

EVALUATION OF PHYSICALCHEMICAL AND MICROBIOLOGICAL CHARACTERISTICS OF PASTEURIZED MILK TYPES COMMERCIALIZED IN LONDRINA CITY, PARANÁ, BRAZIL

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In order to evaluate the conditions of pasteurized milk distributed in Londrina city, Paraná state, Brazil, it was analysed the physicochemical, microbiological characteristics and presence of chemicals substances in 130 samples collected at the markets. The analysis showed that all commercial marks were out of the RIISPOA's standards with watery milk alterations, excessive fat removing and presence of a high number of microorganisms faecal coliforms and Staphylococcus sp coagulase positive indicating unsatisfactory quality of the raw milk in the production or possible post contamination pasteurization resulting in loss of quality and risks to the human health.

INTRODUCTION

In Brazil according to the Sanitary Inspection for Products of Animal Origin Regulation (RIISPOA, 1980) two kinds of milk pasteurization are allowed: fast and slow. The occurrence of failure in the treatment like post pasteurization contamination of the final products can result in loss of quality and health risks. Pasteurized milks are commercialized as A,B,C, light and integral types with different specifications. The consumption of milk in Brazil is high and reports indicating that the quality of the product consumed in many states are out of the established patterns what justify this work to evaluate the quality of the product commercialized in Londrina city.

MATERIALS AND METHODS

Thirteen commercial marks of A,B,C, Integral and light pasteurized milk types distributed at the markets were analysed to physicochemical (acidity Domic, cryoscopic, fatness, density, phosphatase, peroxidase, total dry and nonfat extracts, atipic sedimentation), and microbiological characteristics (total count, most probable number of total and faecal coliforms, *Staphylococcus sp.* coagulase-positive) and presence for chemical substances totalizing 130 samples analysed by the Milk Inspection Laboratory at Londrina State University according to LANARA's techniques, 1981.

RESULTS

The results observed in this research are showed in tables I and II.

Table I
Frequency of physicochemical and enzymatic alterations in 130 samples of pasteurized milk types distributed in Londrina city, Paraná, Brazil

Types of milk	Nº samples	Acidity (%)	Fat (%)	Densid (%)	Est (%)	Esd (%)	Crioscopy (%)	Perox. (%)	Phosphat. (%)	Sed. (%)
A	30	13,3	36,7	0,0	26,7	23,3	3,3	16,7	0,0	46,7
B	40	17,5	57,5	17,5	57,5	52,5	40,0	15,0	0,0	25,0
C	40	0,0	0,5	20,0	15,0	35,0	2,5	5,0	0,0	22,5
Light	10	0,0	10,0	0,0	10,0	50,0	20,0	10,0	0,0	10,0
Integral	10	0,0	0,0	0,0	0,0	10,0	20,0	0,0	0,0	40,0

Table II
Frequency of microbiological alterations and presence of chemical substances in 130 samples of pasteurized milk types distributed in Londrina city, Paraná, Brazil.

Types of milk	Nº samples	Global count(%)	Total coliform(%)	Faecal coliform(%)	Atypical estafil (%)	Typical estafil()	Recons (%)	Conserv (%)	Neutr. (%)
A	30	53,3	4,3	6,7	0,0	0,0	66,7	0,0	0,0
B	40	40,0	70,0	42,5	17,5	5,0	37,5	0,0	0,0
C	40	20,0	30,0	20,0	0,0	5,0	37,5	0,0	0,0
Light	10	50,0	70,0	40,0	0,0	0,0	40,0	0,0	0,0
Integral	10	10,0	40,0	0,0	0,0	0,0	40,0	0,0	0,0

CONCLUSION

Watery milk alterations, excessive fat removing, total bacterial counts and total coliforms exceeding the legal national standards and the presence of faecal coliforms and *Staphylococcus sp.* observed in many samples indicate the necessity of improving the production and processing as well as more rigor in the quality control.

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