Studies on micropropagation of Moringa oleifera

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ABSTRACT

The purpose of this study was to investigate Moringa oleifera micropr opagation. Moringa oleifer was known as a muliti-purpose, high potential, and high economical value plan. In this study, we establ ishe d Moringa oleifer micropropagation system and prospec tively to un derstand more elements about woody plant tissues culture. Shoot tip (>5 mm)were obtained from steile F1 seeds which were culturing on MS medium and subcultured an interval of weeks. Alth ough a high surviving rate of bud growing was observed in aseptic MS medium sowing, a failed development of multibud in addition to form ation of enormous callus was found. In order to develop multibuds, we used nine various basic culture medium (1/2MS, MS, MSm, MSsh, 3/2 MS, 3/2MSm, WPM, WPMm, WPMsh) mixed with different con cent ration of cytokinin (BA or Kin; 0, 0.1, 0.3, 0.5, 0.7, 0.9 mg-1 respective ly) and auxin (NAA or IAA 0.02, 0.04 mgL-1). The results sh owed that auxin caused foliar variation of explant and the optimum conditio n for formation of multibuds was 3/2MS medium with 0.3 mgL-1 BA. Each explant produced 5.56 buds with length of 57 mm and subc ulture period extended to 25 days. The optimum condition for rooting was im proved in vitro rooting IBA 1000 mgl-1 (rooting rate 100 %, ste ms: 6.5, domestication surviving rate 71 %). The best efficiency (rooti ng rate 83 %, stems: 9.1, foliar area 71 mm2, domestication surviving rate 91 %) was observed when combined with ventilation. In conclusio n, this study successfully domesticated and produced plantlets, and buil d up a high efficacy and high quality Moringa oleifera mico propaga ti on sys tem.

Keywords : Moringa oleifera, micopropagation, multibuds, rooting, handening.

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