

Tailoring your feeds

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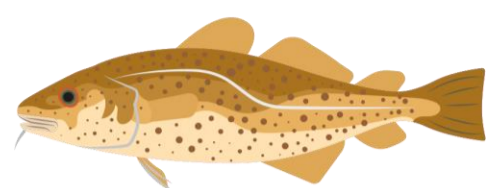
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Acknowledgments:
 This work is part of project E!219 EarlyCOD_17205, supported by EUROSTARS-3 program, and by Portugal and the European Union through ERDF, Algarve 2030, and COMPETE 2030, in the framework of Portugal 2030



Alternative microdiets sustain good performance of Atlantic cod (*Gadus morhua*) larvae



INTRODUCTION

Atlantic cod larviculture protocols need optimization:

- ↓ Variability in growth and survival
- ↓ Incidence of skeletal deformities

Recent progress:

- ▶ use of alternative live prey (e.g., cryopreserved barnacle nauplii)
- ▶ microdiet technology and species-tailored formulations

Objective: Evaluate the impact of two innovative microdiets combined with rotifers, plankton eggs and barnacle nauplii, on growth performance and skeletal anomalies in Atlantic cod (*Gadus morhua*) larvae

CONCLUSIONS

- ▶ The two innovative microdiets bring **very good growth performance** in cod larvae and **reduce the incidence of skeletal deformities**
- ▶ Feeding regime can have a strong impact on skeletal deformities incidence, and hence juvenile quality

METHODS

3 feeding regimes, with 3 replicates:

		Co-feeding	
CTRL	Rotifers + Cryo-μ		Control diet
D3	+ Cryo-S + Cryo-L		D3 diet
D4			D4 diet
dph	3	22	67



Husbandry: 400 L tanks; 8.0 to 10.0°C; 24h light regime

Cod larvae: fed from 3 days post-hatch (dph) to 67 dph (trial end)

Live feed protocol: enriched rotifers, followed by PLANKTONICS's plankton eggs (Cryo-μ), small & large barnacle nauplii (Cryo-S & Cryo-L)

Microdiets: CTRL - commercial diet;
 D3 and D4 diets - experimental prototypes by SPAROS

Analyzed parameters: Dry Weight (DW), Standard Length (SL), and Skeletal Deformities detected by staining with alizarin red S.

RESULTS AND DISCUSSION

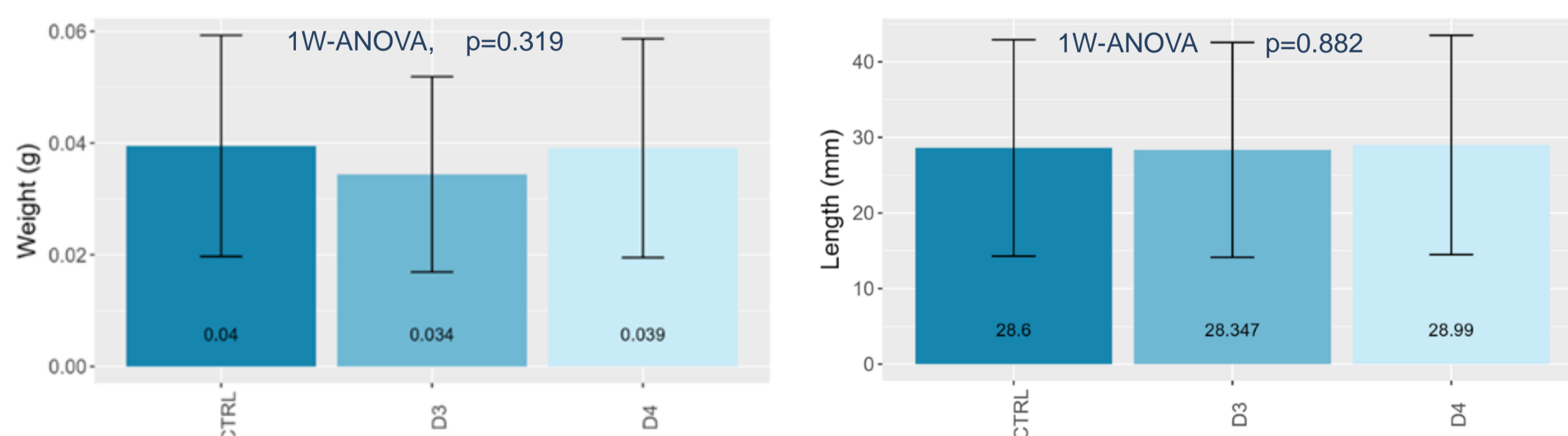


Fig. 1. Dry Weight (Left) and standard length (Right) in Atlantic cod at 67 dph, fed a commercial microdiet (CTRL), and two experimental microdiet prototype diets (D3 and D4). Means ± SD (n=3).

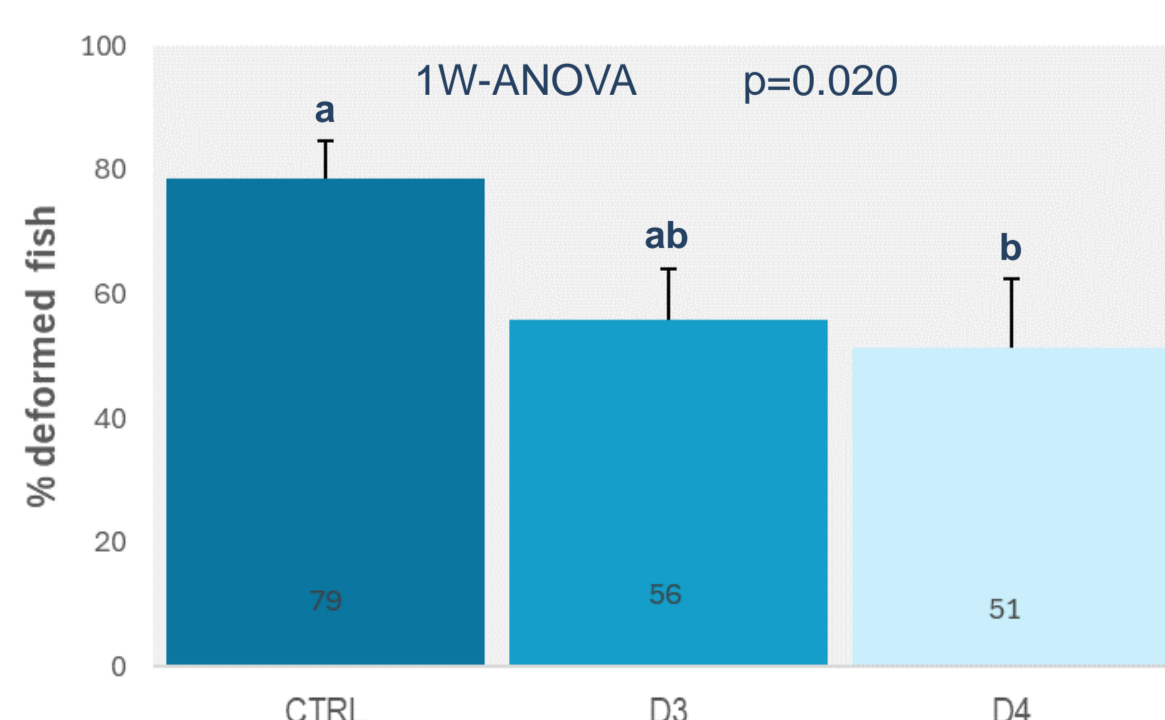


Fig. 2. Incidence (%) of skeletal anomalies detected by staining with alizarin red S, in Atlantic cod at 67 dph. Means + SD (n=25).

- The 3 microdiets tested brought high growth in Atlantic cod larvae
- Control diet had a higher incidence of skeletal deformities, in particular in number of Atlantic cod with scoliosis
- Mortality rate between 15 and 67 dph was identical among treatments ~19%