Detection and Identification of Virulent Yersinia ruckeri, The Causative Agent of Enteric Redmouth Disease in Rainbow Trout in West Azerbaijan Province, Iran

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Background & Objectives: *Yersinia ruckeri* is the causative agent of yersiniosis or enteric redmouth disease leading to significant economic losses in salmonid aquaculture worldwide. In the present study the Detection of enteric redmouth disease and its causative agent in rainbow trout in west Azerbaijan province, Iran was investigated.

Methods: During Augus 2009 to June 2011, cases of disease with clinical signs of disease referred to the microbiology labarotary of Aremia research institute, the University of Urmia. Fish kidneys, spleen and liver were cultured aseptically on BHI plates and incubated at 25ºC for 48 h. Bacterial colonies were subcultured onto BHI, identified using conventional biochemical system. For molecular detection, genomic DNA was extracted from collected samples and subjected to Polymerase Chain Reaction.

Results: Using conventional biochemical tests, *Y. ruckeri* was detected from 10 fish (4.48% of total examined fish). All the diagnosed bacteria as *Y. ruckeri* were also confirmed using a specific PCR assay. The 16S rRNA gene was used in PCR assays and fragments of 575 bp in size were amplified from *Y. ruckeri* isolates and reference strain) BCCG/LMG 3279). *Y. ruckeri* isolates were belonged to two biotypes, biotype 1 and 2, based on their capability to ferment sorbitol, differences in the hydrolysis of Tween 20 and Tween 80, and motility. Results showed that 30% of isolates were belonged to biotype 1 and 70% of isolates were classified as biotype 2. Results of antibiotic sensitivity test using disk diffusion test revealed that all *Y. ruckeri* isolates were susceptible to quinolones, cephalosporins and tetracyclines. However, they were resistant to Lincomycines.

Conclution: It was concluded that *Y. ruckeri* exist in rainbow trout farms in west Azerbaijan and control measures need to be employed in the farms.

Keywords: Yersinia ruckeri; Detection; Rainbow Trout; West Azerbaijan Province; Iran