

Muscle Activity as a Potential Indicator of Welfare in Farmed European Sea Bass: Results from an electromyographic (emg) telemetry study

Carbonara, P.L.¹, Scolamacchia, M.¹, Spedicato, M.T.¹, McKinley, R.S.², & Lembo, G.¹

Abstract

Fish welfare at production sites is essential for responsible development and management of a viable aquaculture. Understanding energy expenditure from free swimming fish, associated to a specific rearing density, could be a useful descriptor of a particular physiological status of the farmed fish. Thus, a measure of muscle activity, remotely monitored using electromyographic (EMG) telemetry, could assist in validating physiological welfare indicators. In this study, muscle activity of cultured sea bass was monitored continuously for 2 months at 10 and 50 kgm⁻³ using electromyographical radio tags. Significant differences in the scope for activity between fish from the two densities were found, although no evidence of extreme muscle usage was shown, even at the highest tested rearing density.

¹ COISPA Tecnologia & Ricerca, Via dei trulli 18, 70126 Torre a Mare (Bari) –Italy. Tel. +390805433596; e-mail: carbonara@coispa.it

² University of British Columbia/Department of Fisheries and Oceans - Center for Aquaculture and Environmental Research-, Vancouver, Canada.