

What can DNA Fingerprinting, Aggression Tests and Morphometry Contribute to the Identification of Colonies of the Formosan Subterranean Termite (Summary)?¹

by

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The assignment of termite infested sites (structures, aggregation traps) to specific colonies, has become essential in applied termite research. Three independent methods, multilocus DNA fingerprinting, aggression tests and morphometry, were compared to evaluate their potential for the identification of colonies of the Formosan subterranean termite, *Coptotermes formosanus* (Isoptera: Rhinotermitidae) in Hawaii. DNA fingerprinting separates the termites from all studied collection sites. Since the genetic similarity between termites from different collection sites lies in the range of the genetic background similarity in the population, collection sites in this study represent independent colonies. No significant differences could be found in the intra- and intercolonial aggression levels. While aggression tests do not support colony identification, morphometric measurements do show differentiations between colonies. However, classification of individuals to their original colony does not reach the 100% success provided by genetic analyses. No correlation between genetic similarities and aggression levels or morphometric distances could be found. This suggests that neither aggression levels nor morphometric parameters are significantly influenced by genetic factors in this species. Genetic studies appear to be the most useful approach to the identification of colonies and the analysis of small scale population structures in *C. formosanus*.

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