SUMMARY

Lenka Klabanová

Suspension Culture of *Trifolium pratense* L. II

A principial precondition for succesful elicitation used to increase the production of secondary metabolities is finding a suitable elicitor, its concentration and the optimal period of time of the action of the elicitor on the plant culture *in vitro*. It was the aim of the present thesis. The effect was examined of a 6, 24, 48 and 168 hours action of the solution of aluminium trichloride (in concetrations 0,1 μmol, 1 μmol, 10 μmol, 100 μmol) on the production of flavonoids and isoflavonoids in the suspension culture of *Trifolium pratense* L. variety Tempus and Sprint. Culture was cultivated on a Gamborg medium with an addition of 2 $mg.l^{-1}$ of 2,4-dichlorophenoxyacetic acid and 2 $mg.l^{-1}$ of 6-benzylaminopurine, at the temperature of 25˚C and 16 hours light/8 hours dark period.

The maximal content of flavonoids found by a photometric determination according to Pharmacopoeia Bohemica 2009 was demonstrated in the suspension culture of *Trifolium pratense* L. variety Tempus (0,276%) after a 168hour action of the elicitor of the 100 μmol concentration. Compared with the control culture was stimulated production of 283%. In *Trifolium pratense* L. variety Sprint found a maximal content (0.308%) after a 24hour action of the elicitor of the 10 μmol concentration. Compared with the control culture was stimulated production of 271%.

The maximal content of isoflavonoids (genistin, daidzein, genistein) found by a HPLC method was demonstrated in variety Tempus after a 168hour action of the elicitor of the 0,1 μmol concentration and in variety Sprint after a 168hour action of the elicitor of the 10 μmol concentration and after 6hour action of the elicitor of the 100 μmol concentration.