

Plant regeneration as affected by plant growth regulators (PGR) in mangosteen (Garcinia mangostana L.)

Abstract

A protocol was developed for in vitro plantlet regeneration of mangosteen (*Garcinia Mangostana L.*) from shoot tip, stem and seed explants. Shoot tip explants produced the highest mean number of shoots per explant on media supplemented with 1.0 mg/L 6-benzylaminopurin (BAP) and 0.05 mg/L kinetin (KIN) (73.3). On medium containing 0.1 mg/L BAP and 0.05 mg/L KIN, the highest mean shoot height reached 1.2 cm. The highest percentage of callus formed (90%) was obtained in treatment containing 0.20 mg/L KIN. The effect of BAP in combination with α -naphthalene acetic acid (NAA) was also studied. On half seed explants, the combination of 4 mg/L (w/v) of BAP with 0.2 mg/L (w/v) of (NAA) produced the highest number of shoots per explant (75). In medium containing 2 mg/L (w/v) of BAP and 0.2 mg/L (w/v) of NAA, the mean shoot height reached 1.79 cm also The highest percentage of callus formation (90%) was obtained on treatment containing 0.5 mg/L (w/v) of NAA. For rooting, pretreatment in different indol-3- butyric acid (IBA) and NAA concentrations and comparison of MS salt strengths were evaluated. Identical pattern occurred on medium containing one-quarter strength MS salt and the highest mean number of roots per explant (1.17) was produced in treatment with 2 mg/L IBA. The highest percentage of root formation was obtained on one-quarter strength MS salt medium containing 0.1 mg/L NAA (90.4%). Rooted plantlets were acclimatized on medium composed of soil + sand + organic matters + vermiculite according to the ratio (2: 2: 1: 1).

Keyword: *Garcinia Mangostana L.*; 6-benzylaminopurine; Indole-3-butyric acid; α -naphthalene acetic acid