

**EFFECTS OF PLANT GROWTH REGULATORS ON *IN VITRO* DEVELOPMENT OF *JUNIPERUS CHINENSIS*
VAR. *SARGENTII* AND *MICROBIOTA DECUSSATA* (CUPRESSACEAE) SHOOTS**

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SUMMARY

Juniperus chinensis var. *sargentii* A. Henry and *Microbiota decussata* Kom. are rare taxa of the family Cupressaceae. Specifics of *in vitro* cultivation of these plants and the effects of plant growth regulators on their shoot development are considered in the present work. As explants, 1-year-old shoots were used. Four variants of multi-stage shoot sterilization were tested. The optimal results were achieved when shoots were consecutively treated with solutions of Ridomil Gold (2.5 %), Domestos (50 %), and Diocidum (0.2 %). The efficiency of sterilization of *J. chinensis* var. *sargentii* and *M. decussata* Kom. shoots reached 58 % and 56 %, respectively. When Diocidum was changed for Chlorhexidine, shoots died.

The effects of auxins (such as indole-3-butyric acid (IBA), 3-indoleacetic acid (IAA), 1-naphthaleneacetic acid (NAA), and picloram (Pic)) and cytokines (6-benzylaminopurine (BAP) and 2-izopentyladenine (2iP)) on bud development and shoot growth were studied. In *J. chinensis* var. *sargentii*, development of terminal buds became predominant on the media with auxins; development of lateral buds, on the media with cytokines. The medium supplemented with 0.1 mg/l IBA proved to be the most effective for the growth of *J. chinensis* var. *sargentii* shoots. Three months later, up to 12 shoots reaching a length of 1.1–1.5 cm developed on each explant. When the IBA concentration in the medium was raised, the number of buds and the length of shoots reduced in *J. chinensis* var. *sargentii* and increased in *M. decussata*. Also, unlike *J. chinensis* var. *sargentii*, lateral buds in *M. decussata* developed predominantly both on the media with cytokines and in those with auxins. The effect of auxins on growth of *M. decussata* shoots was more pronounced as compared to that of cytokines. The development of the lateral buds in *M. decussata* influenced by exogenous auxins require further investigation. The maximum number of lateral buds in *M. decussata*, recorded from the shoots on the medium with 1.0 mg/l IBA, varied within 4–11 per explant; on some of them, there were up to 15 shoots. Adventitious roots developed in the basal part of initial *M. decussata* shoots after three months of cultivation on MS medium with 0.1 mg/l IBA.

Key words: Cupressaceae, *Juniperus chinensis* var. *sargentii*, *Microbiota decussata*, *in vitro* culture, plant growth regulators, shoot development.