USING DIFFERENT METHODS FOR THE CONTROL OF INVASIVE PHYTOPHAGES IN THE BREST REGION

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Introduction. Biological invasion is a very important component of global environmental change and imposes significant economic and ecological damages (Lars & Santanu, 2008). The Brest region, located in the south-west of Belarus, is characterized by mild climatic conditions favorable for the growth of thermophilic introduced plants. However, in the last decades their vitality, and, consequently, decorativeness, has significantly decreased in green grands caused by invasive leaf phytophagous species. This article presents the result of our study (2016–2020) on invasive pests: *Parectopa robiniella* Clemens (*Robinia pseudoacacia* L.), *Cameraria ohridella* Deschka, Dimič (*Aesculus hippocastanum* L.), *Phyllonorycter issikii* Kumata (*Tilia cordata* Mill and *Tilia platyphyllos* Scop.) and the first registration *Cydalima perspectalis* Walker (*Buxus sempervirens* L.) in Brest (Sinchuk et al., 2020).

Material and methods. The material was collected in Brest recreation park and in the botanical garden of Ecology Center (Brest State A.S. Pushkin University). The species were identified by imago. The specimen were deposited in private collection of A. Sinchuk. The degree of damage to plant leaves was determined and methods for pest control (chemical and mechanical) were tested.

Results. The analysis of damage to the studied plants showed its high variability (20–50 %) and territorial spread, which is primarily due to the large number of pest generations in favorable conditions. At the same time, the species-specificity of plants in the degree of damage was noted, so the population of large-leaved linden was 40 % lower than that of small-leaved linden, *Robinia ispida* and *Aesculus octandra* and *Aesculus pavia* are practically not affected in comparison with the studied species of horse chestnut and robinia.

Evaluation of the effectiveness of agrotechnical control measures showed that autumn harvesting of foliage in *A. hippocastanum* plantations can reduce the degree of damage to leaf blades by 2.5 times, while in *Robinia* plantations it can reduce the population of *P. robiniella* by 1.8 times.

Of particular concern is the active invasion of *C. perspectalis* in the green stands of Brest can lead to serious consequences for *B. sempervirens*. In the central part of Brest, we caught an imago, collected larvae and pupae and revealed significant damage on plants 20–30 years old. It is noted that the use of the tank mixture of system ("Aktara") and contact ("Karate") insecticides has shown high efficiency in pest control in the garden of Ecology Center.

At present, isolated infected plants have been detected. However, unless it is done in sanitary measures to protect the boxwood plantations, Brest may become the primary hotspot of the settlement of the box tree moth throughout the territory of Belarus.

Conclusion. Thus, in this article, we report the consequences of the activity of four invasive phytophages on ornamental plants and methods of their control in the Brest region, which is very important for the further expansion of their range.

References

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