Incidence and virulence characteristics of Aeromonas spp. in fish.

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Abstract:

AIM: This study was conducted to evaluate the presence of Aeromonas spp. in raw and ready-to-eat (RTE) fish commonly consumed in Assiut city, Egypt, and to determine virulence factors due to they play a key role in their pathogenicity.

MATERIALS AND METHODS: A total of 125 samples of raw and RTE fish samples were taken from different fish markets and fish restaurants in Assiut Governorate and screened for the presence of Aeromonas spp. by enrichment on tryptic soy broth then incubated at 30°C for 24 h. Plating unto the sterile Petri dishes containing Aeromonas agar base to which Aeromonas selective supplement was added. The plates were incubated at 37°C for 24 h. Presumptive Aeromonas colonies were biochemically confirmed and analyzed for pathogenicity by hemolysin production, protease, and lipase detection.

RESULTS: The results indicated that raw fish were contaminated with Aeromonas spp. (40% in wild and 36% in cultured Nile tilapia). Regarding RTE, Aeromonas spp. could be isolated with the percentage of 16%, 28% and 20% in fried Bolti, grilled Bolti and fried Bayad, respectively. Out of 35 isolates obtained, 22 were categorized as Aeromonas hydrophila, 12 were classified as Aeromonas sobria and Aeromonas caviae were found in only one isolate. The virulence factors of Aeromonas spp. were detected and the results showed that all isolates produced of hemolysin (91.4%), protease (77.1%), and lipase enzyme (17.1%).

CONCLUSION: This study indicates that the presence of A. hydrophila with virulence potential in fresh and RTE fish may be a major threat to public health.

Keywords:

Aeromonas hydrophila; fish; hemolysin; lipase; protease enzyme; public health

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