



BACTERIAL DISEASES

BBD-056

LABORATORY TRIAL FOR TO EVALUATE THE VECTOR COMPETENCE OF ORIENTAL COCKROACH (*BLATTA ORIENTALIS*) FOR ETEC, *SALMONELLA TYPHIMURIUM* AND *BRACHYSPIRA HYODYSENTERIAE*

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The Oriental Cockroaches (*Blatta orientalis*) are important pest in swine production in recent years, have long been investigated to assess the carry capacity for different swine pathogenic bacteria. They are known to carry about 57 species of pathogenic bacteria. Though various studies indicated that cockroaches play an important role as mechanical as well as biological vectors for foodborne bacterial pathogens, but cockroaches individual contribution lack. The objective of this study was to evaluate the vector competence of Oriental cockroach for three important porcine pathogens isolated from Italian swine farms: ETEC (F18 STa, STb), *Salmonella typhimurium*, and *Brachyspira hyodysenteriae*.

About one hundred adult cockroaches were reared under controlled conditions (RH 60%, photoperiod 14:10 h (L:D) and temperature 28°C). For each pathogen tested, 16 adult cockroaches were randomly picked, divided into 2 groups of 8 and transferred individually in sterile plastic containers. The first group was infected by contaminated food (potatoes) supplied for 5 days, which was then removed and replaced to sterile one. Individual faeces were collected daily and the presence of each pathogen was verified (ETEC only numbered). The second group was maintained as negative control. The oral infection was carried out with bacterial quantity of 10⁸-10⁹ CFU/g. Cockroach faeces started to be positive for *S. typhimurium* (8/8) the day after contamination and for ETEC (6/8) two days after contamination. No positivity was observed for *B. hyodysenteriae*. Faeces remained positive until contaminated food was removed: 4 days after removal no more positivity was observed for both *S. typhimurium* and ETEC (0/8). Faeces of the control group remained negative for each pathogen. In this study the vector competence of cockroaches for swine bacterial pathogens was confirmed for ETEC and *S. typhimurium*, but only as mechanical vector (not infected). The possible role in the diffusion of *B. hyodysenteriae* was not evidenced.