

Pest Datasheet for *Callidiellum villosulum* (Fairmaire) [Coleoptera: Cerambycidae]

Callidiellum villosulum (Fairmaire), also known as the Brown Fir Longhorned Beetle, has been found in real wood trunks of artificial Christmas trees imported from China. During the time period 1999 – 2001, more than 20 interceptions of this species were recorded (Lingafelter, pers. comm.) *Callidiellum villosulum* is uniformly orange or reddish brown in both sexes (Fig. 1, *Callidiellum* spp.) The attached EXFOR database pest report summarizes what is known concerning this beetle, and rates it as very high risk, with little certainty on which to base that rating:
<http://www.spfnic.fs.fed.us/exfor/data/pestreports.cfm?pestidval=1&langdisplay=english>.

There are some additional points which may improve the EXFOR ratings. The pest report states “the ability of *Callidiellum villosulum* to adapt to North American conifers is not known. Its hosts are two genera of conifers not represented in North America.”. However, a search of the PLANTS database (USDA, NRCS, 2004) demonstrated that both hosts mentioned, *Cunninghamia lanceolata* and *Cryptomeria japonica*, are represented by naturalized populations in the US in the states of North Carolina, Alabama, and Louisiana. In addition, these same hosts are present in California arboreta, and there is a concern for “North American representatives of Taxodiaceae, namely redwood, *Sequoia sempervirens*; giant sequoia, *Sequoiadendron giganteum*; and bald cypress, *Taxodium distichum*. These trees tend to be geographically restricted” and “if they prove to be susceptible to this insect, the unique ecosystems in which they occur could be seriously compromised” (EXFOR pest report).

“*Callidiellum villosulum* is native to Henan, Jiangsu, Zhejiang, and Fujian Provinces in China” (EXFOR pest report). A hardiness zone map of China demonstrates that all are in hardiness zones 8 and 9 (China Plant hardiness map; Fig. 2). Comparison to US hardiness zones for the states that bear host trees native to China demonstrates that coastal North Carolina, the southern half of Alabama, and virtually all of Louisiana have suitable climates for *Callidiellum villosulum* (US zones 8 to 11; Fig. 3). In addition, if the host trees in California prove to be susceptible, they fall within the hardiness risk zone for this beetle as well.

The statement has been made that “species *C. villosulum* is considered a secondary pest because it preferentially attacks only weakened or freshly felled conifers” (Grounds Maintenance, 2004; KRSNetwork, 2004) but other sources indicate that in the US species of *Callidiellum* do not behave as they do in their native range. *Callidiellum rufipenne* is reported to be a secondary insect using dead trees (Shibata, 1994), but has been intercepted in live arborvitae, *Thuja occidentalis*, variety Emerald Green, ranging in size from 3 to 9 feet (APHIS News, 2004; Bugwood, 2004). Emerald Green arborvitae is a popular landscaping tree for lawns in North Carolina. For this reason, *C. villosulum* may not be considered a secondary pest, but until demonstrated otherwise should be considered a pest of living trees and capable of inhabiting much of the southern US.

Summary: *Callidiellum villosulum* (Fairmaire) appears to be capable of attacking living trees, of inhabiting the southern third of the US, and has naturalized host trees in at

least three states of the US. Therefore, it should be considered a high risk pest, as stated in the EXFOR pest report.

References:

APHIS News. 2004. http://www.aphis.usda.gov/oa/pubs/pa_jclb.html (Accessed December 10, 2004).

Bugwood. 2004. <http://www.gacaps.org/pests/cedarlonghorn.html> (Accessed December 10, 2004).

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Lingafelter, S. 2004. Email to P. Courneya, forwarded to J. W. Smith; December 10, 2004.

Shibata, E. 1994. Population studies of *Callidiellum rufipenne* (Coleoptera: Cerambycidae) on Japanese cedar logs. *Ann. Entomol. Soc. Amer.* 87(6): 836 – 841.

USDA, NRCS. 2004. The PLANTS Database, Version 3.5 (<http://plants.usda.gov>). [National Plant Data Center](http://plants.usda.gov), Baton Rouge, LA 70874-4490 USA.

Figure 1: *Callidiellum* spp. similar to *C. villosulum*;
photo Kansas Department of Agriculture



Figure 2: Plant hardiness zones in China:
(<http://www.backyardgardener.com/zone/china.html>).



Figure 3: US hardiness zones 8 to 11; map created by Glenn Fowler.

