

D204 Micropropagation of *Achyranthes japonica* through Axillary Buds Culture

Kwang Soo Kim^{*1}, Myeong Won Kim², Nak Sul Seong³ and Baik Hwang¹
Hormone Research Center & Department of Biology, Chonnam National University¹
Department of Biology, Yonsei University²
National Crop Experiment Station, R. D. A³

The optimal culture condition for *in vitro* multiplication from axillary buds of *Achyranthes japonica* was investigated, which dried roots are one of the oriental medicine used for diuretics, tonics, and as a remedy for blood stasis such as arthralgia. In examination of MS medium supplemented with 0 - 2 mg/l NAA, 2,4-D and 0 - 5 mg/l BA alone or in combinations, the highest average number of shoots was obtained in 1 mg/l NAA and 2 mg/l BA after 6 weeks: 18 adventitious shoots per node. Although the regeneration rates were less than the former condition, optimal combination allowed the production of more shoots with a suitable size for intact plants was 0.5 mg/l NAA and 1.0 mg/l BA. Roots from regenerated shoots were induced after 3 weeks culture, transferred to 1/2 MS medium supplemented with 0.1mg/l IBA. Micropropagated plants were successfully transferred to soil. (HRC-95-0202)

D205 Developmental Changes of Symplastic and Apoplastic Sugar Contents of Galls Formed on Leaf of Elm (*Zelkova serrata* Makin) by a Aphid (*Paracolopha morrison* Baker)

Up-Dong Yeo, Youn-Kyung Chai*, Won-Koo Lee¹⁾ and Naoki Sakurai²⁾

¹⁾Department of Biology, Chonbuk National University

²⁾Department of Environmental Sciences, Hiroshima University

To understand the role of gall in interaction with aphid, the changes of symplastic and apoplastic sugar contents of the galls during its growth and development was determined from May 2 to June 8, 1996. The sugar contents of the symplasts (MeOH and hot water fractions) decreased with developmental stages. In the apoplasts (cell walls), level of the pectic substances (2-3 mg (g fr wt)⁻¹) was not changed. The hemicellulose substances reached the maximum level at May 31. Among neutral sugar components of hemicellulose substances, xylose and arabinose increased, suggesting that the xylan and arabinogalactan polysaccharides were enhanced during development of the gall. The cellulose reached the maximum level at May 31, then decreased. The maximum cellulose content was estimated to ca. 45 mg (g fr wt)⁻¹ around May 20. During development of gall, its relationship with a life cycle of the aphid was discussed.