Damage pattern and nesting characteristic of Coptotermes curvignathus (Isoptera: Rhinotermitidae) in oil palm on peat.

Abstract

The oil palm industry of Malaysia has expanded into peat area in Sarawak. Problem statement: The subterranean termite Coptotermes curvignathus was a serious pest of oil palm on peat. Control of this termite has resorted to heavy usage of chemicals which was deemed uneconomical and hostile to the environment. Baiting system has inconsistent success due to the limited knowledge of the behavior of the pest. Approach: This study was to investigate damage and nesting characteristic of the pest. Infested palm in the peat area was dissected using a chainsaw and observation was made on the endoecie and damage. Microclimate inside the palm was recorded using a data logger and acid insoluble lignin from 3 different infested palms was determined. Results: Dissection of infested palm revealed that termite generally attacked the palm from the spear in immature palm or basal region in mature palm due to the energy requirement and level of water table. Spear region infestation was possible because of the moist environment provided by the proximity of the fronds and leaf sheaths. The high lignin content (42-45%) in the thin laminae indicated the concentration of lignin or incorporation of peat in nest construction. Wood stump residues remained in the plantation was one of the main reasons of termite infestation. The stability and protection of the wood stump encouraged termite breeding. A C. curvignathus queen was discovered in the endoecie under the wood stump and was seen mobile. Conclusion: The pest was generally available in area where wood stumps and moisture were available. Manipulation of water table for certain period after spraying of chemical may help reduce infestation by the termite.

Keyword: Oil palm; Coptotermes curvignathus; Damage pattern; Nesting characteristic