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RESEARCH ARTICLE

In vitro micro propagation of papaya var. Red Lady

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ABSTRACT

Papaya is propagated through seed. It is a cross-pollinated crop, the plant raised from seeds have a mixed inheritance which make them highly variable in performance. Clonal propagation is an urgent necessity for improvement of papaya. Although, desirable characteristics of papaya var. Red Lady, growers are not able to adopt this variety due to very high cost of seed. The technique of *in vitro* culture has been made clonal propagation a possibility in papaya. While standardizing the method of micropropagation of papaya, the factors influencing *in vitro* establishment and growth of papaya were examined namely, sources of explants, surface sterilants, pH of the medium, sucrose and adenine sulphate concentration in the medium. In multiplication study, the maximum shoot multiplication was observed in alternate sub culturing in basal medium and MS medium + 0.5 mg/l BAP + 0.1 mg/l NAA and gave highest number of shoots per explants. Sucrose 30 g/l in medium was found to be more favourable for maximum number of shoot and length of longest shoots. Out of various pH level tested, pH 5.7 recorded maximum numbers of shoots (3) and maximum length of longest shoots (2.75 cm). In proliferation medium, maximum length of shoot, numbers of shoots and growth rate was observed in MS medium fortified with 160 mg/l adenine sulphate. *In vitro* rooting occurred on shoot regeneration medium; however, it was a slow process. Rooting treatment consisting of half MS medium supplemented with 1.0 mg/l IBA was found to be the best for early induction of roots (28 days), maximum number of roots/shoot (5.00) and length of root (6.00 cm) also. Among all potting mixtures tested, the soil: sand: FYM (1/1/1: V/V/V) was found to be suitable for hardening *in vitro* raised papaya plantlets.

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