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. As ample size of 24 herds made up of 12 treatment and 12 control herds was used. The sample size was estimated assuming an of 5%, 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 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.