MICROAL 2014

Blucher Food Science Proceedings
Novembro de 2014, Número 1, Volume 1
www.proceedings.blucher.com.br/evento/microal

Release of Salmonella Sp. Antimicrobial Resistant From Bivalve Mollusks in Estuary Areas, Bahia, Brazil

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Resumo

Artisanal fishing in Bahia coast, Brazil is an activity which has great economic potential due to the large extent of mangroves and estuarine areas in the region. Increased anthropogenic activities near the estuarine areas have compromised the safety of food extracted from this local. Among the Foodborne Diseases, salmonellosis, a disease caused by Salmonella bacteria, is characterized as an important public health problem in many countries, due to the involvement of the pathogen in several foodborne outbreaks. The increase of antimicrobial resistance strains has been a concern among professionals in the area of food and health, due to overuse of antimicrobials by the population as well as its use in intensive farming of animals. The objective of the study was to delineate the antimicrobial resistance profile in Salmonella strains isolated from bivalve molluscs (oysters and mussels) and estuarine areas in two regions of Bahia, Brazil. A total of 27 strains, 12 isolated from bivalve mollusks and 15 from estuarine water were tested. For antimicrobial susceptibility eight antimicrobial agents belonging to phenicol, beta-lactams, tetracyclines, quinolones and fluoroquinolones classes were used as well as the Minimum Inhibitory Concentration (MIC) and the extended-spectrum beta-lactamases (ESBL) production. Isolates showed a profile of 100% of susceptibility for phenicol and fluoroquinolones, 88.3% to tetracycline and beta-lactams and 77.7% for quinolones. Bacterial resistance was characterized as potentially chromosomal origin while the rate of multidrug resistance (MDR) among

Referência:
Norma Suely Evangelista-Barreto, Carla da Silva Silveira, Leopoldo Melo Barreto. Release of Salmonella Sp. Antimicrobial Resistant From Bivalve Mollusks in Estuary Areas, Bahia, Brazil. In: **Anais do 12º Congresso Latinoamericano de Microbiologia e Higiene de Alimentos - MICROAL 2014 [= Blucher Food Science Proceedings, num.1, vol.1]**. São Paulo: Editora Blucher, 2014.
DOI 10.5151/foodsci-microal-294

mussels isolates in nature was 0.25. The MIC was 100 µg/mL, 500 µg/mL and 350 µg/mL to nalidixic acid, ampicillin and tetracycline, respectively. None of the isolates showed ESBL production. The presence of Salmonella sp. multidrug-resistant and high MIC has been conveyed in extraction sites bivalve molluscs in Bahia state, Brazil.

Palavras-Chave: Antimicrobial, Multidrug resistance, Food safety, Betalactamases

Agência de Fomento: