# BIOTECHNOLOGICAL PRODUCTION OF *IRIS SPURIA L.* PLANT MATERIAL

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The study proves the relationship between the accumulation of quercetin and the hormonal composition of culture media, which allows for the regulation of these polyphenols being accumulated during the production of the plant material *Iris spuria L.*

*Iris spuria L.* (false iris) is a perennial plant 30 – 90 cm tall. The flowering stem is slightly flattened, powerful, rounded, articulated, slightly branched, bearing from three to eight flowers. The leaves are 30 – 40 cm long, 1 – 2 cm wide, erect, slender, sword-shaped, acuminate, glaucous and have an unpleasant smell when rubbed. The bracts are acutely keeled, densely leather-like. The petals are 4-5 cm long and 6-8 cm in diameter, lilac or bluish-violet, with dark veining, without aroma, sessile or nearly sessile. It blooms in May and June. It flowers in July-August. The rhizomes are 1-1.5 cm thick. It is hydrophilous, but drought tolerant. It is native to Central and Eastern Europe, and Asia [1].

For the first time, a series of studies aimed at multiplying plant materials of *Iris spuria L.* resulted in the development of culture media and cultivation schemes. In the stage of micropropagation as such, the most optimal content in the culture medium was found to be 2.5-5.0 μm BAP. To ensure a more complete realization of morphogenetic potentials, it is necessary to alternate phytohormone and hormone-free media. In this case, L-glutamine and adenine sulfate should be added to hormone-free media in the amount of 100 mg/l (MS+100 mg/l L-glutamine+100 mg/l adenine sulfate). A universal aeroponic installation can be used to adapt offspring to non-sterile conditions and to multiply stock plant material [2].

Qualitative and quantitative compositions of the extractives removed in a Soxhlet apparatus from the biotechnological plant material of *Iris spuria* depends on the solvent polarity. The amount of extractives increases with accelerated polarity (96 % ethanol → 60 % ethanol → water). Phenols, condensed and hydrolyzable tannins, alkaloids, glycosides are extracted [3].

**References:**

1 Shawl A. S., Vishwapaul Z. A., Kalla A. K. (1984). Isoflavones of Iris spuria. *Phytochemistry.* Vol.23(10), P**.** 2405–2406.

2 Tikhomirova L. I., Bazarnova N. G., Ilyicheva T. N., Martirosyan Yu. Ts. (2018). Production of plant materials of Siberian Iris (*Iris sibirica L.*) through biotechnological methods. *Chemistry of Plant Raw Material*. No.4, P. 235-245.

3 Farag S. F., Kimura Y., Ito H., Takayasu J., Tokuda H., Hatano T. (2009). New isoflavone glycosides from *Iris spuria L*. (Calizona) cultivated in Egypt. *J. Nat. Med.* Vol. 63(1). P. 91–95.