positive for *S. aureus* (25.8%). Preliminary PFGE analysis reveals some sharing of *S. aureus* genotypes between goats and humans. Isolates of *S. aureus* from goats have displayed little evidence of antimicrobial resistance.

Surveys indicate that most goat owners consumed their own raw milk at home, and some process the milk for cheese making. Most farms milk their goats twice a day, either by machine, by hand, or both. Gloves are rarely worn during milking. A variety of procedures are used in pre-milking preparation, but all producers use post-milking germicidal teat dips/sprays.

Significance

S. aureus was uncommonly found (1.2%) in NC dairy goat milks. In contrast, 46.2% of goat nasal swabs were *S. aureus* positive. *S. aureus* from goats seldom exhibited antimicrobial resistance. The low prevalence of *S. aureus* in milk samples from NC dairy goats suggests current management practices may be effective at managing the risk of IMI.

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Effect of management factors on fecal egg counts of *Haemonchus contortus* in pastured sheep and goats in Northern New England

A.A. Wadsworth, DVM, PhD; **J.A. Weber**, BS
School of Food and Agriculture, University of Maine, Orono, ME 04469

Introduction

Haemonchus contortus (HC) is a subtropical parasite whose pasture-based larval stages are reduced significantly by severe Northern New England winters. Consequently, HC-contaminated northern pastures experience a winter die-off of infective larvae, with re-colonization of pastures occurring as temperatures moderate each spring. The cold winter environment of northern New England provides sheep and goat producers with an advantage over southern farmers because HC-infected fields may be managed each spring to minimize recontamination of pastures, and there is a short grazing season that limits the build-up of infective larvae on pastures. Management data were collected and HC concentrations in pooled feces were measured during the grazing season on 73 farms in Maine, New Hampshire and Vermont. Our objective was to determine the effect of farm type and management strategy on the abundance of *H. contortus* during the grazing season on northern New England farms.

Materials and Methods

Participants were recruited by invitation from Co-operative Extension and from sheep and goat association databases, and all that responded were included. The farms studied varied in animal number, species, and breed, and in management strategies employed for controlling HC. Prior to the 2014 grazing season, detailed data related to each farm's demographics and management strategy were collected. Producers then submitted pooled fecal samples at 2 pre-determined periods, 1 from late May through mid-June and a second during July and August. These sampling intervals were chosen to reflect HC fecal egg counts 1) prior to reinfection on pasture and 2) during significant reinfection with infective-stage HC larvae derived from spring reinfection of pasture. Each submission contained pooled feces from a group of breeding age adults and another from a group of yearlings, and in some cases, grazing juveniles. Internal parasites in these samples were quantitated and speciated through McMaster's fecal egg counts, microscopic evaluation of cultured third-stage larvae, and by the detection of fluorescently-labeled peanut agglutinin binding to Trichostrongylid ova. Relationships among survey and internal parasite data were statistically evaluated through analysis of variance and linear regression.

Results

Seventy-three farms participated in the study, with 64% raising sheep, 21% raising goats, and the remainder raising both. Numbers of breeding age livestock/farm averaged 26.9 +/- 3.9 S.E.M. Participating farms were evenly distributed

throughout Vermont (12 farms) and throughout central and southern New Hampshire (18 farms). The distribution of farms from Maine (43 farms), however, was very clustered along the coast in the southern third of the state. *Haemonchus contortus* was found on 88% of participating farms. Average HC egg counts increased significantly ($P<0.05$) from the first to the second sampling period. Management strategies that significantly decreased HC burden in grazing animals included: grazing densities lower than 4 animals/acre, selective deworming based on FAMCAHA testing, and rotational grazing. Rotational grazing seemed to have an inhibitory effect on fecal egg counts even when producers stocked their pastures at densities greater than 4 animals/acre. Having a working relationship with a veterinarian did not significantly decrease egg counts versus farms with no veterinarian. Management strategies that resulted in significantly higher HC fecal egg counts included 1) the non-use of chemical anthelmintics and 2) deworming of all animals using the same anthelmintic product for the entire grazing season.

Significance

This study suggests that specific management strategies do effectively control *H. contortus* in northern New England. A better understanding of the relationship between implemented management strategies and HC egg counts may improve the ability of small ruminant producers in northern regions to control parasite epizootics and improve animal health, farm productivity and profit.