

ABSTRACT

Charles University

Faculty of Pharmacy in Hradec Králové

Department of pharmaceutical botany and ecology

Candidate: Bc. Andrea Gunčagová

Supervisor: prof. RNDr. Luděk Jahodář, CSc.

Title of diploma thesis: The analysis of *Psilocybe* constituents II.

The aim of this thesis was to analyse *Psilocybe* constituents, to plot the places of occurrence of chosen *Psilocybe* brands and also to determine their water content. The thesis deals with 22 samples that originate in 10 habitats in Slovakia and Moravian–Silesian region. Accuracy of brand specification was supervised by a member of mycological society. *Psilocybe serbica* var. *bohemica* was identified in 2, whereas *Psilocybe semilanceata* in 8 habitats. The average content of H₂O in samples was 87,07 % ± 10,91 %. All of the samples were analysed by LC-MS/MS (LIT) method. The qualitative analysis of determined substances showed the presence of psilocine (PSC) and psilocybine (PSB) in all samples. The results of quantitative analysis (expressed in percentage of dry matter) are similar in particular habitats, but there is a significant difference between two specific brands of *Psilocybe* mushrooms. The content of determined alkaloids in *P. bohemica* was: PSC 0,001–0,011 % a PSB 0,01–0,07%.

P. semilanceata contained 0,0005 – 0,011 % PSC a 0,074 – 0,763% PSB. In the end we can claim that the chosen analytical method LC-MS/MS was proved by the analysis because of the high level of accuracy and specificity. The results of thesis have supported the future optimization and validation of the analytical method for mushroom samples with the possibility to broaden a number of samples from various habitats in Slovakia.

Keywords:

Psilocybe, psilocine, psilocybine, LC-MS/MS (LIT)