J Aquac Res Development 2017, 8:9(Suppl)
DOI: 10.4172/2155-9546-C1-021

Physiological and transcriptomic traits during gonad ripening of the mussel *Modiolus capax* (Bivalvia: Mytilidae; Conrad, 1837) using potentiated substances

Jose Luis García-Corona, Jose M Mazon-Suastegui, Fabiola Arcos-Ortega and **Carmen Rodriguez-Jaramillo**
Northwestern Center for Biological Research, Mexico

Bivalve molluscs are the third most important group in world aquaculture production. The marine mussel *Modiolus capax*, native species of the Mexican Pacific has aquaculture potential, but scientific knowledge must be generated to allow the sustainable production of this resource. Recent studies suggest that the use of potentiated substances in marine species has quantifiable results in growth, survival, reproduction, and immunity. The objective of the present study was to evaluate its physiological and transcriptomic effect during the gonadal maturation of *M. capax* in the laboratory. Three treatments (SiT-CaS-HeS, PhA-FeP-ZnP, ViA-ViP-ViT [30C], microalgae-wheat diet), a positive control (ethanol 87°GL and microalgae diet) and two negative controls (microalgae-wheat and microalgae diet) were evaluated. Morphophysiological indexes (area of gonadal coverage, ovarian maturity, gonadal development and reproductive potential); oocyte quality indicators (morphometric and bioenergetics); energy reserves (lipids, carbohydrates and proteins) in the ovary, the digestive gland and the adductor muscle, were evaluated, obtaining significant differences ($P<0.05$) among the treatments for all the physiological variables evaluated. Using RNA-Seq technology, we performed a *de novo* transcriptomic characterization and a differential gene expression analysis between the different experimental conditions. After the GO annotation, it was possible to identify several genes differentially expressed between treatments, as well as their statistical over-representation in terms of biological processes, molecular function and cellular component in the organisms. With this research, scientific knowledge has been generated about the effect of alternative treatments such as the use of potentiated substances during the process of controlled ripening of bivalve molluscs.

jcorona@pg.cibnor.mx