TITLE: BIOFILME PRODUCTION BY CONTAMINANT BACTERIA OF RAW BOVINE MILK

AUTHORS: MAIOCHI, R.R.; FRANCISCATO, L.M.S.S.; SEKINE, K.H.; MACEDO, M.S; SILVA, M.R.; OLIVEIRA, J.L.P.; CORRÊA, A.F.; WOSIACKI, S.R.; MORITZ, C.M.F.

INSTITUTION: STATE UNIVERSITY OF MARINGÁ (UEM) – CAMPUS OF UMUARAMA, UMUARAMA, PR (AVENIDA ÂNGELO MOREIRA DA FONSECA, 1800, CEP 87506-370, UMUARAMA – PR, BRAZIL).

INSTITUTO PARANAENSE DE ASSISTÊNCIA TÉCNICA E EXTENSÃO RURAL (EMATER) – REGIONAL DE UMUARAMA, PR (AV. AVENIDA SÃO PAULO, 5287, CEP 87501-420, UMUARAMA – PR, BRAZIL).

ABSTRACT:
Biofilm is considered a complex ecosystem composed of single or multiple species microbial populations associated with its extracellular products, forming a matrix of organic polymers adhered to a biotic or abiotic surface. The association of microorganisms in biofilms constitutes a form of protection to their development, promoting symbiotic relationships and allowing survival in hostile environments. The aim of this work was to verify the profile of dairy farms about the biofilm production by contaminants bacteria of bovine raw milk. Samples of milk were collected from all lactating animals from four rural properties in the region of Arenito Caiuá, northwest of Paraná, from February to May 2019. The animals varied in each month due to changes in the production stage (lactating and dry season). From the milk samples, an aliquot was streaked in Petri dishes containing Congo red staining Agar, incubated at 37 ° C for 48 hours. For each month, the percentage of samples with positive biofilm formation was considered in relation to the total number of lactating animals of the individual properties. The A property presented 85% (n) = 20, 70% (n = 20), 100% (n = 10) and 58.3% (n = 12) of samples with biofilm production of February to May, respectively; property B 65.2% (n = 23), 37% (n = 27), 57.7% (n = 26) and 63.6% (n = 22); the C property 66.7% (n = 9), 80% (n = 5), 85.7% (n = 7) and 83.3% (n = 6); and property D 62.8% (n = 43), 32.5% (n = 40), 41% (n = 39) and 37.2% (n = 43). Thus, were found phenotipically biofilm-producing microorganisms in all the properties and in all the period of study in the collected milk samples, implying a risk of contamination by these microorganisms in all milk and milk derivates production chain.

Keywords: biofilm, raw milk, bovine, milk productive chain

Development Agency: Secretaria de Ciência, Tecnologia e Ensino Superior – Unidade Gestora do Fundo Paraná. Programa Universidade Sem Fronteiras