MOST PROBABLE NUMBER-POLYMERASE CHAIN REACTION-BASED QUANTIFICATION OF ENTEROTOXIGENIC ESCHERICHIA COLI FROM RAW MEATS IN SOUTHERN THAILAND

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Abstract. The detection of enterotoxigenic Escherichia coli (ETEC) in food, especially raw meat, has rarely been documented in Thailand, although the presence of this bacterial pathogen is considered of important public health concern. The quantity of ETEC in 150 meat samples collected from fresh food markets in southern Thailand were determined using a most probable number (MPN)-PCR-based quantification approach. ETEC contamination of raw chicken, pork and beef samples was 42%, 25% and 12%, respectively (a significant difference between chicken and beef, $p<0.05$). The maximum MPN/g value for enterotoxin gene est-positive ETEC from pork and elt-positive ETEC from chicken were > 1,100 MPN/g, but the range of MPN/g values was greater for ETEC from chicken than from pork or beef. ETEC from raw chicken meat contained significantly more elt- than est-positives ($p<0.05$). Thus, a significant proportion of raw meat, in particular chicken, sold in fresh food markets in southern Thailand harbors ETEC and poses a potential threat to consumer health.

Keywords: enterotoxigenic Escherichia coli, meat, most probable number PCR, Thailand

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