

Complex associations of subterranean termites and Actinobacteria

Summary:

Eastern subterranean termites, *Reticulitermes flavipes* (Kollar), are responsible for significant damage to wood products and structures. In the United States, colonies of *R. flavipes* are most prevalent in the warmer, southeastern regions, however their range does extend to a number of locations further north.

Currently, it is thought that termite colonies in Wisconsin are located along the northern edge for the known distribution of this species. These colonies are thought to have resulted from human movement of infested materials, as dispersal by winged reproductives is negligible. Successful establishment of termites into new environments requires an ability to both adapt to local climate conditions and contend with exposure to potentially harmful microorganisms. Associations with bacterial symbionts can potentially contribute to successful establishment by providing protection from colony-invading microorganisms. In a diversity of insect species members of Actinobacteria have been shown to confer this type of antimicrobial activity. Here I examined the antimicrobial activity of termite gut associated Actinobacteria and discuss the potential role of this bacterial phyla within the termite system.