Consistency in risk taking tests throughout life and challenging situations

Bastien Sadoul, Isabelle Leguen, Sebastien Alfonso, Benjamin Geffroy, Béatrice Chatain, Patrick Prunet, Marie-Laure Bégout

CONSISTENCY IN RISK TAKING TESTS THROUGHOUT LIFE AND CHALLENGING SITUATIONS

Bastien Sadoul*, Isabelle Leguen, Sébastien Alfonso, Benjamin Geffroy, Béatrice Chatain, Patrick Prunet and Marie-Laure Bégout

Laboratoire Adaptation et Adaptabilités des Animaux et des systèmes (L3AS)
Ifremer, UMR MARBEC
Route de Maguelone, 34250 Palavas-les-flots, France
bastien.sadoul@ifremer.fr

Growth, disease susceptibility and, more generally, energy allocation were all demonstrated to be partly driven by the coping style. Being able to describe individual differences in this coherent set of behavioural and physiological responses to stress, has therefore major implications for aquaculture. Notably, the use of mass-screening tests can help to routinely and effectively select the best dams and sires in a population for selection programs. The group risk-taking test, which has previously been described as a promising tool, assigns to thousands of fish a boldness score (Ferrari et al. 2016). Here, we tested whether sea bass (*Dicentrarchus labrax*) behaviour assessed using the group risk-taking test was consistent throughout long periods of time and across challenging situations.

After being individually PIT tagged and divided in three tanks, fish were challenged in a first group risk-taking test. We repeated the tests on the same fish 3 times over the next 6 months. Tests were however performed with different tank sizes, after a chronic stressor or after mixing fish from different tanks in a common garden. At the end of the experiment, fish were sexed, blood was sampled for cortisol measurements and organs were taken for gene expression analyses.

Our results highlight a strong consistency of the coping style across time and environments (figure 1), and this was independent of the sex and the life history. The strong repeatability of our results also suggests that the group risk-taking test is a reliable and robust test. Finally, our results are related to physiological measures in order to further explain differences in coping styles.

ERANET, COFASP and French National Research Agency funded the project SUSHIFISH.

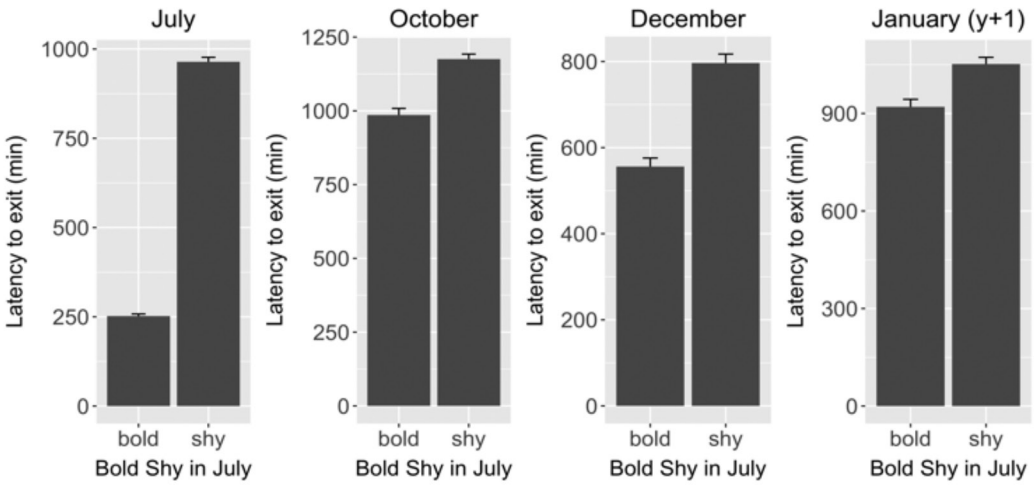

Figure 1. Consistency over time of the coping style in sea bass.

AQUA 2018

#We R Aquaculture

We are the producers, the investors, the suppliers, the processors, the vendors, the scientists, the educators, the students and the consumers of farmed aquatic products.

organized by

eas
www.aquaeas.eu

WORLD AQUACULTURE Society

eas premium sponsors

MSD Animal Health

marineharvest

EVONIK INDUSTRIES

gold sponsor

BioMar

was premier sponsors

DARLING INGREDIENTS

BLUE AQUA®

Tyson

Zeigler
nutrition through innovation

conference sponsors

Montpellier Méditerranée Métropole

La Région Occitanie Pyrénées · Méditerranée