

California Pest Rating Proposal

Trichoferus campestris (Faldermann): velvet longhorn beetle

Coleoptera: Cerambycidae

Current Rating: A

Proposed Rating: B

Comment Period: **07/19/2021 – 09/02/2021**

Initiating Event:

Trichoferus campestris is currently A-rated. It has been found to be established in California. There are official records from Fresno and Tulare counties. Therefore, it is necessary to re-evaluate the rating.

History & Status:

Background: Adult *Trichoferus campestris* are slender beetles approximately $\frac{3}{4}$ inch in length and brown in color. In Utah, they are active (flying) June to August (PPQ, 2019). The eggs are laid under bark of trees and the larvae tunnel into and feed on the cambium and xylem. Development requires one to two years. Symptoms of larval feeding in trees are reported to include yellowing or thinning of the canopy. Although this species is not reported to rapidly kill trees, it may impact fruit yield and the life of the tree (Carroll and Parker, 2020; Spears and Ramirez, 2014).

Hosts of *T. campestris* include: Anacardiaceae: *Rhus* sp. (sumac); Betulaceae: *Alnus* sp. (alder), *Betula* sp. (birch); Cornaceae: *Cornus* sp. (dogwood); Cupressaceae: *Chamaecyparis* sp. (cypress); Fabaceae: *Robinia* sp. (locust); Fagaceae: *Fagus* sp. (beech), *Quercus* sp. (oak); Juglandaceae: *Carya* sp. (hickory), *Juglans* sp. (walnut); Moraceae: *Morus* sp. (mulberry); Oleaceae: *Fraxinus* sp. (ash); Pinaceae: *Abies* sp. (fir), *Pinus* sp. (pine); Rosaceae: *Malus* spp. (apple, crabapple), *Prunus* spp.

(cherry, peach), *Sorbus* sp. (mountain ash); Salicaceae: *Salix* sp. (willow); Sapindaceae: *Acer* sp. (maple); Ulmaceae: *Ulmus* sp. (elm), *Zelkova* sp.; Vitaceae: *Vitis* sp. (grape) (Iwata and Yamada, 1990; Rodman et al., 2019). These hosts include reports of cut, dry wood that was infested; *T. campestris* is a pest of dry timber (Iwata and Yamada, 1990). Live peach and cherry trees were reported to be infested in Utah. However, these trees may have been old and/or stressed (PPQ, 2019). Maple (*Acer platanoides*) trees infested by *T. campestris* in Canada were found to be suffering from a fungal infection, which may have enabled the beetles to infest the trees (Bullas-Appleton et al., 2013). It is not clear if *T. campestris* is able to attack healthy, unstressed trees or if it is having a significant economic impact anywhere.

Worldwide Distribution: *Trichoferus campestris* is native to Asia, including Japan, Korea, China, and countries of Central Asia. It has spread to eastern Europe, including Hungary, Canada, and the United States, where it is reported to be established in Illinois, Minnesota, Ohio, New York, Wisconsin, and Utah (Bullas-Appleton et al., 2013; Dascălu et al., 2013; Hegyessy and Kutasi, 2010; Minnesota Department of Agriculture; Pest Tracker; Spears and Ramirez, 2014; Wisconsin Department of Agriculture, Trade and Consumer Protection).

Official Control: *Trichoferus campestris* is considered reportable by the United States Department of Agriculture (U.S. regulated plant pest table). It is a quarantine pest in Morocco and Canada and is on the A1 list in Turkey and on the A2 list in the EPPO (EPPO).

California Distribution: *Trichoferus campestris* was trapped (black cross-vane panel trap with *Trichoferus campestris* lure) in a pistachio orchard in Fresno County and a plum orchard in Tulare County in July 2020 (California Department of Food and Agriculture). These official detections were prompted by earlier (June 2020) detections in the same areas by UCNR specialist Dr. Houston Wilson in the process of his investigation of reports of the pest by the public. Traps with ethanol lure, which is also known to attract this beetle, were last placed in the area in 2014, suggesting the beetle was introduced between then and 2020. There are also reports of *T. campestris* from Los Angeles, Riverside, and San Bernardino counties from 2020 on the web site iNaturalist.

California Interceptions: *Trichoferus campestris* was found in a bottle of wine that was bottled in San Luis Obispo County in 2018, in firewood from Utah in 2016, and in a wood pallet from China in 1997 (California Department of Food and Agriculture).

The risk *Trichoferus campestris* poses to California is evaluated below.

Consequences of Introduction:

- 1) **Climate/Host Interaction:** *Trichoferus campestris* is polyphagous and is likely to be able to find hosts in areas of California that have an appropriate climate. This beetle is found in areas with a temperate climate. It appears likely that much of California may be suitable for this species, except for the desert and high mountain areas. Therefore, it receives a **High (3)** in this category.
 - Low (1) Not likely to establish in California; or likely to establish in very limited areas.
 - Medium (2) may be able to establish in a larger but limited part of California.
 - **High (3) likely to establish a widespread distribution in California.**
- 2) **Known Pest Host Range:** *Trichoferus campestris* is reported to feed on trees and vines in at least 15 families. Therefore, it receives a **High (3)** in this category.
 - Low (1) has a very limited host range.
 - Medium (2) has a moderate host range.
 - **High (3) has a wide host range.**
- 3) **Pest Reproductive and Dispersal Potential:** *Trichoferus campestris* can be spread by movement of infested wood. The adults can fly. Therefore, it receives a **Medium (2)** in this category.
 - Low (1) does not have high reproductive or dispersal potential.

– **Medium (2) has either high reproductive or dispersal potential.**

– High (3) has both high reproduction and dispersal potential.

- 4) **Economic Impact.** *Trichoferus campestris* is a pest of dry timber. In addition, it infests live peach and cherry trees in Utah. There is uncertainty regarding the importance of stress, infection, or age of the tree in possibly facilitating these infestations. However, there may be impacts on yield of stone fruit and treatments may be necessary. Therefore, it receives a **Medium (2)** in this category.

Economic Impact: A, B

A. The pest could lower crop yield.

B. The pest could lower crop value (includes increasing crop production costs).

C. The pest could trigger the loss of markets (includes quarantines).

D. The pest could negatively change normal cultural practices.

E. The pest can vector, or is vectored, by another pestiferous organism.

F. The organism is injurious or poisonous to agriculturally important animals.

G. The organism can interfere with the delivery or supply of water for agricultural uses.

Economic Impact Score: Medium

– Low (1) causes 0 or 1 of these impacts.

– **Medium (2) causes 2 of these impacts.**

– High (3) causes 3 or more of these impacts.

- 5) **Environmental Impact.** *Trichoferus campestris* attacks a wide variety of trees and it may impact native species. Infestations may trigger treatments. Therefore, *T. campestris* receives a **High (3)** in this category.

Environmental Impact: A, D

A. The pest could have a significant environmental impact such as lowering biodiversity, disrupting natural communities, or changing ecosystem processes.

B. The pest could directly affect threatened or endangered species.

C. The pest could impact threatened or endangered species by disrupting critical habitats.

D. The pest could trigger additional official or private treatment programs.

E. The pest significantly impacts cultural practices, home/urban gardening or ornamental plantings.

Environmental Impact Score: High (3)

– Low (1) causes none of the above to occur.

– Medium (2) causes one of the above to occur.

– **High (3) causes two or more of the above to occur.**

Consequences of Introduction to California for *Trichoferus campestris*: High (13)

Add up the total score and include it here.

–Low = 5-8 points

–Medium = 9-12 points

–**High = 13-15 points**

6) **Post Entry Distribution and Survey Information:** *Trichoferus campestris* is established in Fresno and Tulare counties. It receives a **Low (-1)** in this category.

–Not established (0) Pest never detected in California, or known only from incursions.

–**Low (-1) Pest has a localized distribution in California, or is established in one suitable climate/host area (region).**

–Medium (-2) Pest is widespread in California but not fully established in the endangered area, or pest established in two contiguous suitable climate/host areas.

–High (-3) Pest has fully established in the endangered area, or pest is reported in more than two contiguous or non-contiguous suitable climate/host areas.

Final Score:

7) The final score is the consequences of introduction score minus the post entry distribution and survey information score: Medium (12)

Uncertainty:

There is low uncertainty regarding the ability of *T. campestris* to establish in California (it is already established, and its known distribution suggests the potential for greater establishment in the state) and ability to feed on important trees (cherry and peach are known hosts, and the beetle is polyphagous, suggesting other hosts economically important in California are likely). The greatest uncertainty is that regarding the ability of *T. campestris* to attack healthy trees. Information that would clarify this issue was not found, although at least one other species in the genus, *T. griseus*, is reported to be an important pest of fig trees (Ismail et al., 2016). Therefore, it is possible that the threat *T. campestris* poses to California’s agriculture and environment is overestimated in this proposal. However, even if this species is only able to attack stressed trees, this would not mean it would not have an impact, as drought stress may be common in certain situations in California, both in orchards as well as forests or woodlands.

Conclusion and Rating Justification:

Trichoferus campestris is a polyphagous wood-boring beetle that is a pest of cut timber and may be capable of attacking healthy trees and impacting the yield and lifespan of affected trees. It may pose a threat to stone fruit as well as other crop, ornamental, and native trees. It is established in Fresno and Tulare counties and possibly in southern California as well. For these reasons, a “B” rating is justified.

References:

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***Comment Period: 07/19/2021 – 09/02/2021**

***NOTE:**

You must be registered and logged in to post a comment. If you have registered and have not received the registration confirmation, please contact us at permits[@]cdfa.ca.gov.

Comment Format:

- ❖ Comments should refer to the appropriate California Pest Rating Proposal Form subsection(s) being commented on, as shown below.

Example Comment:

Consequences of Introduction: 1. Climate/Host Interaction: [Your comment that relates to “Climate/Host Interaction” here.]

- ❖ Posted comments will not be able to be viewed immediately.
- ❖ Comments may not be posted if they:
 - Contain inappropriate language which is not germane to the pest rating proposal;
 - Contains defamatory, false, inaccurate, abusive, obscene, pornographic, sexually oriented, threatening, racially offensive, discriminatory or illegal material;
 - Violates agency regulations prohibiting sexual harassment or other forms of discrimination;
 - Violates agency regulations prohibiting workplace violence, including threats.
- ❖ Comments may be edited prior to posting to ensure they are entirely germane.
- ❖ Posted comments shall be those which have been approved in content and posted to the website to be viewed, not just submitted.

Proposed Pest Rating: B