

Antitermite Activity of α -Caryophyllene Epoxide and Episulfide

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Caryophyllene-6,7-epoxide and caryophyllene-6,7-episulfide can be easily synthesized from α -caryophyllene by autoxidation or episulfidation. The bioactivities of α -caryophyllene and its derivatives were investigated against the subterranean termite *Reticulitermes speratus* Kolbe. The antifeedant, feeding, and termiticidal activities of each compound were tested using no-choice, dual-choice, and non-contact methods. Antitermitic activities were not shown by α -caryophyllene, but were observed for the oxide and sulfide derivatives. Caryophyllene-6,7-episulfide showed especially high antifeedant and termiticidal activities. Thus, naturally abundant, non-bioactive α -caryophyllene can be easily converted into an antitermite reagent via a non-biological process.

Key words: ^{13}C NMR, Bioactivity, Autoxidation