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Detection and Efficiency of New Develop Antibiotic Residues Screening Test for Milk

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Abstract

Antibiotic monitoring is an essential quality control measure for the safe milk production as antibiotic residues constitute a risk to human health, since they can cause allergic reactions in hypersensitive individuals or they may lead to the appearance of drug-resistant bacteria. Hence the analysis of these residues plays a key role in ensuring food safety. This study was conducted to evaluate antibiotic residues in three hundred samples of raw milk (200 cows, 50 camels and 50 goats) supplied to consumers in Khartoum State during winter and summer seasons using three methods: Trisensor antibiotic test, Modified One Plate Test and the New Detection Method. The new developed test was based on activation of *Lactobacillus casi* spp. (DSM 38124) using MRS broth dehydrated medium. For the preparation of the test mixture, powder milk, lactose, bromocerol green indicator and 0.1 ml of 1.5×10^7 *Lactobacillus casei* MRS culture were added to each Universal bottles containing specific amount of antibiotic standard. The mixtures were frozen in a deep freezer at -20°C for 24 hours. Then the bottles were lyophilized (60°C) and kept at 4-5°C until used. Tri sensor, Modified one plate test and the new detection method) revealed the same results that 80 (40%) of cow milk samples were positive to antibiotics residues, while all camel and goat milk samples were negative. This study concluded that the antibiotic New Detection Method should be looked upon as an alternative screening method by encouraging its improvement, use and application as a field test, this especially because of its low cost.

Keywords: Antibiotics residues, cow milk, screening tests

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