EPPO Datasheet: *Xylotrechus pyrrhoderus*

Last updated: 2026-09-04

IDENTITY

Preferred name: *Xylotrechus pyrrhoderus*
Authority: Bates
Taxonomic position: Animalia: Arthropoda: Hexapoda: Insecta: Coleoptera: Cerambycidae
Other scientific names: *Xylotrechus pyrrhoderus f. hattorii* Ohbayashi, *Xylotrechus pyrrhoderus pyrrhoderus* Bates
Common names: grape borer, grape borer beetle, grape tiger longicorn
[view more common names online...]
EPPO Categorization: A1 list, Alert list (formerly)
[view more categorizations online...]
EPPO Code: XYLOPY

Notes on taxonomy and nomenclature

Xylotrechus pyrrhoderus includes two subspecies: *X. pyrrhoderus pyrrhoderus* and *X. pyrrhoderus nigrosternus,* which differ in the colour of the prosternum and mesosternum (Gressitt, 1951; Niisato & Adachi, 2005).

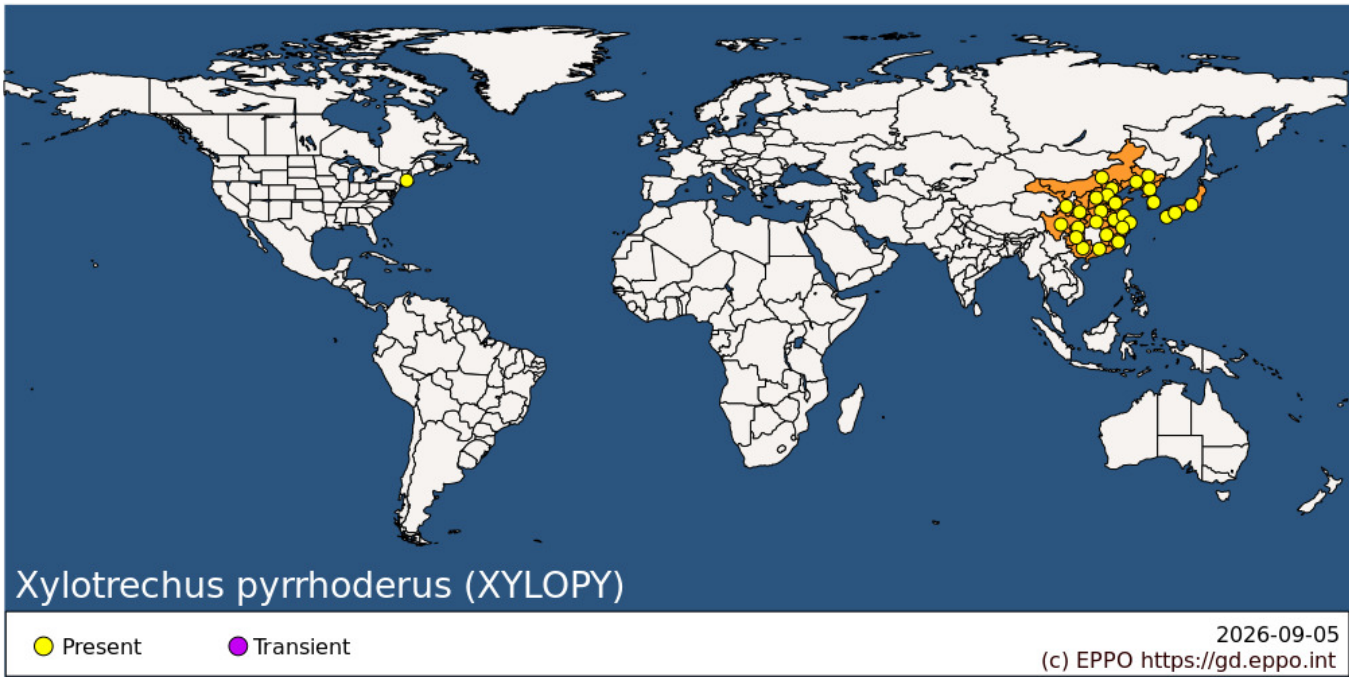
HOSTS

Confirmed hosts of *X. pyrrhoderus* belong to the family Vitaceae (EPPO, 2025) and include *Ampelopsis glandulosa* var. *brevipedunculata*, *Vitis ficifolia* and *V. vinifera*. In addition, *X. pyrrhoderus* has been recorded in Japan on many *Vitis* interspecific crossings (Tsuchiya, 1988). These crossings involve *Vitis* species native to East Asia, such as *V. amurensis*, or not native to East Asia, such as *V. vinifera* or various North American species (*V. labrusca*, *V. aestivalis*, *V. lincecumii*, *V. riparia*, *V. berlandieri* and *V. rupestris*) and hybrids. In the literature, there are records on another Vitaceae, *Parthenocissus tricuspidata*, as well as on *Celastrus orbiculatus* (Celastraceae), but these hosts are uncertain (EPPO, 2025).

Host list: *Ampelopsis glandulosa var. brevipedunculata*, *Vitis ficifolia*, *Vitis hybrids*, *Vitis vinifera*

GEOGRAPHICAL DISTRIBUTION

Xylotrechus pyrrhoderus is native to East Asia. It has been introduced in the United States, where it was found for the first time in 2020 in Hampden County, Massachusetts (CAPS, 2023).



Asia: China (Anhui, Beijing, Chongqing, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hebei, Henan, Hubei, Jiangsu, Jiangxi, Jilin, Liaoning, Neimenggu, Shaanxi, Shandong, Shanghai, Shanxi, Sichuan, Zhejiang), Japan (Honshu, Kyushu, Shikoku), Korea, Democratic People's Republic of, Korea, Republic of
North America: United States of America (Massachusetts)

BIOLOGY

Throughout its native range, the life cycle of *X. pyrrhoderus* from egg to adult lasts about 1 year, from the summer or beginning of autumn in the first year to the same period in the following year (Ashihara, 1982a, 1982b; Kim et al., 1988; Miyazaki et al., 1977). There is no evidence that *X. pyrrhoderus* can develop a generation over several years.

Eggs are typically laid on or around buds on 1-year-old shoots and canes (Ashihara, 1982a; EPPO, 2025). Females lay one to three eggs at a single oviposition point (Kim et al., 1988). The total number of eggs per female in the literature varies widely, from 15 to several hundreds (Kim et al., 1988; Zhang et al., 2025, citing others; Miyazaki et al., 1977; Yamada, 1974). Eggs hatch within 5–16?days, depending on the temperature and time of the year. At hatching, larvae bore galleries in the cambium under the bark around the buds, and later in the xylem (Ashihara, 1982b; Miyazaki et al., 1977; Yamada, 1974). Larvae develop mainly in shoots and canes (i.e. <2?years-old) but may reach 2- to 4-year-old wood. In Yamanashi Prefecture, the galleries of mature larvae in August measured 260–340?mm (Tsuchiya, 1988). Larvae develop over several months, from summer through the winter to the following summer, and their development can include a facultative diapause induced by environmental factors (Ashihara, 1982a). After diapause, larvae may continue feeding during the winter if daytime temperatures are sufficient, but otherwise resume development in spring before grapevine buds burst (Miyazaki et al., 1977). Pupae are formed in a pupal cell in larval galleries. In the field, the pupal stage is reported to last 10–14?days (Ashihara, 1982b). Immature adults remain in the pupal cell for 10–15?days during which maturation occurs, and unfertilized eggs mature in the ovaries (Iwabuchi, 1982; Zhang et al., 2025). In Japan, adults are reported to generally emerge from the end of July to mid-October depending on the region and altitude. In some southern areas of Japan, some emergence is reported in January to February (Miyazaki et al., 1977; Yamada, 1974), however this is not the normal pattern. Adults, live for about 7–25?days after exiting the plant. They are active during the day (Ashihara, 1982b; Iwabuchi, 1982) and appear to not need to feed (EPPO, 2025; Tsuchiya, 1988). The male of *X. pyrrhoderus* releases a sex pheromone to attract females (Iwabuchi et al., 1986). In experiments and in the field, females were shown to mate and oviposit soon after emergence (Ashihara, 1982a, 1982b; Miyazaki et al., 1977; Yamada, 1974). Adults can fly, but no information on dispersal distances was found in the literature (EPPO, 2025). *X. pyrrhoderus* is present in a wide range of climatic conditions, and its development is affected by temperature (EPPO, 2025).

DETECTION AND IDENTIFICATION

Symptoms

The bark of shoots and canes on which larvae feed presents blackened and slightly swollen areas, which can be observed from the overwintering period of larvae onwards (Tsuchiya, 1988; Yamada, 1974). When larvae resume feeding actively in late spring, signs of the presence of *X. pyrrhoderus* are wilting and die-back of shoots and canes, and dark sap oozing from surviving vines. The round exit holes of adults may be observed later in the year (Yamada, 1974).

Morphology

Eggs are milky white, oblong and measure about 1?mm in length (Miyazaki et al., 1977; Tsuchiya, 1988; Yamada, 1974).

Larvae are pale yellow with a brown head (Tsuchiya, 1988) and have a shape typical of Cerambycidae larvae (wide prothorax and tapering toward the end of the abdomen). Newly hatched larvae measure about 1?mm in length and mature larvae 12–21?mm in length (Tsuchiya, 1988; Zhang et al., 2025).

Pupae are light yellowish brown, with a large spherical pronotum. They measure about 8–20?mm in length (Kim et al., 1988; Tsuchiya, 1988; Zhang et al., 2025).

Adults are 6–15?mm long (Han & Lyu, 2010; Kim et al., 1988; Tsuchiya, 1988; Zhang et al., 2025). They have a black head and a red pronotum, as long as wide, with dense and coarse punctures. The scutellum is red with distal yellowish pubescence. Elytra are black with thick yellowish bands on basal and sub-apical areas, a basal yellowish band connected by a sharp angle with the sub-basal band along the elytral suture, and a sub-apical area with a transverse whitish pubescence band. Elytra are about 2.1 times as long as wide, apex of elytra truncated with outward spine-like projection (Han & Lyu, 2010). The subspecies *nigrosternus* has a black prosternum and mesosternum (Gressitt, 1951; Niisato & Adachi, 2005).

Larvae, pupae and adults may be confused with those of other Cerambycidae. For example, in the EPPO region, the larvae of a number of *Phymatodes* species are associated with *Vitis*. Adults of *X. pyrrhoderus* have similar colours (red thorax, black elytra with yellowish bands) to those of *X. rufilius*, and some vague resemblance with other cerambycid species that have *Vitis* in their host range (EPPO, 2025).

Detection and inspection methods

Xylotrechus pyrrhoderus can be detected by inspecting plants for signs of infestation (see the Section 5.1). Larvae do not eject frass from their galleries, which makes detection difficult at early stages of infestation (Clausen, 1931, citing Matsumoto & Watanabe, 1920; KRRDA, 2024).

Adults can be identified by morphological methods (Bates, 1873; Gressitt, 1951; Han & Lyu, 2010; Lin et al., 2021). EPPO (2025) specifies the characters to distinguish *X. pyrrhoderus* from the similar *X. rufilius*. At the time of the preparation of the EPPO PRA, no complete description of pupae, larvae and eggs of *X. pyrrhoderus* was found, and there was no reliable COI barcode that would allow molecular identification (EPPO, 2025).

Xylotrechus pyrrhoderus has a male sex pheromone, whose components have been synthetized (Iwabuchi, 1982; Iwabuchi et al., 1986; Sakai et al., 1984). Trapping systems have been partially investigated (Iwabuchi, 1982; Iwabuchi et al., 1986; Narai et al., 2015). At the time of the preparation of the EPPO PRA, no information was found on whether the male sex pheromone is available commercially, nor on the response of *X. pyrrhoderus* to ethanol or other possible attractants (EPPO, 2025).

PATHWAYS FOR MOVEMENT

Host plants for planting (except seeds, pollen and tissue cultures) are the only potential pathway identified for *X. pyrrhoderus* (EPPO, 2025). *X. pyrrhoderus* may be associated with plants with roots that carry canes (e.g.

ornamental hosts, including grapevine and bonsais), and with cuttings if those carry buds and are woody (EPPO, 2025). Many EPPO countries prohibit the import of *Vitis* plants for planting. For those where import is allowed, the EPPO PRA assessed the likelihood of entry on *Vitis* plants for planting as low with moderate uncertainty. The likelihood of entry on plants for planting of *Ampelopsis glandulosa* var. *brevipedunculata* is similar. Host plants for planting may be traded for ornamental purposes or for propagation, or be carried by travellers (EPPO, 2025).

All life stages may be associated with host plants for planting. The main limiting factors for successful entry of *X. pyrrhoderus* are the fact that material exported by the nursery trade and for propagation is expected to be subject to some degree of scrutiny, and that successful transfer to a host plant involves several steps: the life stages in the commodity have to complete their development, the infested plants should not be detected and removed, a male and a female should emerge in the same time frame and mate, and the female should find a host plant (EPPO, 2025).

Entry on other commodities, including items made of grapevine canes such as wreaths, was considered very unlikely (EPPO, 2025).

PEST SIGNIFICANCE

Economic impact

Damage is due to larval feeding on the cambium and xylem. Most damage occurs on shoots and canes (i.e. <2?years old), but damage can also occur on 2- to 4-year-old wood. Feeding by larvae may cause buds to fail to sprout (Miyazaki etal.,1977). New shoots sprouting between the infested area and the tip of the cane may wilt and die within 2–3?days (Hirai & Tsukio,2022; Yamada, 1974). Breakage of canes on young vines has a major influence on pruning and on the future shape of the plant (Shimane Prefecture, 2024). On 2- to 3-year-old wood, damage can weaken the vine and inhibit the growth of new shoots (Miyazaki et al., 1977), and breakage may also happen (Hirai & Tsukio, 2022; Shimane Prefecture, 2024; KRRDA, 2024). On 3- or 4-year-old woody parts or branches, larval feeding causes weakening and, even if the branch survives, the growth of new shoots can be severely stunted (Yamada 1974). In Yamanashi prefecture, although damage mostly occurred from planting to young vines of about 4?years old, the pest was also found in older vineyards (Tsuchiya,1988). The state of the vines, pruning method and variety influence damage (Miyazaki et al., 1977; Tsuchiya, 1988; Wang, 2017; Yamada, 1974).

In Japan, *X. pyrrhoderus* was already considered a pest of grapevine in the early 20th century (Clausen, 1931). The literature of the 1970s–1980s details impact and work on control methods (e.g. Yamada, 1974; Miyazaki et al., 1977; Ashihara, 1982a, 1982b; Tsuchiya, 1988). In some production areas, it was not uncommon that young vineyards were abandoned before the grapevines matured (Tsuchiya, 1988). There is historical evidence from Japan that when a management measure was removed, damage increased (Matsumoto & Fujiwara, 1978). In the Republic of Korea, *X. pyrrhoderus* has been occurring frequently and damaging grapevine since the beginning of the 1980s (KRRDA, 2024). In China, in some vineyards, between 20 and 90% of grape plants were infested by the pest, depending on management level and plant age (Wang, 2017, citing Huang & Yang 2002).

No evidence was found of current major economic impact by this pest when developing the EPPO PRA, but recent references from the Republic of Korea and Japan indicate that pest management measures are applied (e.g. Hirai & Tsukio, 2022; Shimane Prefecture, 2024, KRRDA, 2024). In these countries, table grapes are a valuable product, and this is possibly why the pest is subject to management and the reported impact is currently low (EPPO, 2025). No damage has been reported in Massachusetts to date (2025–12).

Control

In Asia, *X. pyrrhoderus* is controlled by cultural and chemical control methods (Wang, 2017). The main cultural method consists of removing damaged and infested material during pruning, and destroying pruned material (KRRDA, 2024; Wang, 2017, citing others; Liu, 2014; Hirai & Tsukio, 2022). In addition, destruction of ‘neglected’ grapevine plants in the vicinity of vineyards has been recommended (Yamada, 1974). Removing larvae during winter pruning has also been used (Clausen, 1931, citing Matsumoto & Watanabe, 1920; Liu, 2014; Noukan, 2024), but it is labour-intensive and damaging to the plants (Yamada, 1974). Insecticide treatments are recommended by spraying in summer/autumn against adults, eggs and early larval instars (Wang, 2017, citing others; Noukan, 2024.

Liu, 2014; Hirai & Tsukio, 2022).

Phytosanitary risk

Hosts of *X. pyrrhoderus* are widely cultivated in the EPPO region for fruit production or as ornamentals, and they are also present in nature. *X. pyrrhoderus* may establish outdoors in a wide part of the EPPO region, covering some parts of all EPPO countries except Ireland and the United Kingdom. The northern limit of potential establishment is uncertain, that is, whether the climate is suitable and there is sufficient presence of cultivated hosts in the northern part of the region. *X. pyrrhoderus* is expected to spread via a combination of natural spread and human-assisted pathways (EPPO, 2025).

Commercial grapevine production has a high economic value in the EPPO region. Damage is likely to be more important on newly planted and young vineyards, because the pest may damage the structural part of the vines. However, vineyards in full production may also be exposed to yield losses due to attacks on fruiting canes, though plants are expected to recover. Control strategies would need to be developed, which would take time following an introduction. *X. pyrrhoderus* would lead to permanent added cost to production, especially in major grapevine growing areas in favourable climatic conditions. Organic viticulture, which is important in part of the EPPO region, may be more strongly affected. Impacts are expected to vary within the EPPO region, with more impact in areas where climatic conditions are more favourable to the pest. In addition, some common viticultural practices may not be possible anymore where *X. pyrrhoderus* needs to be controlled, such as leaving pruning material as mulch on the field, or mechanized pruning. Finally, *X. pyrrhoderus* may have impact on *Vitis vinifera* subsp. *silvestris*, which is present in nature and is considered endangered in several EPPO countries, and it may also incur a need for measures on hosts which are generally not managed, such as ornamental plants (EPPO, 2025).

PHYTOSANITARY MEASURES

Phytosanitary measures are recommended for plants for planting (except seeds, pollen, tissue cultures) of *Vitis* spp. and *Ampelopsis glandulosa* var. *brevipedunculata* (EPPO, 2025). The following options were identified: pest-free area; pest-free production site or pest-free place of production established under physical isolation according to EPPO Standard PM 5/8 (EPPO, 2016) associated with storage in conditions preventing infestation; importing plants for planting which have not developed lignified parts yet; or post-entry quarantine for one full cycle of vegetation (in the framework of a bilateral agreement).

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ACKNOWLEDGEMENTS

This datasheet was prepared in 2025 by the EPPO Secretariat based on the pest risk analysis produced by an EPPO expert working group in 2024. The expert working group was composed of C. Gent (DEFRA, GB), D. Kasatkin (VNIIKR, RU), G. Lukácsy (Hungarian University of Agronomy and Life Sciences, HU), R. Mouttet (ANSES, FR), R. Potting (NVWA, NL), J. Tuomola (Ruokavirasto, FI).

How to cite this datasheet?

EPPO (2026) *Xylotrechus pyrrhoderus*. EPPO datasheets on pests recommended for regulation. Available online. https://gd.eppo.int

Datasheet history

This datasheet was first published in the EPPO Bulletin in 2026. It is maintained in an electronic format in the EPPO Global Database. The sections on 'Identity', ‘Hosts’, and 'Geographical distribution' are automatically updated from the database. For other sections, the date of last revision is indicated on the right.

EPPO (2026) Datasheets on pests recommended for regulation. *Xylotrechus pyrrhoderus. EPPO Bulletin* **56**(2), 239-243. https://doi.org/10.1111/epp.70070