

In-vitro Tuberization in Chinese Yam(*Dioscorea opposita* Thunb)

Jong-Hee Shin*, Sang-Jo Park, Bong-Ho Lee, Heun-Mi Kim¹, 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 mass-propagation system through in-vitro tuberization and improvement of its sprouting at in-vivo condition.

Materials and Methods

1. Materials :

Nodal stem pieces of *Dioscorea opposita* were obtained from plantlets *in-vitro* grown

2. Methods :

- The individual effects of sucrose(1.5~9%), GA₃(0~0.3mg/L) and medium solidity were investigated on in-vitro tuberization in nodal stem segment cultures .
- Effects of temperature and cutting treatment on microtuber sprouting were evaluated.

Results and Discussion

Nodal cuttings were cultured in vitro to assess the influence of sucrose, GA₃ and medium solidity on the production of microtubers. Microtubers were either directly formed at the axil of the explant or at the leaf axils of the developed plantlet. The GA₃ addition and liquid medium were effective for microtuber formation, whereas the sucrose concentration of medium(MS basal medium) was not effective for microtuber formation from cultures. The in-vitro microtubers chilled(4°C) for three month could be successfully sprouted to in vivo conditions. The best result in tuber-sprouting was obtained from incubating the chilled microtuber at 30°C Using un-chilled microtuber, the tuber sprouting rate was very low(20%). Tuber cutting was not effective for sprouting from separated tuber but effective on bottom part of tuber. The GA₃ application inhibited the tuber sprout. The genotypical difference in microtuber sprouting was not founded. Microtubers are seen as a useful means of international germplasm distribution as well as of propagation of planting material.