ABSTRACT

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A principal precondition for successful elicitation used to increase the production of secondary metabolites is, among other, finding a suitable elicitor, its concentration and the optimal period of time of the action of the elicitor on the plant culture *in vitro*, which was the aim of the present diploma thesis.

The effect was examined of a 6, 24, 48 and 168 hour action of the solution of chitosan (in four concentrations) on the production of flavonoids in the suspension culture *Trifolium pratense* L. (variety Sprint, Tempus and DO-8).

The culture was cultivated in Gamborg medium to which 2 mg/l of 2,4-dichlorophenoxyacetic acid and 2 mg/l of 6-benzylaminopurine were added, at the temperature of 25°C and 16 hours light/8 hours dark period.

The best elicitation effect of chitosan on the production of flavonoids was the lowest concentration of 1 mg/100ml in all three studied varieties after 48 hours of application.