

RECENT IMPROVEMENTS IN THE EFFICACY OF TRAPPING THE BROWN SPRUCE LONGHORN BEETLE, *TETROPIUM FUSCUM* (F.), USING HOST VOLATILE-BAITED TRAPS

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Abstract

The brown spruce longhorn beetle, *Tetropium fuscum* (F.), native to Europe, has been the target of an eradication program led by the Canadian Food Inspection Agency in Halifax, Nova Scotia, since June 2000. In field trapping experiments in 2001 and 2002, we showed that a synthetic lure ('spruce blend') that simulated the blend of monoterpenes emitted from stems of infested red spruce trees was attractive to *T. fuscum*, and that the addition of an ethanol lure synergized attraction of both *T. fuscum* and *T. castaneum* (L.). In 2003, our objectives were to determine the effect of release rate on attraction of *Tetropium* spp. to spruce blend and ethanol, and to compare the efficacy of different trap designs with wet vs. dry preservatives. Trapping experiments were conducted from May to July 2003 on McNabs Island, Halifax, N.S., and in the Białowieża Forest, Poland. Traps baited with high release rate lures of spruce blend plus ethanol caught significantly more *T. fuscum* and *T. castaneum* than any

other treatment, a two to sevenfold increase in catch over traps baited with low release rate lures of spruce blend plus ethanol. Trap design and type of preservative in the collecting cup significantly affected mean catch of *T. fuscum*. Colossus traps caught about twice as many beetles as the IPM-Intercept traps, and "wet" traps (with 50% propylene glycol in the collecting bucket) caught more beetles than "dry" traps (with a dichlorvos strip). Colossus-wet traps, baited with high release rate lures of spruce blend and ethanol, are recommended for surveys in 2004 as their use will increase the chances of detecting *T. fuscum* where it is present, compared to the low release rate lures used in 2002 and 2003. In future studies we plan to determine the relationship between trap catch and density of *T. fuscum* infestation in host material and investigate the use of pheromones for long distance attraction in *Tetropium* spp.