03-2-46

Development of Plant Regeneration System through Somatic embryogenesis and organogenesis in Peanut (*Arachis hypogaea* L.)

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Objectives

To establish the regeneration system via somatic embryogenesis and organogenesis for gene transformation for varietal improvement in *Arachis hypogaea L.*

Materials and Methods

- Plant materials and methods:
  - Peanut variety: Chokwang, Daekwang
  - Somatic embryogenesis: Embryo, which cut into three equal parts by a lateral and a longitudinal cutting.
  - Organogenesis: Cotyledon adjacent to removed embryo
- Media: MS basal + Gamborg B5 vitamins + 3% Sucrose + 0.4% Gelrite or Plant Agar(0.8%) with plant growth regulators (Picloram, 2,4-D, BAP and TDZ)
- Culture condition : 2000 *lux*, 16hr photoperiod at 26°C

Results and Discussion

In general, optimal medium for somatic embryosgenesis was on MS basal medium supplemented with 30 *mg/l* Picloram. The method to cut in embyo for somatic embyogenesis was better in the longitudinal than in the lateral. The best region in embryo for the embryogenesis was the center portion in longitudinal section after 4 weeks culture. The other side, direct multi-shoots via organogenesis from cotyedon adjacent to removed embryo was effective up to 90% on MS medium supplemented with 5 *mg/l* BAP, 2ß*mg/l* 2,4-D, 1*mg/l* TDZ and 3% Sucrose.

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