

## Abstract

A field trial was carried out in two endemic foci of animal trypanosomosis to assess the effectiveness of a synthetic tsetse-repellent technology developed for the control of cattle trypanosomosis in Kenya. The trial was conducted over a period of 12 months that was preceded by a baseline period of 4 months. A sample size of 24 herds made up of 12 treatment and 12 control herds was used. The sample size was estimated assuming an  $\rho$  of 5%,  $\rho$  of 20%, intra-herd correlation coefficient of 0.4 and that the repellent technology, if effective, would reduce the incidence of trypanosomosis in treated herds by 50% from the baseline level. The controls were selected purposefully to match the treatments in size and location. Trypanosome infections and tsetse challenge were monitored on a monthly basis. Two variables were used to gauge the effectiveness of the repellent: the herd-level trypanosomosis incidence and the rate of trypanocidal treatments administered by the recruited farmers. Trypanosomosis incidence was treated as an outcome variable in a population-averaged regression model that had treatment, study area, tsetse density in a village where a herd was located, season, drug use and herd size as independent effects. The rate of treatment was analyzed using a Weibull model. In all the analyses, the level of confidence was fixed at 95%. This paper presents the results of this work and discusses how the treatment interacted with the other variables offered to the models.