

NOTICE OF PUBLICATION

AQUACULTURE COLLABORATIVE RESEARCH SUPPORT PROGRAM



RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

Title: Haematological characterization of loach *Misgurnus anguillicaudatus*: Comparison among diploid, triploid and tetraploid specimens

Author(s): Zexia Gaoa, Weimin Wanga, Corresponding Author Contact Information, E-mail The Corresponding Author, Khalid Abbasa, Xiaoyun Zhoua, Yi Yangb, James S. Dianac, Hanping Wangd, Huanling Wanga, Yang Lia and Yuhua Suna

Date: 27 June 2007 Publication Number: CRSP Research Report 07-222

The CRSP will not be distributing this publication. Copies may be obtained by writing to the authors.

Abstract: The purpose of this study was to determine whether diploid, triploid and tetraploid previous loach (*Misgurnus anguillicaudatus*) differed in terms of their main previous haematological and physiological previous characteristics. Diploid and tetraploid fish were produced by crossing of natural diploids ($2n \sim 2n$) and natural tetraploids ($4n \sim 4n$), respectively. Triploid fish were produced by hybridization between diploid males and tetraploid females. The blood cells were significantly larger in polyploids, and the volumetric ratios of erythrocytes and leucocytes (thrombocyte and neutrophil) in tetraploids, triploids and diploids were consistent with the ploidy level ratio of 4:3:2. No significant differences were observed in haematocrit among polyploids. The erythrocyte count decreased with increased ploidy level, while total haemoglobin, mean cell volume, mean cellular haemoglobin content, and mean cell haemoglobin concentration all increased with increase in ploidy level. Erythrocyte osmotic brittleness declined in polyploids so that polyploid erythrocytes were more resistant to osmotic stress than diploid ones. Overall, previous loach with higher ploidy levels showed evidence of some advantages in previous haematological characteristics.

This abstract was excerpted from the original paper, which was in *Comparative Biochemistry and Physiology, Part A* 147 (2007) 1001-1008

CRSP RESEARCH REPORTS are published as occasional papers by the Program Management Office, Aquaculture Collaborative Research Support Program, Oregon State University, 418 Snell Hall, Corvallis, Oregon 97331-1643 USA. The Aquaculture CRSP is supported by the US Agency for International Development under CRSP Grant No.: LAG-G-00-96-90015-00 and by collaborating institutions. <http://pdacrsp.oregonstate.edu>