

## 66. Foraging food resources by the subterranean termite, *Reticulitermes grassei* (Clemént,1978) Blattodea: Rhinotermitidae

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Subterranean termites, despite their essential role as decomposers on natural ecosystems, are voracious pests of wood in service, and may cause damage to wood in buildings and economic losses associated with treatments and repair costs. In-ground baiting stations are one of the most used techniques for subterranean termites' control, as it involves the use of small amounts of targeted biocides mixed with an adequate cellulose matrix. Termites should find the stations and feed on the bait with biocide, which will then be spread by trophallaxis within the termite colony. The efficacy of this method relies on the ability of the termites to find, and feed, on the baits. Termites may be attracted to cellulosic food sources according to different signals and cues, such as wood chemicals components, or other substances, released by the decaying wood. The objective of this study was to investigate possible attractive substances acting on the subterranean termite, *Reticulitermes grassei* Clément. Termites were submitted to choice tests between a control (extracts of sound maritime pine wood (*Pinus pinaster* Ait) and: 1) simple sugars - sucrose, xylose, glucose (2%), and 2) cold water extracts of maritime pine wood decayed at four different levels, by a white rot, and a brown rot. Termites showed significant preference for the substances tested. Regarding the extracts of decayed wood, termites also showed significant preference for them, except the higher level of degradation by white rot. Higher consumption rates were associated to xylose and to the two lower levels of degradation of brown rot. The differential behaviour of *R. grassei* towards simple sugars and extracts may be explained by the production of smaller molecules (and gradients) along the wood degradation process, which may act as repellent or attractive for the subterranean termites during their foraging activities.

**Keywords:** subterranean termites, wood decay fungi, foraging behaviour.