

ABSTRACT

In my diploma thesis I was dealing with the cultivation conditions suitable for the growth of *Langermannia gigantea* (giant puffball). Experimental works comprised a study of utilization of different substrates by this fungus and optimization of cultivation conditions.

On the basis of the obtained results, for the first time, the important chitinolytic ability of this fungus was reported. This makes the fungus potentially important for applications in biotechnology. Chitinase production was repressed in the presence of glucose. The ability of giant puffball to associate with cell walls of 3 species of microscopic fungi (*Chrysosporium pannorum*, *Cladosporium cladosporioides* and *Aspergillus versicolor*) was noted. DNA, being found in litter of plant, microbial and animal origin, may represent the important source of mineral nutrients (nitrogen, phosphorus) and energy for giant puffball. The temperature optimum for the growth is in the range of 20-25 °C.