

INSECT REARING – A TOOL FOR DETECTING NON-INDIGENOUS WOOD BORING INSECTS

Troy Kimoto¹ and Lee M. Humble²

¹Canadian Food Inspection Agency, Plant Health Surveillance Unit
4321 Still Creek Dr., Burnaby, BC, V5C 6S7 Canada

²Natural Resources Canada, Canadian Forest Service, Pacific Forestry Centre
506 West Burnside Rd., Victoria, BC, V8Z 1M5 Canada

ABSTRACT

Since 1998, the Canadian Food Inspection Agency (CFIA) has been using Lindgren funnel traps baited with the exotic bark beetle lure, ultra high release (UHR) ethanol, and UHR ethanol/UHR alpha-pinene to detect non-indigenous wood boring insects. However, several insects either do not respond to the lures used in this survey or do not rely on long-range chemicals to locate mates or host trees. Although effective at detecting some target species, this type of survey limits the spectrum of potentially detectable insects.

Rearing insects from infested logs is a more generalized approach to detection because it does not exclude insects that do not respond to specific lures. As long as brood production of a given species occurs under the bark or within the wood of any tree, this survey has the capability to detect that insect.

The CFIA, in partnership with the Canadian Forest Service, City of Surrey, City of Toronto, City of Montréal, Halifax Regional Municipality, and Vancouver Parks Board, is rearing infested logs as a tool for detecting

established populations of non-indigenous wood boring insects.

Steel marine transport containers (40 feet long) were modified into climate-controlled rearing facilities and placed in pre-selected locations in each of the cities (Surrey, Toronto, Montréal, Dartmouth). Logs that meet specific criteria (e.g., proximity to high risk sites, state of decline, signs of insect activity, etc.) are obtained through a city's hazard tree removal program. Logs are placed in sleeve cages suspended from an overhead racking system or placed in modified sonotubes/building forms and held for insect emergence.

To date, ambrosia beetles, weevils, bark beetles, longhorn beetles, and metallic wood borers have been reared from a variety of softwood and hardwood species. Although a few naturalized non-indigenous species have been collected, most of the reared insects are native. To date, there have not been any new records of introduced species.