

Abstract

Meagre, *Argyrosomus regius* A., is a new species for aquaculture diversification. Different zoo-technical parameters such as feeding sequence and rearing protocols during the larval phase need to be optimized. Eggs of meagre were cultured under intensive system (50 indv.l⁻¹ in 2m³ tanks) to evaluate the effect of the different co-feeding regimes (5,10,15 and 20 days of co-feeding Artemia+MD from 10dah) over growth survival, stress resistance and biochemical composition of the larvae. At 40dah, larval survival ranged from 13.11-

22.33% for larvae fed directly from rotifers to MD (12dah) to larvae co-fed Artemia and microdiet for 20days. No significant differences were found on larval dry body weight, however standard length varies from (14.87-18.53) depending on the co-feeding regime, being higher in the larvae with longer cofeeding periods. Survival after stress resistance test ranged from 53.3±11.5% and 75.0± 13.8%.

Materials and methods

Experimental conditions

- 15 fiberglass tanks with a capacity of 150 l.
- The experiment was conducted in triplicate
- sea water was previously filtered and sterilized by UV radiation.
- T^a: 20.7 ± 0.8 °C
- O₂: 5.85 ± 0.12 ppm
- The photoperiod was 12-12, light and dark, with artificial light.

Initial Stocking

- Initial stocking density was of 50 larvae.l⁻¹ with 9 days after hatching larvae (LS = 4.24 ± 0.21mm, PS = 0.13 ± 0.008 mg) stocking was performed according to the volumetric method described by Borrero (2008).



Experimental tanks.

Feed

Table I. Feed sequence and quantities used.

Treatment	0	5	10	15	20	Feed added
	Days after hatching					
Phytoplankton	9-15	9-15	9-15	9-15	9-15	300.000 cel.ml ⁻¹
Rotifer	9-15	9-15	9-15	9-15	9-15	6-7ml ⁻¹
Nauplii		12	12	12	12	0.5ml ⁻¹
MetaNauplii		13	13	13	13	0.5ml ⁻¹ + 0.5ml ⁻¹
Metanauplii		14	14	14	14	1 ml ⁻¹
Metanauplii		15-17	15-22	15-27	15-32	1.5ml ⁻¹
Micro-diet GM 150-300 (50%)	12-30	12-30	12-30	12-30	12-30	15% biomass.d ⁻¹
Micro-diet GM 300 (100%)	30-40	30-40	30-40	30-40	30-40	15% biomass.d ⁻¹

Determinations

- Standard length (n=30 per tank; 40dah).
- Dry weight (n=30 per tank; 40dah).
- Final survival (40 dah).
- Activity test (n = 30 per tank; 120 seconds air exposure at 40dah).
- Biochemical analysis

Results and discussion

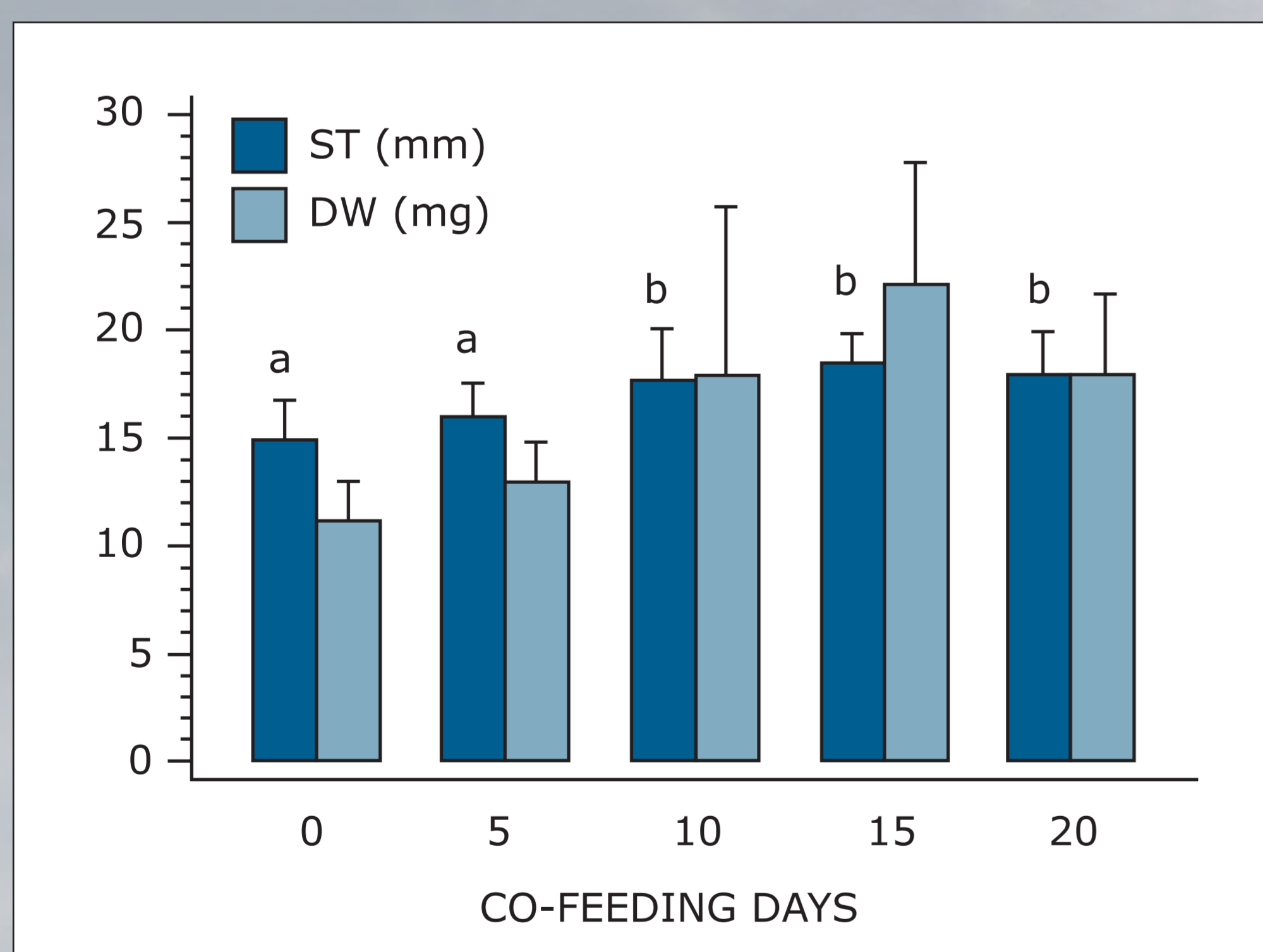


Figure 1. Range of the calculated parameters in the experiment.

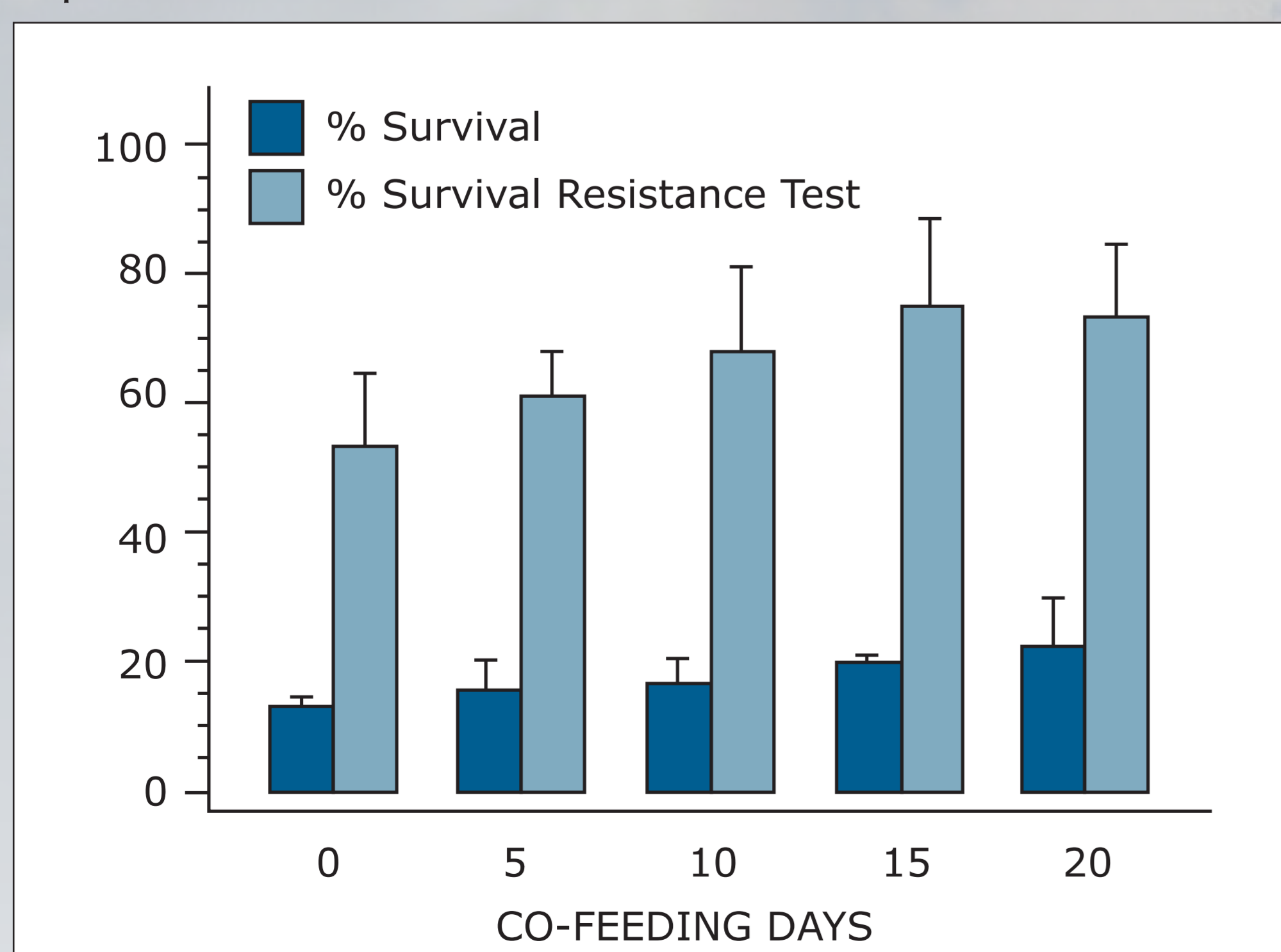


Figure 2. Range of the calculated parameters in the experiment.

Statistically differences were found in standard length, showing that the larvae with a co-feeding time of 10, 15 and 20 days were significantly bigger than those of 0 and 5 days co-feeding. Alves *et al.* (2006) working with fat snook (*Centropomus parallelus*) larvae of 30 days of life and with a co-feeding period of 5, 10 and 15 days found significant differences in the standard length.

No statistically significant differences were found in final larvae survival. Regarding the activity test of air resistance no significant differences between treatments were found, although larger sizes larvae show a better survival. Similar results were observed by Liu *et al.* (2002) working with of sea bream (*Sparus aurata*) larvae.

Table II. Biochemical composition of the experimental larvae.

Tret.	Protein	Lipids	ARA	EPA	DHA	n-3 HUFA
0	10.16±0.25	2.06±0.05	1.63±0.05	8.75±0.11	16.31±0.76	27.40±0.51
5	10.31±0.14	2.08±0.04	1.63±0.06	8.35±0.26	16.54±0.36	27.42±0.76
10	10.19±0.17	2.16±0.06	1.76±0.06	8.72±0.41	16.30±0.91	27.50±0.48
15	10.43±0.19	2.10±0.05	1.75±0.05	8.53±0.25	16.09±0.53	26.72±0.39
20	10.14±0.33	2.08±0.06	1.69±0.07	8.65±0.17	16.34±0.22	26.89±0.63

There were no statistically significant differences in any of the biochemical composition of the larvae, this could probably be due to the feed used, and that was the same for all treatments, varying only on the duration of its use. Similar results were shown by Borrero (2008) in an experiment with larvae of the same species.

Acknowledgement

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