EFFICACY OF RADIOFREQUENCY TREATMENT ON ASIAN LONGHORNED BEETLE (ALB) AND EMERAL ASH BORER (EAB) IN ROUNDWOOD

Ron Mack*
Otis Laboratory
USDA-APHIS-PPQ-CPHST

Kelli Hoover, John Janowiak, and Brad Gething
Penn State University

A custom built 15kW radiofrequency (RF) chamber (PSC, Inc., Cleveland, Ohio) was placed at locations in Worcester, MA and Brighton, MI to assess the efficacy against Asian longhorned beetle (ALB) and emerald ash borer (EAB) in naturally infested roundwood. The study objectives included determination of lethal temperature required for complete mortality, characterization of heating patterns in different wood species, and development of power densities for further economic analysis. Complete mortality was achieved for both insects at targeted temperatures of 55C and above. Heating patterns in ash and maple exhibited very different, yet predictable results. Power densities averaged in the range of 300 kw/m3 for tests run on maple, and approximately 500 kw/m3 for tests on ash.