

Some New Immigrant Phytophagous Insects on Woody Plants in Slovenia

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Abstract

Analysis of alien phytophagous insects and mites introduced into Slovenia in the last two centuries shows that more than 130 introduced species can be considered pests of plants or their products. More than 50 % of them have been discovered in the last 20 years: Hemiptera, Lepidoptera, Coleoptera, Diptera, Thysanoptera, Hymenoptera and Acari. Some of them, which have appeared in the last fifteen years on woody plants, specifically *Dryocosmus kuriphilus*, *Leptoglossus occidentalis*, *Xylosandrus germanus* and *Cinara curvipes* are presented. Their influence to forests is discussed.

Keywords | invasive species, introduced pests, Slovenia

Kurzfassung

Einige neu eingewanderte phytophage Insekten an Gehölzen in Slowenien

Von den in den letzten zwei Jahrhunderten neu in Slowenien aufgetretenen, nicht-heimischen phytophagen Insekten und Milben sind über 130 eingeschleppte Arten Schädlinge von Pflanzen oder deren Produkten. Mehr als die Hälfte wurde in den letzten zwanzig Jahren entdeckt: Hemiptera, Lepidoptera, Coleoptera, Diptera, Thysanoptera, Hymenoptera und Acari. Einige von ihnen, die in den letzten fünfzehn Jahren an Gehölzen aufgetreten sind, im Besonderen *Dryocosmus kuriphilus*, *Leptoglossus occidentalis*, *Xylosandrus germanus* und *Cinara curvipes*, werden vorgestellt. Ihr Einfluss auf Wälder wird diskutiert.

Schlüsselwörter | invasive Arten, eingeschleppte Schädlinge, Slowenien

As in all of Europe, many serious pests in Slovenia originate from different regions of the world. It is assumed that 130 foreign insect and mites species, considered pests to plants and plant products, have been introduced to Slovenia since the 18th century (Seljak and Maček 2009). More than 50 % of them have been discovered in the last 20 years, the most numerous groups are Hemiptera (56.7 %), Lepidoptera (12.7 %), Coleoptera (11.2 %), Diptera (6.7 %), Thysanoptera (6.7 %), Hymenoptera (0.7%) and Acari (3.0 %). Of the introduced species, 32.8 % originate from Asia, 32.1 % from North America, 9 % from Africa, 9 % from South America, and 3.7 % from Australia and New Zealand, while 13.4 % are Mediterranean, cosmopolitan or species of uncertain origin. Hereafter

are presented some immigrant phytophagous insect on woody plants which can affect Slovenian forests.



Figure 1: *Dryocosmus kuriphilus* (photo M. Jurc).

Abbildung 1: *Dryocosmus kuriphilus* (Foto M. Jurc).

Dryocosmus kuriphilus (Yasumatsu, 1951) (Hymenoptera: Cynipidae) was found in 2005 on ten saplings of *Castanea sativa* in four different places in Slovenia. It was introduced in 2004 from Italy with contaminated seedlings. *D. kuriphilus* is now established in Slovenia. According to the evaluation of the Slovenian Forest Service (SFS), there are approximately 253,000 ha of chestnut forests in Slovenia. Chestnut is ranked at the 8th place out of 45 tree species in the country; representing 1.5 % of total growing stock or 3.62 million cubic meters. Therefore, the potential damage caused by *D. kuriphilus* could be major, specifically in the production of wood, yield production and apiculture (Jurc 2009).

Leptoglossus occidentalis (Heidman, 1910) (Heteroptera: Coreidae) was found for the first time in 2003 in the Kras region. By 2004, it had already spread to the whole of SW Slovenia. It has been found in the *Pinus nigra* forests. In 2004, it was also found in Ljubljana (Jurc and Jurc 2005) and in October 2008 in Kidričevo on *Pinus sylvestris*. *P. nigra* and *P. sylvestris* are the most suitable host trees in Slovenia. According to the data of the SFS, the share of growing stock of coniferous trees represents 47.4 % of the total growing stock. *Pinus* spp. represent 8.711 millions of cubic meters of growing stock or 5.8 % of total. Considering



Figure 2: *Leptoglossus occidentalis* (photo D. Jurc).

Abbildung 2: *Leptoglossus occidentalis* (Foto D. Jurc).

this, the potential damage caused by *L. occidentalis* could be important.

Xylosandrus germanus (Blandford, 1894) (Coleoptera: Scolytinae) was first recorded in Slovenia on a *Castanea sativa* near Nova Gorica in 2000 (Jurc 2008). In 2009, it has been found on an *Abies alba* near Ljubljana. Many tree species (*Quercus* spp., *Juglans regia*, *Picea abies*, *Pinus sylvestris*) are susceptible to the attack by this beetle (Henin and Versteirt 2004). The influence to Slovenian forest could be major.

Cinara curvipes (Patch, 1912) (Homoptera: Aphididae) was detected for the first time in the spring of 2007 on a single silver fir tree (*Abies alba*) in



Figure 3: Wormhole caused by the female of *X. germanus* (photo M. Jurc).

Abbildung 3: Wurmstich verursacht durch das Weibchen von *X. germanus* (Foto M. Jurc).



Figure 4: *Cinara curvipes*, vivipari (photo M. Jurc)

Abbildung 4: *Cinara curvipes*, lebendgebärend (Foto D. Jurc).

Ljubljana, and in winter 2007 on two *Abies concolor* trees in a park in Muta. The host fidelity of *C. curvipes*, possible host switching and its eventual influence on silver fir forests are important. Silver fir is the third most widely distributed tree species in Slovenia. The share of *A. alba* in total growing stock is 7.5 % or more than 11 million cubic meters. In the case of the aphid spreading into these forests, we can expect our forest to be considerably affected (Jurc et al. 2009).

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