Title:

Microbial surveillance of retail raw milk in three New England states.

Introduction:

With increasing consumer demand for raw milk in the U.S., debate is growing over food safety guidelines and public policies regarding its consumption. This study was conducted to assess the microbial quality of retail raw milk samples obtained in three New England states (Maine, New Hampshire and Connecticut).

Purpose:

ch New England state permitting retail raw milk sales in grocery stores has different microbial requirements for producers and varying testing protocols for raw milk safety surveillance. Microbial surveillance was performed to obtain baseline data on quality indicators and pathogen incidence in retail raw milk, and to determine whether values differed by state.

Methods:

Raw milk samples (N=73) purchased at retail locations in ME, NH and CT on a bimonthly basis were collected and held below 40F during transport to the lab. Sample processing for quality indicators included determination of aerobic plate count and coliform count. Pathogen incidence was assessed using qualitative and quantitative screening methods for Campylobacter jejuni, E. coli O157:H7, Salmonella and Listeria monocytogenes. Samples were processed as per the protocol for each method (3M Petrifilm, FDA, BAX and Chromagar).

Results:

APC log mean for all milk samples was 4.17 (+/- 1.54) with a range of 1.60 to 7.78. CC log mean for all samples was -.12 (+/- 1.79) with a range of -2.00 to 5.60. Samples with CC count of 0 were counted as .01 to permit analysis on the log scale. 94.4% of CC were below 10 CFU/ml in CT samples, versus 65.4% and 63.6% in ME and NH, respectively. This difference was statistically significant as determined by Chi square analysis. No pathogens were detected.

Significance:

CT had a greater proportion of samples below 10 CFU/ml for CC than ME or NH. This may be due to more stringent CT production guidelines which require pathogen testing for retail raw milk producers.