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Current and historical occurrence of species of the genus *Sitophilus* in Czech stores: 70 years perspective

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ABSTRACT

Not only current but also historical data are invaluable for identifying long-term trends in pest distribution and the factors driving these changes. However, detailed and updated faunistic surveys of storage pests, including key primary pests, are lacking in most European countries. This study aimed to investigate the current and historical distribution of species from the genus *Sitophilus* in the Czech Republic (CZ) and to identify trends in their occurrence over time. To achieve this, we collected and analyzed pest samples from 241 storage locations across CZ between 2019 and 2024 and conducted an in-depth analysis of historical pest survey reports spanning 70 years. Our findings indicate that *S. granarius* and *S. oryzae* are currently widespread in the CZ, while *S. zeamais* is absent. *Sitophilus granarius* was approximately twice as frequent in samples compared to *S. oryzae*. An analysis of historical records revealed significant variations in their occurrence over time. Before the 1950s, *S. granarius* was the only established species in the region, while *S. oryzae* was a rare pest, likely dependent on imported grain. During the 1960s, populations and occurrence of both species declined substantially. Recovery began in the 1970s and 1980s, during which *S. oryzae* temporarily became more abundant than *S. granarius*. However, our recent survey shows that *S. granarius* has again become the dominant species. The reasons for these temporal fluctuations in *Sitophilus* spp. populations are discussed.