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## Long-lasting changes in the species spectrum of cucurbit powdery mildew in the Czech Republic – influence of air temperature changes or random effect?

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Two ectoparasite powdery mildew species *Golovinomyces cichoracearum* (Gc) and *Podosphaera xanthii* (Px) occurring on cucurbits differ, besides other characteristics, by specific ecologic requirements. While Px is common in subtropical and tropical areas and greenhouse crops, Gc occurs more frequently in temperate and cooler areas under field conditions. Their presence on cucurbit field crops (*Cucurbita pepo*, *C. maxima*, *Cucumis sativus*) was monitored in the Czechoslovakia (1979–1980) and in the Czech Republic (1995–2007). Their identification was carried out by microscopic observation of the morphological characteristics of the dry conidia on 1527 leaf samples. Data on air temperature in 1979–2007 were provided by the Czech Hydrometeorological Institute. In 1979–1980 Gc was identified in 86.0% of samples, Px in 14.0% samples, there was no mixed infection; prevalence of Px was recorded in South Slovakia and South Moravia, and on crops under cover. Since 1995 species Px was recorded each year on field crops in different locations of Bohemia and Moravia, usually in mixed infection with Gc. The average year temperature of 8.1°C for period 1992–2007 was higher than corresponding value of 7.4°C in 1979–1983. Similarly, average temperature in vegetation season of 16.2°C in 1992–2007 was higher than corresponding value of 15.7°C in 1979–1983. The higher air temperature can positively influence spreading of Px in the Czech Republic. Climate variability and effect of their changes are discussed in relationship to the geographic distribution and geographic patterns of cucurbit powdery mildews.

**Keywords:**

*Golovinomyces cichoracearum*; *Podosphaera xanthii*; Cucurbitaceae; epidemiology; air temperature; geographic distribution

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