

Usage of *in vitro* Produced Bulblets as an Explant Source for *Bellevalia tauri* an Endemic Plant of Turkey

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Aim of the study: Propagation of geophytes which has got underground storage organs by alternative production methods instead of collecting from their natural habitat is a necessity to protect biological diversity. *In vitro* culture is one of these alternative production methods for breeding and multiplication of several ornamental plants. Even though, this technique has been widely used as an area of biotechnology, the contamination caused by the use of underground storage organs is the most important problem of geophyte production. Different sterilization methods and explant sources are used to overcome the contamination in micropropagation of various geophytes. *Bellevalia tauri* Feinbrun which has a great potential as an ornamental plant is an endemic geophyte of Turkey. When the underground storage organ of *Bellevalia tauri* is used as explant source, a very limited number of bulblets are obtained due to the contamination. In this research, it was aimed to increase the number of bulblets using *in vitro* produced primary bulblets as an explant source.

Material and Methods: The *in vitro* produced bulblets of *B. tauri* were used as an explant source. The bulblets which were obtained from the immature embryo explants by tissue culture methods were longitudinally cut into 4 parts. Explants were placed on MS medium supplemented with various combinations of 6-benzylaminopurine (BAP) and α naphthaleneacetic acid (NAA) or 2,4-D (2,4-dichlorophenoxyacetic acid) and 30 g l⁻¹ sucrose and 7g l⁻¹ agar. The cultures were kept at 25±1 °C under 16-h light (40 μ mol m⁻² s⁻¹) condition.

Results: Although any sterilization process was performed, no contamination was observed at *in vitro* produced primary bulblets explants. Secondary bulblets were obtained on bulb scales of *in vitro* produced primary bulblets on MS medium supplemented with different combinations NAA and BAP. There was no new bulblet formation on MS medium containing 2,4-D. The best result was achieved on MS medium containing 1 mg l⁻¹ NAA and 0.25 mg l⁻¹ BAP. On this medium, 2.83 bulblets per explant were obtained.

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Keywords: *Bellevalia tauri*, contamination, *in vitro* culture, secondary bulblet formation.