

Effects of Culture Medium Strength and Growth Regulators on the Morphogenesis of Tissue-Cultured Shoot Apex of Chinese Yam(*Dioscorea opposita* Thunb)

Jong-Hee Shin*, Dong-kyoon Kang, Bong-Ho Lee, Jea-Keun Sohn¹

Institute of Bioresources, Kyoungbuk Provincial Agricultural Technology Administration, Andong 760-891, Korea.

¹*Dept. of Agronomy, Kyungpook National University, Taegu 720-701, Korea*

Objectives

The studies were aimed to establishment of the systems for healthy seedling production and in-vitro propagation through shoot apex culture of yam cultivated in Korea.

Materials and Methods

1. Materials :

Shoot apices were excised from three yam cultivars - Janma(Long-spindle type tuber), Danma(Short cylinder type), Dunggunma(global type)

2. Methods :

The effects of plant growth regulators(0~0.5mg/L 2,4-D, NAA, BAP, Kinetin) and medium strength(dilutions of a Murasige and Skoog's basal medium) on organ development in shoot apices cultures were evaluated.

Results and Discussion

Shoot apices excised from three different genotypes of *Dioscorea opposita* - Jangma, Danma, Dunggunma - were examined for their responses to culture medium strength, growth regulator supplements. The combination of 0.2mg/L BAP + 0.2mg/L kinetin or 2,4-D, 0.01mg/L NAA + 0.2mg/L kinetin and single treatment of 0.2mg/L BAP were equally effective for bud and shoot formation from cultures in three cultivars. Auxin(2,4-D, NAA) treatment enhanced callus formation from cultures. Also the shoot apices of cv. Dunggunma produced a lot of callus and adventitious buds on culture medium containing 0.05 mg/L NAA and 0.5-1mg/L BAP. Lower medium strength inhibited shoot elongation but did not much affect shoot and bud production from shoot apices of cv. Danma. This results will be applied to obtain the disease-free plant of Chinese yam.