

**The Identification of Extended Spectrum β -Lactamase-producing Bacteria
Escherichia coli on Beef Sold in Wet Markets Using VITEK-2 Method**

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ABSTRACT

This study aims to phenotypically identify and confirm the presence of ESBL-producing *Escherichia coli* in the swab surface samples of beef using VITEK-2 method. Swab samples were taken from five wet markets: Pucang market, Wonokromo market, Keputran market, Pabean market, and Manukan market; 10 swab samples of beef were collected from each market. Then, isolation and identification in terms of bacteria using selective media and biochemical test were conducted. Resistance testing using disc diffusion method was performed on 6 types of antibiotics: Ampicillin, Cefazolin, Ceftriaxone, Cefotaxime, Ceftazidime, and Tetracyclin. Positive isolates resistant to ≥ 2 types of β -Lactam antibiotics using disc diffusion method then were tested using VITEK-2 method. Positive samples containing *Escherichia coli* are found in 29 samples out of 50 swab samples. Of the 29 *Escherichia coli* isolates, 17 isolates are found resistant to the disc diffusion method. After testing those 17 isolates using VITEK-2, 5% (1/17) of ESBL-producing *Escherichia coli* are obtained. Besides, this study also reveals that 35% (6/17) of the *Escherichia coli* are positive multidrug resistance. Those *E.coli* are found to be resistant towards Amoxycillin of 35% (6/17), Gentamycin of 5% (1/17), Ciprofloxacin of 35% (6/17), Trimethoprim-Sulfamethoxazole of 35% (6/17), and Ampicillin-sulbactam of 5% (1/17).

Key words: ESBL, *Escherichia coli*, Beef, Vitek-2 System, Veterinary Public Health