Introduction

Red porgy has been proposed as a candidate for diversification of marine aquaculture production (Hernández-Cruz et al., 1999). However, limited larval survival together with the elevated levels of skeletal deformities occurrence (over 50% of the population), under intensive or semi-intensive systems constitute the major bottlenecks for the production of this species at commercial scale (Roo et al., in press). Essential fatty imbalances on early life stages may alter the osteological development of red porgy larvae (Cahu et al., 2003). The objective of this study was to determine the effect of rotifers enrichment, particularly on DHA, on growth, survival and occurrence of skeletal deformities in red porgy.

Materials and methods

Larval rearing was performed in an intensive system (IS) with 6 tanks of 2m³ capacity, stocked with 100 eggs.1-1. In trial A DHA Protein Selco ® (DPS-Rot) and Red Pepper Paste ® (RPP-Rot) were tested. In trial B, DHA Protein Selco ® (DPS-Rot) and purified DHA (MorDHA omega-3 I.Q® Exp-Rot) were tested. In trial A DHA Protein Selco ® (DPS-Rot) and Red Pepper Paste ® (RPP-Rot) were tested. In trial B, DHA Protein Selco ® (DPS-Rot) and purified DHA (MorDHA omega-3 I.Q® Exp-Rot) were tested. This option is feasible in the current setting and compares to the fixed DHA content of Red Pepper Paste ®, with added purified DHA (MorDHA omega-3 I.Q® Exp-Rot).

Results

Fry quality evaluation in trials A, B.

Discussion

A reduction in the incidence of skeletal deformities was found in larvae fed RPP-Rot in trial A, which could be related to its higher DHA content, despite other differences in the enrichment composition. However, since the only difference between rotifiers of trial B was its DHA content, the reduction in the number of deformed fish for each deformity studied (about 50%) when larvae were fed higher DHA levels demonstrates the important role of this FA in the prevention of deformities at the rotifer feeding stage.

DHA content in the rotifers in both trials (1.8 and 4.7% dw DHA in DPS and in RPP-Rot, in trial A and 2.0 and 4.5% dw DHA in DPS and DHA-Rot in trial B) fulfill the DHA requirements for maximum growth.

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