



β –Lactams and Tetracyclines Antibiotic Residue Detection in Bulk Tank Milk in Iran

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Dear Editor-in-Chief

Drugs used in animal farms can affect the public health because of their trace in edible animal tissues. Antibiotics are an integral part of treatment in many infectious diseases. They are widely used therapeutically, as growth promoters and to prevent infection in animals (1). After systemic or intramammary administration of antibiotics in animal, antibiotic residues (ARs) in milk can be detected (2). In fact, consumers can inadvertently expose to these chemical compounds. ARs are important for three major reasons first, they can cause antibiotic resistance in microorganism (1). Second, antibiotics have side effects therefore; feeding of edible products containing ARs can cause similar complications. The possible complications can be from slight and transient changes in the body's natural flora to severe allergic reaction. Some antibiotics can cause allergies, even when used at very low doses (2). Third, the bactericidal and bacteriostatic activity of these compound, are interfering with the production process of some dairy products (3). Thus Maximum Residue Limit (MRL) has been established in many countries. These MRLs are set at levels which are not likely to be exceeded if the veterinary drugs are used in accordance with approved label instructions (4). Iran has not established antibiotic MRLs level in milk. Previous studies have shown the high AR contamination in the

milk sample in different cities of Iran. In the present study the contamination level of AR in raw cow milk sample in different part of Iran were assessed.

A total of 79 bulk tank milk sample randomly collected from four cities (Kazeron, Tabriz, Shiraz, and Sari) of Iran during winter 2012. Measurable antibiotic residues of β -lactams were detected in 32.9 % of milk sample. Tetracycline residue was not detected in any sample within the test level ability. The results have shown occurrence of high level of AR in cow milk samples and was in agreement with those previously reported in literature from other authors (5-7). These levels of AR in milk pose a great risk to public health.

Existence of high level of AR in milk cans elucidated from mismanagement and negligence in farm. Improper use of drug (dose, injection site, frequent and withholding times) can impose economic losses to the farmer due to more labor cost, drug cost and depreciation of milk. Considering that there is no legal penalty for farmers who deliver milk with exceeded levels of MRLs (MRLs not established in Iran), some of the dairy farmers are selling ARs contaminated milk. To ensure the quality of milk in term of chemical contamination, comprehensive program should be developed through collaboration with farmer and veterinarian. Establishing penalty for violating MRLs stan-

dard is conventional way to reduce the ARs residue in many countries. Authority in Iran should be set and announce the MRLs Standards and Farmer should be educated and aware of drug residue.

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