

Termite infestation and control in health facilities in Pasir Puteh district, Kelantan

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ABSTRACT

Introduction: Termites are a highly destructive group of insect pests in urban settings. Termite infestation causes negative economic impact by reducing the aesthetic value and the strength of buildings and structures. This leads to costly building maintenance and restoration. A common method of termite control is by using corrective soil treatment. Meanwhile, an alternative method of termite control is by using baiting treatment. A total of 19 complaints of termite infestations at health facilities in Pasir Puteh district were reported from 2016 to 2022. The baiting treatment method has just recently been used in 2022 at health facilities in Pasir Puteh over soil treatment to eliminate termite colonies. The objectives of this study are to determine the time frame of termite bait consumption and to perform cost analysis of using the termite baiting treatment method. **Materials and Methods:** Complaint records of termite infestations at health facilities in Pasir Puteh district from 2016 to 2022 were reviewed. Pest investigations were conducted accordingly to identify active mud tubes. The termites were sampled from active mud tubes and identified based on their morphology. Control activities using both corrective soil treatment and baiting treatment methods were conducted on active mud tubes only. For the corrective soil treatment method, quotations for control measure were enquired from registered pest control operators. Licensed pest control operators would pump termiticides into drilled holes along the perimeter of the house and this would only be done once. For the above-ground baiting method, the placement of bait stations with an active ingredient of Chlorfluazuron was carried out by the Entomology and Pest staff of District Health Office Pasir Puteh. These bait stations were placed over active termite mud tubes. The bait stations were inspected bi-weekly and fresh bait were replaced until the bait consumption ceased. The time frame until the bait consumption ceased and the amount of bait used were recorded. The cost of termiticide usage for both methods were then recorded and analysed. **Results:** Out of 19 complaints, 5 (26%) soil corrective treatment method were done by pest control operators and 7 (37%) above-ground baiting treatment method were done by the Entomology and Pest staff of District Health Office Pasir Puteh. 79% of the complaints consist of lower termites (F: *Rhinotermitidae*) that have infested the health facilities, while 16% are of the higher termite group (F: *Termitidae*), and the remaining 5% are of the drywood termites (F: *Kalotermitidae*). The results reported that 100% health facilities infected with higher and lower termites can be eliminated using the baiting treatment method with the aid of termite behaviour of trophallaxis. Chlorfluazuron bait needs an average of 8 to 16 weeks for lower termites and 16 to 20 weeks for higher termites to eliminate the infestation at the study sites. The baiting treatment method needs minimal usage of insecticides, and it is also less intrusive when compared to the corrective soil treatment method that requires extensive floor drilling to apply a relatively larger amount of termiticides into the ground. Furthermore, the baiting treatment method can reduce the cost by more than 50% compared to the corrective soil treatment method. **Conclusion:** Baiting treatment method using bait with Chlorfluazuron as an active ingredient may suppress and possibly eliminate termite colonies of both higher and lower within 2 to 5 months from the commencement of feeding. It can also save the treatment cost compared to the corrective soil treatment method. Further studies should be conducted to compare and contrast the entire treatment cost between the two methods.