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Indoor and outdoor controlling evaluation on the subterranean termite, *Psammotermes hybostoma* (*Isoptera: Rhinotermitidae*) using some unordinary natural oils and others

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The present work was conducted to evaluate controlling the subterranean sand termite, *Psammotermes hybostoma* using some unordinary natural oils and others in the laboratory and field as indoor and outdoor investigations, respectively. The results were analyzed statistically by T-test.

Ten kinds of oils [Caraway, Onions, Garlic, Clove, Peppermint, Basil, Eucalyptus (Camphor), Sesame, Tar and Fenugreek] and three other substances [Neem seeds extraction, gum bees powder (Propolis) and aluminum sulphate powder (Alum)] were used. These materials have been observed under laboratory conditions, and field conditions at two regions namely; El-Konooz region and the farm land of South Valley University during the period from January to December 2011, and in three infected buildings at El-Konooz region during the period from February till June 2012 in Qena city.

Laboratory results showed that, the highest mortality rate was recorded by using caraway oil (100 workers per hour). In contrast, the lowest mortality rate was observed when propolis and neem seeds extraction used (0.26 workers per hour) equally.

On the other hand, the outdoor field results agreed with the laboratory investigations. Thus, the highest ratio of sand termite individuals, caught in corrugated cardboard traps allover one complete year, was in the traps treated with propolis (95.6%). In contrast, the lowest was (0.24%) with clove oil. The ratio was (0.0%) in the presence of the following oils (caraway, basil, camphor, garlic, peppermint and tar) at El-Konooz region.

Moreover, field results of the farm land of South Valley University showed that the highest ratio of sand termites individuals was in the traps treated with propolis (92.7%). Inversely, the ratio was (0.0%) in the cases of the following oils (caraway, basil and garlic).

On the other hand, statistical analysis on the field results showed highly significant differences between the mean numbers of the individuals caught in traps treated with all oils and their control, whereas, there were no significant differences in the case of propolis and neem seeds extraction and their control.

In relation to the results on infected buildings, the total numbers of individuals obtained from corrugated cardboard pieces were zero in the doors and windows frames that treated with the following oils (caraway, basil and camphor), despite continuing injury in the control case (2070 and 1424 individuals from doors and windows frames, respectively).

Thus, it is recommended using the most effective repellent oils (caraway, basil, camphor, garlic, peppermint, tar and clove) in subterranean termite control inside buildings by spraying infected timber or injection in the ground or by traps in the soil instead of chemical pesticides with harmful impact on the environment and health.

Biography

Karem Mohamed Mohanny has completed his Ph.D. at the age of 44 years from Cairo University. He is the Head of Plant Protection Department, Faculty of Agriculture, South Valley University. He has published more than 15 papers in reputed journals.

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