

**OPHIOSTOMA TETROPII AS A DETECTION TOOL FOR THE BROWN SPRUCE
LONGHORN BEETLE IN HALIFAX, NOVA SCOTIA**
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Abstract

Since the discovery of the brown spruce longhorn beetle (BSLB), *Tetropium fuscum* (Fabr.) in a small area in the Halifax Regional Municipality in Nova Scotia in 1999, a species of *Ophiostoma* has been isolated repeatedly from BSLB-infested trees. This *Ophiostoma* was determined to be *Ophiostoma tetropii* Mathiesen (Jacobs and others, 2003). This European species was originally described from Norway spruce (*Picea abies* (L.) Karst.) infested with *Tetropium fuscum* and *Tetropium castaneum*. In Europe these insects are considered to be secondary, but in Halifax BSLB is attacking living and apparently healthy trees with green crowns and killing them (Smith and Humble, 2000). In Halifax, the native red spruce (*Picea rubens* Sarg.), white spruce (*P. glauca* (Moench) Voss) and black spruce (*P. mariana* (Mill.) BSP) as well as introduced Norway spruce, are attacked.

Since 2000, the Canadian Food Inspection Agency (CFIA) has designated BSLB as a pest of plant quarantine significance and has an on-going eradication program in place to detect and eradicate this insect from its first toehold in the forests of North America. Survey and detection of BSLB in the natural and urban forest is a serious challenge.

This presentation discusses the close association observed between *Ophiostoma tetropii* and BSLB in the infested spruce trees in Nova Scotia. We have found that *Ophiostoma tetropii* can be readily isolated on selective culture media and identified in about one month. Successful insect rearing for BSLB can take a minimum of 12-14 weeks for overwintered wood bolts or 24-28 weeks for wood bolt samples collected in late summer when the insect is in an early larval stage. When low populations of BSLB exist in stands where the majority of spruce trees are infested with native bark beetles, it is very difficult to detect the BSLB. The presence of *Ophiostoma tetropii* is a strong indicator that BSLB is or was present in the stand, so the use of the fungal associate as a detection tool offers timely answers to focus the eradication effort.

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