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## Somatic Embryogenesis and Plant Regeneration of *Aralia elata* Cultivar 'Zaoh'.

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### Objectives

One serious problem in *Aralia elata* cultivation is the disease caused by *Phytophthora* infection. The cultivar 'Zaoh' is known to be resistant to the disease among various *Aralia elata* varieties. In the present study, we investigated several cultural factors to develop an efficient micro-propagation system for the cultivar via somatic embryogenesis

### Material and Methods

*In vitro* growing plantlets which were maintained on half-strength MS basal medium were used as stock plants. Three different types of explants, i.e. leaf, petiole and root segment were used. MS medium supplemented with four different PGRs, 3% sucrose and 0.3% gelrite were tested to induce callus as well as somatic embryos (SEs). After 4 weeks in culture initiation, the cultures were subcultured on to half-strength MS medium containing 3 different gelling agents combined with 4 different levels of ABA to induce normal somatic embryos.

### Results and Discussion

Depending on explants, the optimum PGRs requirement differed in the induction of callus and SEs. When root and petiole explants were used, most SEs were induced on MS medium with 1.0 mg/L 2,4-D. On the other hand, leaf explants appeared to require MS medium with 1.0 mg/L 2,4-D + 0.01 mg/L TDZ and 1 g/L L-glutamine. The induction patterns of SEs also differed depending on the explants; IEDC type SEs were induced from root and petiole explants after callus differentiation, but most PEDC type SEs were induced from leaf explants directly without callusing. Normal looking SEs were formed by ABA treatment and the optimum level appeared to be 0.2 mg/L. Generally SEs induction was not influenced by different gelling agents, though slightly better results obtained on gelrite gelled medium. On 1/2 MS basal medium, germinating SEs were readily converted to plantlets. Above results suggest that feasible micropropagation of the cultivar 'Zaoh' of *A. elata* is possible via somatic embryogenesis.

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