

Significance

Genotype ST398 as well as resistant *S. aureus* genotypes were found in caprine but not bovine milks.

The presence of these resistant strains requires further study. Differences in management practices between bovine and caprine dairies should be investigated.

The effects of nutritional supplement on milk quality and milk components over an entire lactation in dairy goats

A.D. Rowson, DVM; T.J. Boyle, BS; D.J. McLean, PhD; S.A. Armstrong, MS; S.B. Puntteney, PhD
Prince Agri Products, Inc., Quincy, IL 62341

Introduction

In the United States the legal somatic cell count (SCC) limit for dairy goat milk is 1,500,000 mL/L. However, it is common for the SCC to be much higher than this limit, especially near the end of lactation. Milk SCC from goats follows a linear increase throughout lactation, peaking just before dry-off. Mastitis, estrus, age, caprine arthritis encephalitis virus (CAE), and stressful events can all increase SCC in goat's milk. Production of milk with a SCC higher than the legal limit results in farms being unable to ship their milk and lost income. Additionally, many cheese processors pay premiums for milk containing higher amounts of fat and protein. The objective of this study was to evaluate the nutritional supplementation of OmniGen-AF® to dry and lactating dairy goats on milk quality and milk components over an entire lactation.

Materials and Methods

Thirty-five, 2-year-old does housed on a commercial goat dairy located in south-central Wisconsin were randomly assigned to 1 of 2 groups: 1) Control-fed ($n = 18$), and 2) OmniGen-AF-fed ($n = 17$). Animals in Group 1 were fed a complete-feed pellet twice a day and *ad libitum* alfalfa hay. Animals in Group 2 were fed the same diet but with 6 g/h/d of OmniGen-AF added to the pellet. The project started at dry-off (approximately 40 to 60 days prior to kidding) and continued for the full lactation. All study animals were housed on separate sides of a pole barn with roll-up curtain sides on a bedded pack and had continual access to pasture. Does were milked twice a day in a single, 12-stall parlor with rapid release. Breeds of does included in the study were Alpine, Saanan, Nubian, and La Mancha, and all breeds

were equally represented in each group. Monthly Dairy Herd Improvement Association (DHIA) milk testing was performed on all animals for 9 months. Somatic cell counts, percent milk fat, percent milk protein, and milk production data were collected at each test. Data were analyzed using PROC GLM (SAS, Statistical Analysis Systems) with days-in-milk (DIM) as a covariate, and significance evaluated at the $P < 0.05$ probability level.

Results

The mean SCC for OmniGen-AF-supplemented does was 585,000 mL/L, which was significantly lower ($P < 0.05$) than the mean SCC for control-fed does (894,600 mL/L). These differences were more pronounced as does approached the end of lactation where the mean SCC was 1,669,000 mL/L lower in OmniGen-AF-fed does compared to controls (2,094,000 mL/L vs 3,763,000 mL/L, respectively). Milk percent fat ($P < 0.01$) and percent protein ($P < 0.05$) were different between the OmniGen-AF-fed and control-fed does. Specifically, mean milk percent fat from control-fed does was 3.21% compared to 3.45% from OmniGen-AF-fed does. Mean milk percent protein was 2.93% and 3.08% from control and OmniGen-AF-fed does, respectively. There was no difference in milk production between groups.

Significance

There are multiple endpoints available to measure milk quality, which include SCC, milk percent fat and percent protein. Data from this trial demonstrate that goats fed OmniGen-AF experienced benefits in milk components and attenuation of the dramatic increase in SCC that normally occurs late in lactation, both of which are indicative of improved mammary gland health.