TICK SURVEY ON GOATS AND SHEEP IN KENYA

E. N. MWANGI, P. D. SAYER, J. C. NJANJA and J. F. BELL
Veterinary Research Laboratories, Kabete, Kenya

SUMMARY

A tick survey was done on sheep and goats in Siaya and Kakamega Districts, Kenya between October 1980 and October 1981. Most of the animals were found to carry one to 10 ticks with no significant difference between sheep and goats. The most abundant species was *R. appendiculatus* followed by *R. evertsi*. There were more male than female ticks found on the animals. Thirty per cent of the farms visited practised the hand picking method of tick control while 14% regularly dipped their animals.

INTRODUCTION

Tick-borne diseases constitute a major constraint in animal production in Kenya. Ticks are responsible for the transmission of heartwater and Nairobi sheep disease, both of which are responsible for high mortalities in goats and sheep. Little work has been reported that identifies and quantifies ticks and their effects on sheep and goats. This paper reports a survey of tick populations found on sheep and goats from randomly selected small holder farms in the western part of Kenya which was carried out in the period between October 1980 and October 1981. Three visits were made to almost all farms at intervals of three to four months. Seasonal effects on the tick populations were therefore demonstrable.

MATERIALS AND METHODS

In Siaya district of Nyanza province four locations were visited, namely west Alego, south Sakwa, north Sakwa and north Gem, in which 39 farms were covered. A total of 468 East African goats and 230 sheep of various types including Red Maasai and Fat-tailed were examined.

In Kakamega district of Western Province the three locations visited were Marama, south Kabras and Isukha covering a total of 30 farms. Tick numbers were monitored on 275 goats and 159 sheep. Animals were ear-tagged for identification. Ticks were transported live to Kabete where the species, numbers, stages of development and sex were recorded. Tick infestation was as follows: 0=no ticks; 1=1–10 ticks; 2=11–50 ticks; 3=51–100 ticks; 4=over 100 ticks.

The times of the three visits were: Visit 1 – November 1980 to January 1981; Visit 2 – March 1981 to May 1981; Visit 3 – July 1981 to October 1981. At each visit a questionnaire concerning animal health and activities on the farm was administered. This included a series of questions concerning tick control by dipping or spraying practices. The data were analysed and comparisons were made to find out whether there were significant differences in tick numbers between locations, seasons and host species using the chi-square test according to Bailey (1981). The *P* value used for all comparisons was 0·001.
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RESULTS

Ticks were collected from 281 goats and 144 sheep from Siaya and 79 goats and 41 sheep from Kakamega. No ticks were found on the remainder of the animals. Six species of ticks were found on sheep and goats in the survey. These were *Rhipicephalus appendiculatus*, *R. evertsi*, *Boophilus decoloratus*, *Amblyomma variegatum* and two unidentified species, a *Rhipicephalus* and an *Amblyomma* species. Fig. 1 shows the proportions that these six species comprised on goats and sheep for each district. *R. appendiculatus* was the most abundant tick in both districts and on both hosts followed by *R. evertsi* and *A. variegatum*.

Table I shows the percentage of goats and sheep with various tick numbers for the locations studied in Siaya and Kakamega districts. The chi-square test showed that there were real differences between the locations.

Table II shows the percentage of goats and sheep with various numbers of ticks in the Siaya and Kakamega districts at different times of the year. There was

![Bar chart showing tick species distribution](chart.png)

**FIG. 1.** Percentage of different species of ticks found on sheep and goats in Siaya and Kakamega districts.

The total numbers of animals are shown above each histogram.