Title Effectiveness of a multi-species attractant in two different trap types under practical grain storage conditions

Author L.E. Collins, G.P. Bryning, M.E. Wakefield, J. Chambers, K. Fennah and P.D. Cox

Citation Journal of Stored Products Research, Volume 44, Issue 3, 2008, Pages 247-257

Keywords Multi-species lure; *Oryzaephilus surinamensis*; *Sitophilus granarius*; *Cryptolestes ferrugineus*; Attractant; Trap

Abstract

Commodities may be attacked by a multitude of pest species simultaneously and so to be cost-effective any lure must be attractive to a range of target species. The objective of this study was to test a multi-species lure formulation with different dispensers under conditions as close as possible to their use in practice. The attractant effect of the multi-species lure formulation was tested using two types of dispensers with populations of the three principal grain beetle pests in the UK (*Oryzaephilus surinamensis*, *Sitophilus granarius* and *Cryptolestes ferrugineus*). The trials were performed over a period of six weeks with the lures tested in PC™ Traps: first in a grain bulk and in six grain bins and second in the surrounding area using PC™ Floor Traps. The amounts of volatiles released in and around *in situ* traps were measured using Solid-Phase Microextraction (SPME).

The first lure dispenser tested was attractive to *O. surinamensis* and *C. ferrugineus* but it attracted fewer *S. granarius* than the control traps. It was shown that most of the volatiles were released at the beginning of the trial and therefore lures were not effective over the whole six-week period. The second lure dispenser released the attractant volatiles more consistently over six weeks and exerted significant attraction to *O. surinamensis* and *C. ferrugineus* in PC™ Traps in the grain bulk and to *O. surinamensis* and *S. granarius* in floor traps. Too few *C. ferrugineus* were caught in floor traps to make a comparison. The reason for the repellent effect on *S. granarius* in the grain bulk was unclear and this is discussed along with the importance of measuring volatiles released by the lure.