



O1:K32 (47% ; 14/300), O4:K8 (3.3% ; 10/300) and O5:K15 (3% ; 9/300). O5:K17 and O2:K28 were found in almost all seven types of raw seafood specimens except cockle and fish, respectively.

The study of biochemical reactions showed that 74% of V. parahaemolyticus isolates were Heiberg's type VII, and 26% were type V. Only one V. parahaemolyticus isolate (0.3% ; 1/300) was urease positive. All V. parahaemolyticus isolates were Kanagawa negative strains when tested on Wagatsuma's medium and by the modified Elek's test. It was found that the susceptibility test of V. parahaemolyticus to 9 antimicrobial agents showed single, double, triple, quadruple, and quintuple resistant patterns resulted in having 19 different antibiotic resistant patterns. The highest frequency was found in double resistant pattern to ampicillin and colistin (98.2% ; 216/220).

Plasmid DNA profiles of V. parahaemolyticus from environmental isolates were studied. It was found that 49.3% (148/300) of V. parahaemolyticus isolates harbored plasmid(s) with the molecular weight of 1.8-5.2 mDa. A single band was seen in 30%, two bands in 50.7% (75/148), three bands in 17.6% (26/148), and four bands in 2% (3/148). The present study showed that V. parahaemolyticus isolates from raw seafoods had distinct biological and genetic characteristics.

There will be needs for further studies on the presence of plasmids, Kanagawa phenomenon, serotype, antibiotic resistance and the production of urease as the possible factors that play important roles in pathogenesis of V. parahaemolyticus gastroenteritis.