



Microscopic and molecular detection of *Alternaria* spores in air samples from Poland

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Abstract

The presence of fungal spores in the air is indispensable for the propagation of numerous plant pathogenic species, and as such, its monitoring may play an important role as a part of IPM systems. *Alternaria* is one of the most common plant pathogens, which collectively causes a range of diseases with impact on a large variety of important agronomic host plants including cereals, ornamentals, oilseed rape, vegetables and fruits. The spores of this genus are not only found outdoors but also indoors, causing allergies and even the symptoms of asthma in sensitive patients. The beginning of spore release and the time of the maximum concentration of spores in air samples greatly depend on weather conditions. Monitoring of spores using spore samplers enables identification of these periods. Monitoring of concentrations of *Alternaria* spores was done at daily intervals from 15 March until 15 November 2008-2010 in Poznan, Lublin and Rzeszow. One half of the tape originating from a spore trap was stained with Trypan Blue and the number of *Alternaria* spores was examined with a light microscope. Samples of DNA extracted from the other half of tapes using CTAB method were used for molecular detection using species-specific primers targeted against ITS fragments.

The concentration of airborne spores correlated to fluctuations in the levels of DNA of *Alternaria* sp.