

Abstract:

We tested the practical application of an anaemia scoring chart (the FAMACHA© chart) as a method for controlling *Haemonchus contortus* in goats kept under smallholder conditions in a sub-humid area of Central Kenya. The objectives were: (1) to test the accuracy of the FAMACHA© chart in identifying anaemic goats ($PCV \leq 18$); (2) to quantify the proportion of goats left untreated at farm level when using the chart. On each of two farms, Small East African goats of various ages were allocated to two treatment groups; a FAMACHA© group (F1 (n = 34) and F2 (n = 31) on farms 1 and 2, respectively) and a control group (C1 (n = 34) and C2 (n = 30)). In F1 and F2 goats with a FAMACHA© score of 3, 4 or 5 were treated with anthelmintic after scoring. In C1 and C2 goats were treated every 4 weeks from 15 February to 20 July. Every 2 weeks all goats were scored with the FAMACHA© chart and weighed. Furthermore, faecal samples were collected for faecal egg counts (FEC) and blood samples were collected for packed cell volume (PCV) determination. *H. contortus* was found to be the predominant nematode on both farms. The mean FECs were higher on farm 1 compared to farm 2, while in contrast the mean PCV levels were lowest on farm 2. The latter was most likely due to the presence of *Fasciola* spp., flea and tick infections on farm 2. The accuracy of the chart was evaluated by using PCV as the gold standard for anaemia ($PCV \leq 18\%$). The mean percentage of false-negative scorings per sampling was 0.7% on farm 1 and 1.6% on farm 2, while the mean percentage of false-positive scorings was 9.7% and 21.4%, respectively. It is most likely that the accuracy of the chart was negatively affected by the concurrent parasite infections on farm 2. The mean proportion of untreated goats per sampling was 89% and 77% on farm 1 and farm 2. It was concluded that the FAMACHA© chart can be a valuable tool for decision-making in control of *H. contortus* in goats kept under smallholder conditions, without morbidity or mortality unacceptable to the farmer. The application may further reduce the risk of development of anthelmintic resistance by increasing refugia. However, caution should be taken under conditions where other anaemia-causing parasites are present (e.g. *Fasciola* spp. and ecto-parasites), since this possibly decreases the accuracy of the FAMACHA© chart.