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Bacterial Species Associated with Milk Contamination in South Khartoum due to Bovine Mastitis and Antibiotic Investigation Against the Isolated Bacteria

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Abstract

The severe clinical mastitis , abnormalities of milk are easily observed and milk is discarded by the producer. Such milk normally would not enter the food chain. But when milk of cows with sub-clinical mastitis , i.e . with no visible changes, is accidentally mixed into bulk milk, it enters food chain and can be dangerous to humans. Although pasteurisation is likely to destroy all human pathogens, there is concern when raw milk is consumed or when pasteurisation is incomplete or faulty.

According to Gilmour and Harvey (1990) milk of infected animals is the main source of enterotoxigenic *S. aureus* of animal origin. For example certain

S. aureus strains produce heat-resistant enterotoxins, which cause nausea, vomiting and abdominal cramps when ingested by humans and are responsible for staphylococcal food poisoning outbreaks (Kluytmans et al. 1997).

The most important changes in milk are discolouration, presence of clots and large numbers of leukocyte, swelling, heat, pain and induration in the mammary gland in many cases.

Sixty milk samples were collected from mastitic cows from south of Khartoum state and identified using Gram's stain and biochemical tests. Biochemical reactions were done according to standard keys (Barrow and feltham, 2003)

The percentages for different types of isolated bacteria were found to be: *Staphylococcus spp.* (45 %), Bacillus spp. (22.5 %), Enterobacter spp. (14.5 %), Acinobacter spp (5 %) and *micrococcus spp* (5 %) and *Pseudomonas spp.* (8 %). *Staphylococcus aureus* was the most prevalent among Staphylococci isolates (45 %), followed by Staphylococcus intermedius (22 %), Staphylococcus warneri (11 %), Staphylococcus hyicus(11 %), Staphylococcus chromogenes (11 %) and Staphylococcus lentus (11 %) Also Bacillus spp found were Bacillus alvei (40 %) Bacillus thermophilus (20 %), Bacillus coagulans (20 %) and Bacillus firmus (20 %). The isolated bacteria were highly sensitive to Ciprofloxacin, Ifovluxtsen, Linezolid, Gentamicin and were resistant against Cloxacillin, Cephalexin, followed by Tetracycline, Lincomycin. Roxithromycin.

Keywords: Antibiotic, cattle, mastitis, *S. aureus*

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