ABSTRACT

YUSMA YENNIE. Isolation and Identification of Pathogenic *Vibrio parahaemolyticus* in Shrimp Culture Under the direction of RATIH DEWANTI-HARIYADI and ACHMAD POERNOMO.

*Vibrio parahaemolyticus* (*Vp*) is a halophilic bacterium found in brackish water and is the leading cause of gastroenteritis due to seafood consumption. In Indonesia presence of this pathogen in seafood has caused several export rejection. This research aimed to identify presence of pathogenic *Vibrio parahaemolyticus* from shrimp cultured in traditional and intensive ponds. Bacterial isolation was carried out using FDA BAM (2004), phenotypic characterization was done using API 20E biochemical test kit and genetic characterization was conducted with Polymerase Chain Reaction (PCR) using a pair of specific primer for each virulent factor gene (*tdh* and *trh* genes). Biochemical identification with API 20E biochemical test showed that 16/32 (50%) and 6/32 (18.8%) shrimp samples from traditional and intensive ponds contained *Vibrio parahaemolyticus*, respectively. Eighty one percent (13/16) of *Vibrio parahaemolyticus* isolated from traditional pond and 50% (3/6) of those obtained from intensive pond were pathogenic due to their possession of *tdh* gene. When gen encoding *trh* was used as the basis for classification, 15/16 (93.8%) and 4/6 (66.7%) of *Vibrio parahaemolyticus* obtained from traditional and intensive ponds, respectively, were pathogenic. Out of the 22 *Vibrio parahaemolyticus* isolates, 16 (72.7%) were pathogenic based on the possession of gene encoding for *tdh* and 19 (86.4%) can be classified as pathogen based on the *trh* gene. Overall, pathogenic *Vibrio parahaemolyticus* was found at a frequency of 13-15/32 (43%) of the shrimp samples from traditional pond while 3-4/32 (11%) was found in shrimps from intensive pond, respectively.

Keywords: *Vibrio parahaemolyticus*, shrimp culture, *tdh* gene, *trh* gene