

Introduction

Trypanosomosis is a bottleneck on the livelihood of farmers in the study area and the Ethiopian government has been using 0.4% Delthamethrine impregnated targets and 1% pour-on to reduce the impact of this disease on food security. However, there was no information on the effect of this chemical on the prevalence of Trypanosomiasis.

Objective

The aim of the study was to evaluate the effect of Deltamethrine in controlling trypanosomiasis.

Methods

Cross-sectional study was conducted on cattle of two districts of Buno Bedele Zone in April 2020 and 2022. Paired samples “*t*” test statistic was used to summarize data by using statistical package for the social sciences (SPSS) statistics version 21. The approach followed to complete the study was implementing a pre-intervention phase to know the status of trypanosoma before using a chemical in April 2020 and an intervention phase using deltamethrine chemical on cattle at a rate of 1 mL/10 kg body weight and 0.4% Delthamethrine impregnated targets from October 2021 to March 2022. The post-intervention was done in April 2022 to evaluate the prevalence difference.

Results

Out of 576 cattle during pre-intervention 159 (27.60%) cattle were positive with a mean packed cell volume (PCV) of 20.68%.

During post-intervention out of 576 cattle, 27 (4.70%) cattle were positive with a mean PCV of 26.10%. For the study, there was strong evidence at a 95% confidence interval ($t=3.035$, $p<0.05$). Delthamethrine chemical application reduces the prevalence of the trypanosoma parasite by ten estimated mean. Also, there was strong evidence at a 95% confidence interval ($t=-84.66$, $p<0.05$) that Delthamethrine chemical application increased the PCV of cattle by five estimated mean.

Conclusion

In both districts, there was strong evidence that deltamethrin chemical application reduces the prevalence of trypanosome parasites. Deltamethrin chemical application increased cattle’s PCV, which showed that an intervention was encouraging to suppress trypanosomosis and should be continually implemented to keep the intervention difference.

Keywords Cross-sectional; Ethiopia; Delthamethrine; Packed cell volume, Pour-on, Prevalence of trypanosomosis, “*t*” test.