

# Preparedness in biological control of priority biosecurity threats

## Round headed apple tree borer, *Saperda candida* (Fabricius)

### Introduction

*Saperda candida* Fabricius (Coleoptera: Cerambycidae) is native throughout the eastern United States as far west as Texas and the Dakotas, and in south-eastern Canada from Nova Scotia west to central Alberta. In 2008 it was detected in Germany on the island of Fehmarn, where eradication measures were applied. Larvae feed nearly exclusively on woody hosts within the family Rosaceae. In North America, Cydonia, Malus and Pyrus are the most important cultivated hosts. This insect attacks healthy trees and in the late 19<sup>th</sup> century was one of the most damaging pests to young *Malus* trees in North America. Trees from 3 to 10 years of age are the most at risk. The presence of only a few larvae in a small stem can cause enough damage to completely girdle the trunk and result in the death of the tree. Improved pest management techniques by the mid-20<sup>th</sup> century greatly reduced the impact of this insect in commercial orchards (Solomon 1995, EPPO, 2022).

*Saperda candida* is an EPPO A1 Pest and an EU A1 quarantine pest (Annex II A).

### History of classical biological control against *Saperda candida*

No classical control against this pest has been performed yet.

### Most promising natural enemies

Five species of hymenopterous parasites: *Cenocoelius saperdae*, *Echthrus niger*, *Monogonogastra agrili* (= *Digonogastra agrili*) and *Xylophrurus nubilipennis luctuosus*, and one dipterous parasite *Sarcophaga* sp. have been reported.

These hymenopterous species are not reported to be present in the EPPO region but some species of *Sarcophaga* occur (Fauna Europaea, 2023).

### Other natural enemies

EPPO (2011), quotes Solomon (1995) who reports that other predators include spiders, carpenter ants, click beetles, and carabid beetles.

Solomon (1995) reports that the hairy, downy and golden woodpeckers and northern flicker (*Picoides villosus*, *Dryobates pubescens medianus*, *Melanerpes aurifrons*, *Colaptes auratus*) are the most important natural controls.

### References

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1. EPPO (2022) EPPO Global Database. Available at <https://gd.eppo.int/taxon/SAPECN>
2. EPPO (2011) PRA *Saperda candida*. <https://gd.eppo.int/taxon/SAPECN/documents>
3. Flora Europaea (2023) <https://fauna-eu.org/>
4. Solomon JD (1995). *Saperda candida* Fabricius in Guide to insect borers of North American broadleaf trees and shrubs. Agricultural Handbook 706, pp. 346-349. U.S. Department of Agriculture, Forest Service. Washington DC (US): [http://na.ldr.nal.usda.gov/NALWeb/Agricola\\_Link.asp?Accession=](http://na.ldr.nal.usda.gov/NALWeb/Agricola_Link.asp?Accession=)