

Title Preliminary molecular investigations of three *Liposcelis* species associated with grain storage systems in Australia.

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Abstract

Molecular methods are being utilized to examine the genetic structure of three psocid (Psocoptera) species, *Liposcelis bostrychophila*, *L. decolor* and *L. entomophila*, that infest grain bulk storage facilities throughout Australia. As there is currently no known nucleotide sequence information on these three species, various molecular techniques are used to investigate their genetic structure and general molecular ecology. This paper documents the use of microsatellites and randomly amplified polymorphic DNA (RAPDs) to examine the genetic structure of these species. Outcomes from this work will determine the extent of gene flow among *Liposcelis* populations infesting bulk grain storage and transportation systems in Australia. In addition, this work will help characterize and monitor changes in the genetic diversity of psocid populations, while gaining a greater understanding of the origin and movement of *Liposcelis* species within Australian bulk grain handling systems.