoog's (MS) medium supplemented with 2.0 mg/L NAA and 0.5 mg/L BAP was the best for callus induction and MS media fortified with 1.0 mg/L NAA and 1.0 mg/L BAP was optimum for *in vitro* regeneration. The survival rates of plantlets after acclimatization was 63±1.5 % on black soil and 50±1.3 % on mixed soil (combination of black and red soil at ratio of 2 to 1), respectively.

Keywords: *Lycium barbarum*, tissue culture, *in vitro* regeneration, acclimatization