

Assessment of the impact of chemical intervention in the ecology (rat activity) of *Rattus norvegicus* in an urban-slum community of Salvador-BA, Brazil

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The main reservoir for urban leptospirosis is *Rattus norvegicus*. The rapid increasing of slums human population creates ideal conditions for rat-borne transmission. Although prevention of urban leptospirosis has relied on control of the rat reservoir; studies evaluating the effectiveness of these intervention measures are scarce. The objective of this study was to determine if a chemical intervention is an effective strategy to reduce rodent population. The study was conducted in an urban slum settlement in Salvador, Bahia. The study area was composed of three valleys. In two of the valleys a chemical intervention was performed, while the third valley had no intervention (control site). Anticoagulant rodenticides were applied in all the houses that presented evidence of rodent presence and whose owner consented to participate. The locations and quantity of rodenticides applied by the Centro de Control de Zoonoses (CCZ) was recorded. The intervention consisted of three applications and a second environmental evaluation post-intervention. The rat activity was measure through a tracking plates (TPs) methodology, previously described. A total of 117 points randomly selected within the study area polygon from the three valleys was sampled. Nine samplings events were carried out: two before the intervention and seven post-intervention. The relative odds of rat present were significant different in the two intervened valleys (0.2; 95%CI: 0.11-0.24), while the factor of mean level of rat activity was significant different in only one of them (0.1; 95%CI: 0.06-0.18). On the other hand, control valley's value was different but not significant (0.8; 95%CI: 0.52-1.13). These results indicated that after six months of chemical intervention, the level of rat activity has not reached the previous level. Although we are still working in more in depth spatial-temporal analysis, a reduction in the rat activity was observed; after the chemical intervention.

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