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An alternative single-plate method for antibiotic residue screening in meat

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ABSTRACT

The aim of our study is to develop an alternative, effective, and economical multi-residue microbiological method for the screening of antibiotic residues in meat. Sixty-one samples were analysed using the Premi®Test method and the four-plate/STAR method. The Premi®Test revealed 29.5% positives and 70.5% negatives. The four-plate/STAR method gave 29.5% positives, 65.5% negatives, and 5% doubtful samples. The one-plate alternative method was developed on samples with soy agar and Mueller–Hinton using *Micrococcus luteus*, *Bacillus stearothermophilus*, and *Staphylococcus aureus*. Under optimal conditions (Mueller–Hinton inoculated with *M. luteus*), the alternative method is competitive with the Premi®Test. It is promising for the screening of antibiotic residues and does not detect false positives. It has a high sensitivity (Se = 0.85) and is also specific (Sp = 1). The positive (01) and negative (0.93) predictive values are also satisfactory.

Keywords: Four-plate/STAR method; Screening methods; Premi®Test; One-plate method; *M. luteus*

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