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Abstract

Seasonal Comparison of Length-Weight Ratio of Sea Bass (*Dicentrarchus labrax*), in Two Types of Aquaculture Facilities †

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Abstract: Sea bass (*Dicentrarchus labrax*) is one of the most important fish species in European aquaculture, and it is farmed in different types of facilities and environmental conditions, which may imply differences in the development and the condition of the farmed fish. In this study, we compare the seasonal length–weight relationships of the fish, in two different types of facilities. Some fish were farmed in the Atlantic Ocean, in cages located offshore; some fish were farmed in ponds, in the Guadalquivir River estuary. Fish collected for sale from both facilities were measured and weighed seasonally for one year. Additionally, environmental factor such as water temperature, salinity, and oxygen concentration were measured. These differences in the length–weight ratio are very important in the use of hydroacoustics and computer vision techniques for estimating fish biomass in aquaculture, because they provide good estimates of length, which must be converted to weight with suitable conversion equations. The results of this study show that fish farmed in both facilities presents differences in the length–weight ratio in the different climatic seasons. Comparing the measurements of the fish from the two facilities, those raised in offshore cages, with lower water temperature and higher salinity, exhibited a shorter standard length but a greater weight compared with their size. In contrast, fish farmed in ponds, with higher water temperatures and lower salinity, exhibited a longer standard length, but a lower weight in relation to their length.

Keywords: length–weight; sea bass; *Dicentrarchus labrax*

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