

## SUMMARY

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### **Suspension culture of *Trifolium pratense* L. III**

This work was based on finding new information, which could contribute to successful elicitation. It was tested, whether lead chloride is a well chosen elicitor, and also what is its beneficial concentration and action time on plant culture *in vitro*. Further tests were aimed to find whether the concentrations of the elicitor were successfully chosen so that they could support increased production of secondary metabolites. The plant culture was cultivated in Gamborg's nutrient medium with an addition of 2 mg.l<sup>-1</sup> 2,4-dichlorophenoxyacetic acid and 2 mg.l<sup>-1</sup> 6-benzylaminopurine, at temperature of 25°C and period of 16 hours light/8 hours dark on slow moving roller. Influence of lead chloride solution (four different concentrations, 6, 24, 48 and 168 hours of action) on production of flavonoids and isoflavonoids was being observed.

Maximum content of flavonoids (0.451 % of content of the sample), found using photometric determination according to Pharmacopeia Bohemica 2009, was proven in the suspension culture *Trifolium Pratense* L. (variety DO-8) after 48-hour elicitation and concentration of 1 µmol. In the suspension culture *Trifolium Pratense* L. (variety Sprint) the maximum content (0.435% of content of the sample) was found after 6-hour application of elicitor of 1 µmol concentration.

The maximum content of isoflavonoids (0.28 % genistin) was found using the HPLC method in the *Trifolium Pratense* L. (variety Sprint) after 6-hour application of elicitor of concentration 1 µmol.