Mini data sheet on *Aproceros leucopoda*

Added in 2011 – Deleted in 2015

Reasons for deletion:
Aproceros leucopoda has been included in EPPO Alert List for more than 3 years and during this period no particular international action was requested by the EPPO member countries. The Panel on Quarantine Pests for Forestry and the Panel on Phytosanitary Measures agreed that it could be deleted. In 2015, it was therefore considered by the Working Party on Phytosanitary Regulations that sufficient alert has been given and the pest was deleted from the Alert List.

Aproceros leucopoda (Hymenoptera: Argidae – Zigzag elm sawfly)

Why	The attention of the EPPO Secretariat was attracted by the NPPO of Germany to the reports on severe defoliation and branch dieback of native and non-native elms in central Europe caused by an East-Asian sawfly *Aproceros leucopoda*. Considering that the abundance of elm trees has dramatically declined in Europe over the last decades due to Dutch elm disease and the fact that the new pest has a high potential for spread and damage, the EPPO Secretariat decided to add *A. leucopoda* to the EPPO Alert List.
Where	**EPPO region:** Austria (first record in 2009 - Vienna and Niederösterreich), Belgium (first record in 2013), Czech Republic (first record in 2013, Hradec Králové region), Germany (Bayern, Brandenburg), Hungary (first record in 2003 - Bàcs-Kiskun, Békés, Budapest, Csongràd, Heves, Nògràd counties), Italy (first record in 2009 – regions of Piemonte and Friuli-Venezia-Giulia, and Trento autonomous province), Netherlands (first record in 2013), Poland (first record in 2003 - Sandomierz and in 2009 Warszawa powiats), Romania (first record in 2006 - Banat and Moldova regions), Russia (Far East), Serbia, Slovakia (first record in 2009), Slovenia (in 2011), Ukraine (first record in 2006 - Luhans'ka and in 2009 Kharkiv oblast). **Asia:** China, Japan, Russia (Far East).
On which plants	*A. leucopoda* is an oliphagous pest which feeds on elm trees (*Ulmus* spp.). In Europe, damage has been found on *U. davidiana* (David elm), *U. glabra* (mountain elm), *U. japonica, U. laciniata, U. laevis* (water elm), *U. minor* (field elm), *U. pumila* (Siberian elm) and *U. pumila* var. *arborea*. Due to hybridization and artificial crossings there is little agreement on the classification of diverse elm forms, which lack suitable characters for a convincing taxonomic differentiation, but all elms are putative hosts of *A. leucopoda*.
Damage	By feeding actively on elm leaves, larvae of *A. leucopoda* can cause severe defoliation of elm trees both in urban areas, along roadsides and in forests. Larvae start feeding on leaves in a characteristic zigzag pattern. Later, the attacked leaves are completely consumed except for the thick middle vein. During field studies carried out in Romania, observations made on individual trees have shown that a severe defoliation, ranging from 74% to 98%, could be reached by the beginning of July. Trees attacked by *A. leucopoda* usually display a secondary bud burst later in the season, but as newly produced leaves are also eaten this can lead to twig and branch dieback. At present, tree mortality has not been reported, but repeated defoliation over several years is likely to have an impact on tree vitality, in addition to the reduced aesthetic value. *A. leucopoda* is a multivoltine species having four generations per year with female populations reproducing by parthenogenesis. The total period from oviposition to imaginal emergence takes 4 weeks. Females lay eggs singly at the edges of elm leaves. In Europe, the first instar larvae hatch around mid-May. Larvae go through six instars and complete their development within 15–18 days. The last instar larvae make either a loosely spun cocoon with a net-like structure attached to the lower surface of elm leaves or a more compact, solidwalled cocoon found in the litter or the soil under the tree. Wasps were observed to

overwinter in solidwalled cocoons. Adult wasps emerge continually from spring to autumn.

Dissemination — *A. leucopoda* was probably introduced from East Asia into Europe with elm plants used in horticulture or forestry. *A. leucopoda* can be spread over long distances by movements of infested twigs or shoots and young plants. Natural spread is also ensured by adult females (from the end of April to the end of September), which are thought to be strong fliers. When studying the records of *A. leucopoda* in European countries from 2003 to 2014, it has been estimated the pest spread ranged from 45 to 90 km per year. Transport with other goods, which in the country of origin were located/stored close to elm trees from which mature larvae descended for cocooning, is also possible. Passive dispersal by traffic is also to be expected, since spread is observed along roads and highways.

Pathway — Plants for planting, cut branches of *Ulmus,* soil? from countries where *A. leucopoda* occurs.

Possible risks — Elm trees are widespread in the EPPO region, although their populations have been much reduced by Dutch elm disease. In forests, elms rarely form pure stands but usually grow intermixed with other tree species such as ash (*Fraxinus*), hornbeam (*Carpinus betulus*) and oak (*Quercus*). They have some economic importance as they produce a valuable, heavy and strong wood that is used in carpentry. Elms are also used for afforestation of sites with extreme environmental conditions. Several elm species are used for ornamental purposes along roadsides and in parks and gardens, where defoliation by *A. leucopoda* would cause an aesthetic problem. Control of the pest is difficult, although some insecticides (deltamethrin, teflubenzuron) have been found to be effective against the first and second instar larvae. Females can quickly re-invade a treated area and the treatment of adult elm trees both in urban and forest environments might be problematic. The introduction of natural and specialized parasitoids might be envisaged, but at present only *Blondelia nigripes* (Diptera: Tachinidae) has been reared from *A. leucopoda*. *B. nigripes* is widely distributed in countries where the pest was recorded, but its host range is probably too wide to be sufficiently effective in controlling *A. leucopoda*. In the EPPO region, *A. leucopoda* has already shown its ability to reproduce and spread rapidly. It is very likely that *A. leucopoda* is able to establish in many EPPO countries particularly in the centre and south of the EPPO region where cultivated or wild elms are grown. Therefore, attention should be paid to this new invasive species to better understand its current distribution and biology in Europe, and if possible prevent its further spread.

Source(s)

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