

Abstract:

This bachelor thesis, in literature review, deals with bioaerosol issue, describes meaning of pollen, ways of pollen spreading and its influence on human health, summarize methods of pollen sampling from the air and common ways of pollen grains identification. In the experimental part, the use of the first stage of a High Volumetric Cascade Impactor (Hi-Vol) BGI-900 for bioaerosol sampling and subsequent SEM analysis was proved. Method of pollen separation from the impaction substrate, polyurethane foam, into homogeneous deposit on Nylon filter was optimized. Representative portion of the deposit was analyzed by SEM. There were taken 485 SEM pictures from 12 samples in 3 localities in the ČR. Pollen grains were identified in 295 SEM and determined into 9 genus and 4 families and grain deformities were quantified to be 24, 18, 50% for Prague, Brezno and Láz localities. Number of pollen increased with total aerosol mass in Prague locality only. There also identified insect secretion products borochohomes in the samples.

Key words: pollen, pollen grain, bioaerosol, cascade impactor, SEM.