Abstract

Vesela T.: Influence of plant biological control on production of secondary metabolites of *Papaver somniferum* IV. Diploma thesis, Charles University, Faculty of Pharmacy in Hradec Kralove, Department of pharmaceutical botany, Hradec Kralove 2018.

In the experimental part of the thesis was studied the influence of plant biological control on the production of the main pharmaceutically usable secondary metabolites of opium poppy (*Papaver somniferum L*.). The contents of alkaloids morphine, codeine, thebain, papaverine and narcotine were monitored in the capsules and stems. Two poppy varieties, Orbis and Lazur, were selected for the experiment. Half of the plots were treated with the fungicidal biopreparate Polyversum, containing the germinable spores of oomycete *Pythium oligandrum*. *Pythium oligandrum* directly attacks the fungal pathogens. It also uses indirect control mechanisms, induces resistance in plants and promotes their growth. The remaining untreated plots served as a reference check. The extract was prepared from the individual samples. Subsequent analysis was performed using high performance liquid chromatography. The results show no positive effect of treatment on the content of all quantified alkaloids in poppy straw. Biosynthesis of alkaloids and *Pythium oligandrum* activity can be affected by external factors. This biological control in the experiment did not prove to be effective to increase the production of monitored alkaloids of poppy poppy.

Key words: *Papaver somniferum L*., alkaloids, biological control, *Pythium oligandrum*