

## Microbiological screening test validation for detection of tylosin excretion in milk of cows with low and high somatic cell counts

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### RESUMEN

Antibiotic residues in milk above tolerance levels interfere with dairy product processing and pose potential health risks to consumers. Residue avoidance programmes include, among other components, the observance of withdrawal times indicated in label instructions. Persistence of antibiotics in milk following treatment is influenced by drug, dosage, route of administration, body weight and mammary gland health status. Compositional changes that take place during intramammary infection (IMI) can affect antibiotic excretion in milk, thus modifying milk withdrawal time. The objectives of this study were to validate sensitivity and specificity of a qualitative microbiological method (Charm<sup>®</sup> AIM-96) to detect tylosin in bovine composite milk and to determine the influence of subclinical IMI in tylosin excretion following intramuscular administration. For test validation, two groups of approximately 120 cows were used; one received a single intramuscular injection of tylosin tartrate at a dose of 20 mg/kg, while the other group remained as untreated control. Test sensitivity and specificity were 100% and 94.1% respectively. To determine the influence of subclinical IMI in tylosin excretion, two groups of seven cows, one with somatic cell counts (SCC)  $\leq 250\ 000$  cells/ml and the other with SCC  $\geq 900\ 000$ , were administered a single intramuscular injection of tylosin tartrate at a dose of 20 mg/kg. Milk samples were obtained every 12 h for 10 days following treatment. Milk tylosin excretion averaged between 5 and 9 days for cows with low and high SCC respectively ( $P < 0.0001$ ). Compositional changes in cows with high SCC most likely affect the pharmacokinetic characteristics of tylosin, extending the presence of the antibiotic in milk, thus influencing milk withdrawal times.

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