

## The Effect of Dimethyltin Phenylarsonate $\text{PhAsO}_3\text{SnMe}_2$ on the Roots, Shoots and Rhizogenesis of *Chrysanthemum* in Vitro

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### SUMMARY

This study presents the effects of applying dimethyltin phenylarsonate,  $\text{PhAsO}_3\text{SnMe}_2$  on chrysanthemum microcuttings in vitro (Kurtz *et al.*, 1991; Harsan *et al.*, 2003; Harsan *et al.*, 2007). The effects of applying dimethyltin phenylarsonate and phenylarsonic acid were compared with an untreated control. The effects were determined by monitoring the rizogenesis, the elongation of the roots and the shoot number. Dimethyltin phenylarsonate inhibits the rizogenesis at the 0.5 mg/100 ml of medium concentration, in comparison with the control. On the other hand the ligand acts as a rooting stimulator, generating 34% more roots than the control and 86% more roots than the dimethyltin phenylarsonate treated microcuttings. The elongation of the roots is affected by the treatment with both chemical compounds: dimethyltin phenylarsonate and phenylarsonic acid. The length of the roots is 47% smaller when treating the plants with phenylarsonic acid and 35% smaller when using dimethyltin phenylarsonate, both applied at the 0.5 mg/100 ml of medium concentration. When used in a 1.5 mg/100 ml of medium concentration the dimethyltin phenylarsonate lead to a decrease of the roots' length by 43%, while the ligand totally inhibited the root development. This shows the protective effect that the organotin fraction has. The shoot production is stimulated by the dimethyltin phenylarsonate, resulting in a 23% increase in comparison with the control, for the 1.5 mg/100 ml of medium concentration. The phenylarsonic acid only acts as a shoot production stimulator at the 0.5 mg/100 ml of medium concentration, increasing the shoot production by 30%. In the higher concentration, 1.5 mg/100 ml of medium, the ligand has an almost total inhibitory effect (up to 92% less shoot produced).

**Keywords:** dimethyltinphenylarsonate, chrysanthemum, in vitro, effect

### REFERENCES

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