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SARCODONTIA CROCEA (BASIDIOMYCOTA), NEW TO LIPETSK REGION

SARCODONTIA CROCEA (BASIDIOMYCOTA) – НОВЫЙ ВИД ДЛЯ ЛИПЕЦКОЙ ОБЛАСТИ

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Abstract

The first findings of *Sarcodontia crocea* (Polyporales, Basidiomycota) in the Lipetsk Region are reported from the Krasninsky District. The fungal specimens were collected on *Malus domestica* wood and deposited in the Mycological Herbarium of the Komarov Botanical Institute (LE). Distribution in adjacent Russian regions and ecological peculiarities of this species are briefly discussed.

Аннотация

Приводятся сведения о первых находках вида *Sarcodontia crocea* (Polyporales, Basidiomycota) на территории Краснинского района Липецкой области. Образцы грибов собраны на древесине *Malus domestica* и хранятся в Микологическом гербарии Ботанического института им. В.Л. Комарова РАН (LE). Кратко обсуждается распространение этого вида в соседних регионах России и особенности его экологии.

Keywords: Central Russian Upland, distribution of fungi, fungal phytopathogens, species diversity, wood-inhabiting fungi.

Ключевые слова: Среднерусская возвышенность, распространение грибов, грибные фитопатогены, видовое разнообразие, деревообитающие грибы.

Introduction

Data on the distribution of phytopathogenic fungal species are of interest not only for fundamental studies of the patterns of biodiversity geographical distribution [Pimm et al., 2014], but are also an essential basis for planning and implementation of agricultural plant diseases control [Prakh, Mishchenko, 2013; Oliva et al., 2020]. Xylotrophic fungi represent a specific group of phytopathogens, as they can be characterized by long terms of development in living trees [Zmitrovich et al., 2018], resulting in their gradual drying up and consequent death.

The xylotrophic fungi species richness, primarily of aphyllorphoroid basidiomycetes, known for the Lipetsk Region is currently estimated as about 300 species [Sarycheva et al., 2009; Sarycheva, 2016; Sarycheva et al., 2017; Volobuev et al., 2018]. At the same time, a number of xylotrophic species that have not yet been registered for the region are characterized by prominent ecological peculiarities associated with substrate and habitat preferences. One of

these ecologically well-determined aphyllorphoroid species is *Sarcodontia crocea* (Schwein.) Kotl. (*Polyporales*, *Basidiomycota*), which inhabits mainly old apple orchards of Europe [Szczepkowski, 2010], including the Central Russian Upland [Shakhova, Volobuev, 2020]. This study reports the first findings of *S. crocea* in the Lipetsk Region.

Results and discussion

Material: Lipetsk Region, Krasninsky District, vicinity of the Znamenka village, 12.VIII.2020, old apple orchard, 52.832122 N, 38.746624 E, on living trunks of *M. domestica* (LE 305014; LE 305023), on dry dead standing tree of *M. domestica* (LE 305024), 52.827872 N, 38.761596 E, on living trunk of *M. domestica* (LE 305015), old apple orchard with an undergrowth of *Acer platanoides*, 52.832144 N, 38.747670 E, on dry dead standing tree of *M. domestica* (LE 305011), on branch of living *M. domestica* tree (LE 305012), on living trunk of *M. domestica* (LE 305013), leg. S.V. Volobuev. The identification of specimens was performed based on macro- and microscopic characteristics using the monograph [Eriksson et al., 1981].

Five of the seven *S. crocea* specimens from the Lipetsk Region (see Figure) were found on the living trees of *M. domestica*. Only two specimens were collected from dry dead standing *M. domestica* trees, for which *S. crocea* was a potential cause of drying and death. The drying up process of the individual branches and subsequently the whole trunk is apparently connected with disruption of water transport and mineral nutrition by the growth of *S. crocea* mycelium within xylem vessels.



Fig. Basidiocarps of *Sarcodontia crocea* on living trees of *Malus domestica*
Рис. Базидиомы *Sarcodontia crocea* на живых деревьях *Malus domestica*

S. crocea is known for four adjacent regions – Kursk, Oryol, Tula, and Voronezh Regions. The species was cited as *Hydnum schiedermayeri* Heufl. (a synonym of *S. crocea*) from Kursk and Fatezh areas of the Kursk Governorate [Bondarzew, 1906] as well as from Nizhnedevitsky Uyezd and Ostrogozhsky Uyezd of the Voronezh Governorate [Bondarzew, Lebedeva, 1914]. The modern findings of *S. crocea* were registered in Korsakovsky, Mtsensky, and Verkhovskiy Districts of the Oryol Region [Volobuev, Bondartseva, 2012; Volobuev, 2014; Volobuev, 2015], and in Leninsky District of the Tula Region [Svetasheva, Freze, 2013].

S. crocea predominantly grows on pruned apple-trees (*Malus* spp.) in orchards and gardens, that is determines its special phytopathological importance in regions of extensive horticulture. Simultaneously there are few known findings of this species in Europe on other fruit and broad-leaved trees – *Pyrus*, *Prunus*, *Sorbus*, *Fraxinus* [Eriksson et al., 1981], *Quercus* [Venturella et al., 2006], *Acer* [Volobuev, Bondartseva, 2012].

Under natural habitat conditions, *S. crocea* is associated with at least 19 species of beetles (Coleoptera) [Chachula et al., 2019], being one of important components in insect-fungus relationships and ecosystem sustainability.

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