

HOW RISKY IS BARK THAT IS ASSOCIATED WITH TREATED WOOD PACKING MATERIAL?

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ABSTRACT

Many of the bark- and wood-infesting insects that have become established outside their native ranges were likely transported in wood packing material (WPM) such as pallets, crating, and dunnage (Haack 2006). WPM, especially in past decades, was often made from untreated, low-grade green lumber that had much residual bark. In recognition of this phytosanitary threat, the international community adopted standards for treating WPM in 2002 that are referred to as “International Standards for Phytosanitary Measures No. 15” or simply ISPM-15 (FAO 2002). Originally there were two approved treatments—heat treatment (minimum core temperature of 56°C for 30 min) and fumigation with methyl bromide—but others such as microwaves may follow (FAO 2002, Keiran and Allen 2004). These treatments are aimed at killing insects and disease organisms that reside in the wood at the time of treatment. Currently, ISPM-15 allows bark to be present on treated WPM; however, it is not known if insects can infest WPM after treatment, especially when bark is present.

We conducted studies in 2004 and 2005 to investigate whether insects would infest recently milled green logs and lumber that had varying amounts of bark. This study was conducted as part of an international collaborative effort under the auspices of the “International Forestry Quarantine Research Group” (<http://www.forestry-quarantine.org>). In 2006, we conducted surveys of foreign WPM marked with the ISPM-15 logo that arrived at six U.S. ports-of-entry to estimate the

percentage of the WPM that contained bark and live insects of quarantine significance. Other details of these projects were published recently as extended abstracts (Haack et al. 2007a,b)

In the 2004 log study that tested three hardwood species and one conifer, Cerambycidae and Scolytidae infested and reproduced in fully barked logs after heat treatment, often at densities higher than in the non-treated control logs. In the 2005 study that used only red pine boards, Cerambycidae and Scolytidae laid eggs in all sizes of bark patches that were tested (about 25, 100, 250 and 1,000 cm²) after heat treatment, but did not infest control or treated boards that had no bark. Cerambycidae completed development in only those boards with bark patches of about 1000 cm², while Scolytidae completed development in bark patches of 100, 250, and 1000 cm².

In the 2006 survey in which nearly 6,000 individual pallets, crates, and pieces of dunnage were evaluated at six U.S. ports, approximately 9.4% of the wood items contained some bark, and of those with bark about 1.2% contained live insects under the bark, for an estimated overall infestation rate of all WPM of 0.1% (0.1% = 9.4% x 1.2%).

These studies indicate that insects of quarantine significance can infest and develop in bark patches on WPM after heat treatment, although the actual infestation rate of WPM marked with the ISPM-15 logo is relatively low.

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