

### Mini data sheet on *Halyomorpha halys*

Added in 2008 - Deleted in 2013

**Reasons for deletion:**

*Halyomorpha halys* 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. In 2013, it was therefore considered that sufficient alert has been given and the pest was deleted from the Alert List.

*Halyomorpha halys* (Heteroptera: Pentatomidae - brown marmorated stink bug)

Why	The attention of the EPPO Secretariat was attracted by Dr G. Schrader (JKI, Germany) and Dr Wermelinger (Swiss Federal Institute WSL, CH) to the first record of <i>Halyomorpha halys</i> in Switzerland. <i>H. halys</i> is a highly polyphagous pest of Asian origin which was recently introduced into the USA.
Where	<p><i>H. halys</i> originates from Asia. In the USA, it was first identified in 2001 in Allentown in Pennsylvania, although it is thought that it was present earlier (since 1996-1998). It is suspected to have been imported in packing crates from Asia. Within a few years, <i>H. halys</i> rapidly spread across Pennsylvania and New Jersey, and then to several Mid-Atlantic States, showing an invasive behaviour. Isolated populations were also found on the west coast in Oregon and California, probably transported there by human activities. In Europe, it was considered for some time that the first record of <i>H. halys</i> had been made in Switzerland, but in fact the first specimen was caught in a light trap in 2004 in Liechtenstein at Balzers (bordering Switzerland). Following these initial captures, <i>H. halys</i> was found in other neighbouring European countries.</p> <p><b>EPPO region:</b> France (Alsace in 2012), Germany (Baden-Württemberg in 2011), Italy (Emilia-Romagna in 2012), Liechtenstein (in 2004), Switzerland (Zürich in 2007, then in Basel-Stadt, St. Gallen and Schaffhausen).</p> <p><b>Asia:</b> China (Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Neimenggu, Shaanxi, Shandong, Shanxi, Sichuan, Xizhang, Yunnan, Zhejiang), Japan, Korea Republic, Taiwan.</p> <p><b>North America:</b> USA (Alabama, Arizona, Connecticut, Delaware, District of Columbia, Georgia, Idaho, Illinois, Indiana, Iowa, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Utah, Virginia, Washington, West Virginia, Wisconsin, Wyoming). Intercepted only in California and Florida.</p>
On which plants	<p><i>H. halys</i> is a highly polyphagous pest attacking more than 100 plant species, primarily fruit trees and woody ornamentals, but also field crops. Fruit crops: <i>Citrus</i> spp., <i>Diospyros</i> spp., <i>Malus domestica</i> (apple), <i>Morus</i> spp., <i>Prunus armeniaca</i> (apricot), <i>P. avium</i> (cherry), <i>P. domestica</i> (plum), <i>P. persica</i> (peach), <i>Pyrus communis</i> (pear), <i>Rubus idaeus</i> (raspberry) and <i>Vitis vinifera</i> (grapevine). Field crops: <i>Asparagus</i>, <i>Glycine max</i> (soybean), <i>Phaseolus vulgaris</i> (common bean), <i>Zea mays</i> (maize). Forest and ornamental trees/shrubs: <i>Abelia</i>, <i>Acer</i>, <i>Buddleia davidii</i>, <i>Cryptomeria</i>, <i>Cupressus</i>, <i>Hibiscus</i>, <i>Lonicera</i>, <i>Paulownia tomentosa</i>, <i>Rosa rugosa</i>, <i>Salix</i>. In Asia, <i>H. halys</i> has also been found on weeds (e.g. <i>Actrium</i> spp.).</p>
Damage	<p>In the USA, <i>H. halys</i> has one generation per year but in its native range 5-6 generations per year have been reported. It overwinters in the adult stage (diapause). Adults are 12-17 mm long, brownish or grayish, mottled and variable in size and colour. In summer, females lay eggs (50-150 eggs and up to 400 eggs, clustered by groups of 20-30) on the underside of the leaves. There are 5 larval stages (nymphs). The pronotum of the younger nymphs is armoured with spines, and the tibiae of instars 3 to 5 show a white band.</p>

Pictures can be viewed on the Internet:

<http://www.insectimages.org/browse/subthumb.cfm?sub=9328&start=1>

[http://www.wsl.ch/forschung/forschungsunits/walddynamik/waldinsekten/aktuell/halyomorpha\\_EN](http://www.wsl.ch/forschung/forschungsunits/walddynamik/waldinsekten/aktuell/halyomorpha_EN)

Like other true bugs, *H. halys* feeds by sucking plant juices. Adults generally feed on fruit, whereas nymphs feed on leaves, stems and fruit. The most important crop damage results from insect feeding on pome and stone fruits, and on seeds inside legume pods (e.g. beans and soybean). Leaf feeding is characterized by small lesions (3 mm diameter) which may then become necrotic and coalesce. Attacked fruits may present small necrotic spots or blotches, grooves and brownish discolorations. In cases of heavy infestations, fruit are severely disfigured and rendered unmarketable. In Asia, *H. halys* is considered as causing significant damage to soybean and various horticultural crops. In Northern Japan, apple crops have increasingly been damaged by *H. halys*. Forest trees are known hosts of *H. halys*, but no damage has been reported in Asian forests. However, in Japan *H. halys* is considered as a pest in nurseries producing seeds of cedar and cypress because it can feed on cones. In the USA, damage caused by *H. halys* was initially reported in suburban or urban environments on woody ornamentals (e.g. *Buddleia davidii*, *Paulownia tomentosa*) and backyard peach and pear trees. However in 2006, commercial fruit growers started to report damage in apple and pear orchards in eastern Pennsylvania and western New Jersey. In Pennsylvania, high populations were also found in soybean crops but without significant damage. *H. halys* is considered as a vector of Paulownia witches' broom phytoplasma in Asia. Preliminary studies done in the USA did not detect any phytoplasma in the pest populations from Pennsylvania.

In addition to plant damage, *H. halys* can be a nuisance to humans because at the end of autumn, adults can aggregate in buildings and houses (on walls, window and door frames) seeking overwintering sites. When disturbed or crushed they discharge a characteristic pungent odour (unpleasant and long lasting!). In the USA, many homeowners are complaining about this nuisance.

#### Dissemination

*H. halys* is a strong flyer and a highly mobile pest which can move from host to host during the growing season (e.g. from early-ripening fruits to late-ripening ones). Over long distances, the pest can be disseminated by trade of host plants but also by movements of goods or vehicles. For example, in California it is suspected that the first bugs were introduced with household items as they were found on a property whose owner had recently moved from Pennsylvania. Until now, the pathways of introduction of *H. halys* into the USA or Switzerland remain unknown but it is suspected that the pest was introduced either as a hitchhiker on packing material or via plant imports.

#### Pathway

Plants for planting, fruits and seeds? packing material, hitchhiking on non-agricultural products.

#### Possible risks

In USA, new findings of *H. halys* have to be notified the authorities and it is considered that the pest has the potential to invade agricultural areas and pose a risk to an increasing number of crops as it continues to expand its geographic range. For many crops, it is not known whether existing management strategies already applied against other bugs or insect pests might also apply to *H. halys*. In the EPPO region no particular damage has been reported for the moment, but it cannot be excluded that *H. halys* might become a damaging pest, in particular on pome and stone fruit trees.

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