Wood Education and Resource Center

Treatment System Desiccates Pests in Wood Packaging Materials

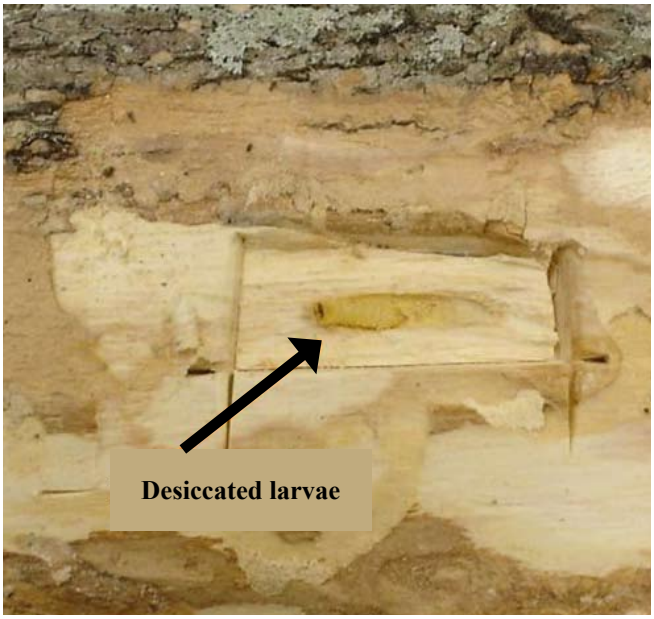
The Challenge

The spread of the Asian longhorned beetle (ALB) and the emerald ash borer (EAB) in wood packaging materials and related products has become a major concern of the United States because of the potential introduction of foreign pests into natural ecosystems. Other countries worldwide share these concerns. As a result, the International Plant Protection Convention (IPPC), which consists of 117 countries, passed a regulation to limit the movement of insects and diseases through wood packaging materials by requiring specific phytosanitation treatments for wood packaging materials used for export. Current regulations require that wood packaging material be treated with heat or fumigated prior to export. Heat treatment requires additional energy, and fumigation raises concerns over environmental problems. Due to the increased costs of phytosanitation treatments, the wood packaging industry is searching for alternative treatments that require less energy and are more economical.

The Solution

With funding provided by the Northeastern Area State and Private Forestry Wood Education and Resource Center, researchers from Virginia Polytechnic Institute and State University and the U.S. Forest Service Northeastern Center for Forest Health Research and the Northern Research Station have developed a vacuum treatment process to kill insects in wood packaging materials. A series of tests were conducted to determine if the vacuum treatment was effective against ALB and EAB. The low-pressure vacuum treatment system desiccated insects in wood and other materials, and killed ALB pupae and eggs and EAB larvae.

A new vacuum treatment system addresses the global issue of phytosanitation of wood packaging materials by killing insects in wood and wood products.



Dead emerald ash borer larvae after vacuum treatment.

Resulting Benefits

- Eliminates the need for heat treatment
- Conserves energy and reduces costs
- Eliminates environmental concerns such as the release of ozone-depleting chemicals in fumigation
- Eliminates the risk of infested wood material
- Possible alternative treatment for countries exporting into the United States

Sharing Success

- Virginia Tech Intellectual Properties, Inc., has applied for a patent for this process and is seeking licensees.
- This process is being considered by the International Forestry Quarantine Research Group of the IPPC and as an alternative treatment in the International Standard for Phytosanitary Measures for controlling the migration of quarantined pests in wood packaging materials and pallets during international shipments.

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