

E-E3-19

Effect of thidiazuron on adventitious shoot regeneration from cotyledon and hypocotyl explants and in vitro rooting in *Ligustrum obtusifolium* S. et Z.

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Regeneration of adventitious shoots from cotyledon and hypocotyl segment of *Ligustrum obtusifolium* S. et Z. has been achieved using 10-day-old seedling in vitro. Over the twenty five percent of cotyledon or hypocotyl explants produced adventitious shoots on medium with 1-2 mg/L TDZ alone. Hypocotyl segments were the most efficient explants for adventitious shoot formation compared to cotyledon segments. Adventitious shoot formation was largely influenced by explant size. 1-2 mm size of cotyledon and hypocotyls were more efficient compared to 3-4 mm size of explants. The best response in terms of frequency of shoot regeneration (35.5%) was observed on medium supplemented with 2.0 mg/L TDZ. but number of shoots per explant (12 shoots per explant) was more better on medium supplemented with 1.0 mg/L TDZ. The regenerated shoots were elongated on MS medium with 1.0 mg/L BA and the elongated shoots were rooted on 1/2 MS medium supplemented with 0.2 mg/L IBA.

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E-E3-20

Effect of rhizobacteria on the control of root rot and root growth of *Panax ginseng*

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Ginseng (*Panax ginseng*) is one of the most widely cultivated medicinal herbs in Korea. During 3 or 5 years cultivation of ginseng, yield losses can reach as high as 30-60% due to numerous diseases in Korea. *Bacillus* sp. B1141 and *Burkholderia cepacia* AB100 were selected for promising biocontrol agents by screening against root rot caused by *Cylindrocarpon destructans* in previous experiments. Pre-inoculation of the isolates formulated with bentonite to one-year-old root resulted in significant biocontrol efficacy against ginseng root rot in a replant field. Treatment of the isolates revealed significantly increased root growth of *Panax ginseng* compared to those of untreated control or bentonite alone. Furthermore, *Bacillus* sp. B1141 stimulated the uptake of Mg, Fe, and Zn, while *B. cepacia* AB100 stimulated the uptake of P, Ca, and Zn from ginseng root compared to untreated control.

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