

Project description	Contact
<p>Augmentative biological control of emerald ash borer with native parasitoids by developing rearing techniques (for hosts and parasitoids) and by conducting preliminary investigations into the biology of <i>Phasgonophora sulcata</i> and <i>Balcha indica</i>.</p> <p>Investigation of pathogens of native <i>Agrilus</i> spp. for potential biological control of emerald ash borer (in collaboration with G. Kyei-Poku) by providing EAB for inoculation.</p> <p>Investigation of feeding assays on EAB adults (in collaboration with D. Doucet/B. Tomkins) by providing adult EAB.</p> <p>Determine ash foliage chemistry (in collaboration with M. Abou-Zaid) by undertaking feeding bioassays by EAB under quarantine conditions using foliage discs.</p> <p>Development of a cell culture of EAB (in collaboration with G. Caputo and S. Hooley) by providing neonate larvae as well as prepupae for culturing.</p>	<p>Name: Barry Lyons Phone: 541-5617 Email: barry.lyons@nrca-nrcan.gc.ca</p>
<p>Using the severed heads of adult EAB for GC-EAD (gas chromatography- electroantennogram detection) bioassay of volatile compounds from host ash trees. The electrophysiological responses from the olfactory receptors on the beetle's antenna are used to detect those host compounds that it can smell and thus may be attractive to it when used as baits in traps. The GC-EAD is a sensitive bioassay that provides a rational basis for selecting host compounds as potential attractants for use in monitoring traps to detect new infestations of EAB.</p>	<p>Name : Gary Grant Phone : 541-5519 Email : gary.grant@nrca-nrcan.gc.ca</p>
<p>A study of host response to insect attack. EAB larvae are implanted into young green ash saplings. RNA and proteins are produced in response to these foreign invaders. The identification of these nucleotides and proteins could be used to monitor EAB populations.</p> <p>Sensitivity to insect growth regulators such as molting hormone analogs. These compounds might have potential for the control of EAB.</p> <p>Some preliminary work with artificial media is being looked at to complement the work with insect growth regulators.</p>	<p>Name: Daniel Doucet Phone: 541-5513 Email: daniel.doucet@nrca-nrcan.gc.ca</p>
<p>As a member of the Biotechnology Research Project, the Tissue Culture Study is involved in the isolation, development and maintenance of continuous insect cell lines and cell culturing systems for studying and developing effective, environmentally acceptable, and economically viable insect control agents as alternatives to chemical use</p>	<p>Name: Guido Caputo Phone: 541-5517 Email: guido.caputo@nrca-nrcan.gc.ca</p>

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<p>to control forest pests. Towards that objective, we are presently in the process of developing primary cell cultures using various tissues from different stages of Emerald Ash Borer (<i>Agrilus planipennis</i>) with the goal of establishing a continuous cell line. Since this invasive beetle is a quarantined insect, we are conducting our work in the Quarantine laboratories in compliance with the required handling of a quarantined insect.</p>	
<p>The Insect Production Unit staff are presently working in collaboration with Dr. Leah Bauer's team at the USDA Forest Service, Northern Research Station & Michigan State University, East Lansing, Michigan, to develop an artificial diet and a laboratory method for rearing Emerald Ash Borer <i>Agrilus planipennis</i> in captivity. We are currently modifying the semi-artificial diet developed by Blossey et al. (2000) for larvae of <i>Hylobius transversovittatus</i>, a weevil used for biological control of purple loosestrife by using ash phloem powder instead of purple loosestrife powder. If we are successful, our next mission would be to try and isolate specific compounds of the ash powder necessary for beetle development via larval bioassays and to develop a synthetic product to replace the ash powder. This portion of the research would be conducted in collaboration with Dr. Mamdouh Abou-Zaid, Natural Products Chemist, GLFC.</p>	<p>Name: John Dedes Phone: 541-5763 Email: john.dedes@nrca-nrcan.gc.ca</p>