

# **The Presence, Species Composition, Antibiotic Resistance, and Virulence Potential of *Vibrio* Bacteria from Commercially Purchased Florida Brown Shrimp, *Farfantepenaeus aztecus***

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*Vibrio* is a large and diverse genus of marine bacteria, some of which are known to cause illness in humans. In particular, *Vibrio vulnificus* and *Vibrio parahaemolyticus*, common to brackish Florida environments, have gained considerable recent media attention as potential sources of human illness. The purpose of this study was to examine the *Vibrio* bacterial communities isolated from the rostrums of brown bait shrimp (*Farfantepenaeus aztecus*) purchased from two east Florida bait shops which employ substantially different live bait holding methods. The study addressed three specific goals: 1) determining the presence/absence and species composition of the *Vibrio* community on bait shrimp and in associated water samples; 2) assessing the virulence potential of *Vibrio* species isolated from these sources; 3) determining the susceptibility of the *Vibrio* isolates to each of four antibiotics. Laboratory techniques included microbial culture, PCR, gel electrophoresis, and antimicrobial sensitivity testing. *Vibrio vulnificus*, *V. parahaemolyticus*, and one or more non-target *Vibrio* species were isolated from bait shrimp and water samples. Shrimp obtained from a bait store employing a flow-through holding system exchanging low salinity (22ppt) water with the Indian River Lagoon harbored all three *Vibrio* types, while shrimp obtained from a recirculating holding system maintained at higher salinity (40ppt) at another shop typically harbored only non-target *Vibrio* and, rarely, *V. parahaemolyticus*. All *V. vulnificus* isolates obtained from flow-through system shrimp were found to be of clinical type. Antimicrobial sensitivity test results indicated all *Vibrio* isolates examined were susceptible to most or all of the antibiotics tested.