

# SUMMARY

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## **The influence of elicitation on the production of *Trifolium pratense* L. suspension culture.**

The proces of elicitation makes use of the kapacity of plants and plant cells cultivated *in vitro* to react to various stress stimuli by a number of protective reactions leading to increased accumulation of secondary metabolites. The paper examined the effect of four concentrations of calcium ions on the production of flavonoids and isoflavonoids by means in the suspension culture of *Trifolium pretense* L. which was elicited by an abiotic elicitor – 10  $\mu\text{mol}$  solution of lead dichloride. The culture was cultivated on a Gamborg medium with an addition of 2,4-dichlorophenoxyacetic acid and 2  $\text{mg.l}^{-1}$  6- benzylaminopurine.

The maximal content of flavonoids found by a photometric determination according to Pharmacopoeia Bohemica 2005 was demonstrated in the suspension culture *Trifolium pratense* L. (0,355 %) after 6 hour administration of the elicitor and a 1 mmol calcium chloride solution. In comparison with the control and elicited groups, the production was stimulated by 63 % and 25 % respectively.

The maximal content of isoflavonoids (genistin, daidzein, genistein, formononetin and biochanin A) found by a HPLC metod was demonstrated in the suspension culture *Trifolium pratense* L. (variety DO-9) after 48 hour administration of the elicitor and a 1 mmol kalcium chloride solution. .