Public Abstract

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Title:Comparing the Diversity, Geographic Distribution, and Intraspecific Variation of Subterranean Termites (Reticulitermes: Isoptera: Rhinotermidtidae) Occurring in Woodlands and Urban Environments of Missouri Using Morphology and 16S mtDNA

To study Reticulitermes species diversity, abundance and genetic variability within Missouri, I gathered approximately 600 samples of termite colonies during 2004 and 2005 from nine conservation areas, nine cities located near these conservation areas, and from home infestations occurring at several locations within the state.

Reticulitermes flavipes (Kollar), Reticulitermes virginicus (Banks), Reticulitermes tibialis Banks and Reticulitermes hageni Banks were found in Missouri. Reticulitermes flavipes and R. hageni were the most abundant species. Reticulitermes hageni was found to be more abundant in woodlands than in urban environments while R. flavipes was more abundant in urban environments than woodlands. Reticulitermes hageni and R. virginicus geographic distribution were further north and west within the state than previously reported. Unexpectedly, Reticulitermes tibialis was only found in urban and home infestations and not in the woodlands we sampled. Intraspecific genetic variability based on a portion of the 16S mtDNA gene distinguished thirty-three haplotypes from the 364 samples sequenced for all four Reticulitermes species. Reticulitermes flavipes genetic variability based on haplotype numbers was the highest among Missouri species and R. hageni was the lowest.

Analysis of morphometrics suggests differences in size among soldiers of R. flavipes collected from woodlands versus home infestations and among soldiers of the most common haplotypes of R. flavipes.