Abstract

Bovine trypanosomosis transmitted by tsetse flies is one of the diseases that constrains integrated crop livestock agriculture, food and income security and human health. The disease is widely spread in sub-Saharan countries including Uganda.

The main objectives of this study were to determine the knowledge, attitude and practices (KAPs) of farmers on the control of the disease, determine the prevalence, risk factors and species of trypanosome associated with the disease

A cross-section analytical observational survey and community-based survey were conducted around MFNP in Buliisa district. The study used a mixed research approach that involved qualitative and quantitative approaches. The qualitative approaches included focus group discussions, key informant interviews while the quantitative approach included cross section community survey and observational analytical cross sectional epidemiologic approach.

The majority of cattle keepers were aware about the presence of tsetse flies, bovine trypanosomosis as a major disease in cattle and human sleeping sickness was caused by tsetse flies. Bovine trypanosomosis was a major livestock disease. There were significant differences ($P < 0.05$) in the level of awareness and perception about tsetse and bovine trypanosomosis across the sub counties. The risky areas where cattle could encounter tsetse flies were reported by (33.1% n = 52) of the households as grazing near national park, along rivers by (23.6%, n= 37), in bushes and forests by (33.8%, n= 53) and in savannah bushes and shrubs by (9.6%, n =15). There was a significant difference ($P < 0.05$) in farmers' perception on the risky areas and the difference can be associated to the variation in the environment which *Glossina s*pecies inhabit. The communities were ignorant of the clinical signs and symptoms of bovine trypanosomosis.

The control practices of trypanosomosis carried out focused mainly on controlling tsetse flies from getting into contact with animals through spraying cattle with insecticides and not grazing cattle in areas infested with tsetse flies. Out of the 460 samples that were tested, 136 (29.6%) were positive while 324 (70.4%) tested negative, with an overall prevalence of 29.6% (95% CI: 25.4 -33.8%). *Trypanosoma vivax* (n = 130, 28.3%) was the most prevalent species and two mixed infection types *T. vivax* + *T. congolense* (n = 2, 0.4%) and *T. vivax* + *T.* (*Trypanozoon*) sp. (n = 1.0, 0.2%) were detected during the analysis. Female cattle were significantly more infected (χ^2 = 62, df= 1, $P < 0.05$) compared to males. There was a significant difference between age and prevalence of trypanosome infection (χ^2 = 6.28, df =2, P = 0.0043) despite cattle of different ages in the study area having been subjected to the same vector risk exposure. The results showed a significant difference between breed and trypanosome prevalence (χ^2 =10.61, df = 1, P = 0.001) with a higher prevalence observed in crossbred animals (Ankole /Friesians, Zebu/Friesians or Boran/ Friesians) compared to the predominantly local breeds (Ankole, Zebu, and Boran). The mean annual economic cost per household due to trypanosomosis was found to be USD 693 of which 83% and 9% were due to mortality and milk loss respectively.

The findings from this study showed that Bovine trypanosomosis is still a major constraint to integrated crop- livestock agriculture, a threat to food and income security and a very expensive disease to manage in pastoral and agro pastoral communities around MFNP.