TITLE: MICROBIOLOGICAL QUALITY OF RICOTTA CHEESE MARKETED IN BOTUCATU, SÃO PAULO, BRAZIL

AUTHORS: DE OLIVEIRA, C. D.[1], DOS SANTOS, M. C.[1], DE OLIVEIRA, J. P.[1], CERQUEIRA CÉZAR, C. K.[1], MUDADU, A.[2], TEDDE, T.[2], GIAGNONI, L.[3], SPANU, C.[3], PANTOJA, J. C. F.[1], PEREIRA, J. G.[1]

INSTITUTION:
1. FACULDADE DE MEDICINA VETERINÁRIA E ZOOTECNIA, UNESP, BOTUCATU, SP (RUA PROF. DR. WALTER MAURICIO CORREA, S/N – RUBIÃO JR., BOTUCATU, BRASIL); 2. ISTITUTO ZOOPROFILATTICO SPERIMENTALE DELLA SARDEGNA "G.PEGREFFI", SASSARI, ITALY (VIA VIENNA, 2 07100 SASSARI, ITALY); 3. DIPARTIMENTO DI MEDICINA VETERINARIA, UNIVERSITÀ DEGLI STUDI DI SASSARI, SASSARI, ITALY (VIA VIENNA, 2 07100 SASSARI, ITALY).

ABSTRACT:
The production of Ricotta cheese includes several technological steps that require high hygienic-sanitary care to obtain a microbiologically safe final product. Contaminated raw milk, deficiencies in good hygienic practices during production, and post-process recontamination can result in a final product with compromised microbiological safety. The Brazilian legislation requires that counts of *Escherichia coli* and coagulase-positive staphylococci must not exceed 3.0 log CFU/g (Normative Instruction 60 ANVISA). This study aimed to verify compliance with the legal standards established by Brazilian legislation. Thus, the hygienic quality of Ricotta cheese sold in the city of Botucatu, São Paulo was evaluated by counting *E. coli*, total coliforms, and coagulase-positive *Staphylococcus* (CPS). Twenty-seven samples of eight different Ricotta brands were collected from nine supermarkets in Botucatu, SP, and analyzed at the end of the shelf-life. The samples were submitted to total coliforms and *E. coli* counts by the Petrifilm method (AOAC Official Method 991.14), and coagulase-positive staphylococci by the ISO 6888-1 method. All samples were below the limit of enumeration for CPS count (< 1 log CFU/g). The mean total coliform count was 6.17±1,42 log CFU/g, ranging from <1.0 log to 7.98 log CFU/g. For *E. coli*, out of the 27 samples analyzed, 11 (40.74%) were above the legal limit. For the non-compliant samples, the mean *E. coli* count was 5.02±1.3 log CFU/g, and ranged from 3.60 to 7.19 log CFU/g. Although CPS were not detected, the high coliform and *E. coli* counts, and the high proportion of samples outside the legal sanitary standard for *E. coli* demonstrate failures of hygienic practices during the production process and a potential threat to human health. The detection of *E. coli* in food is important since this species has the gastrointestinal tract of humans and animals as its primary habitat. High counts in ready-to-eat foods may be the result of fecal contamination and failures in technological and hygienic processes throughout the food production chain. Thus, evaluating the presence and quantity of these microorganisms in food is useful for determining the safety of consumers, as well as verifying the legal requirements for marketing.

Keywords: Food safety; Microbiological criteria; Ready-to-eat Food.

Development Agency: CAPES PRINT Project, 88881310254/2018-0