

Jaw Deformities of Cultured Orange-spotted Grouper (*Epinephelus coioides*) Larvae in Response to Differently Enriched *Artemia franciscana*

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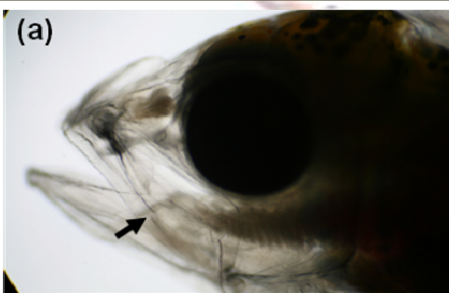
Introduction

The orange-spotted grouper is one of the most important economic fish species in Taiwan, and the larval stage deformities will affect the value dramatically. In this study, two different commercial enrichment products were tested for larval jaw malformation incidence. Grouper larvae were fed *Artemia nauplii* enriched with (1) A1 DHA SELCO[®] or (2) SERRANI SELCO[®] during 14-40 days post hatch, and analyzed the skeleton development of larval mouthpart.

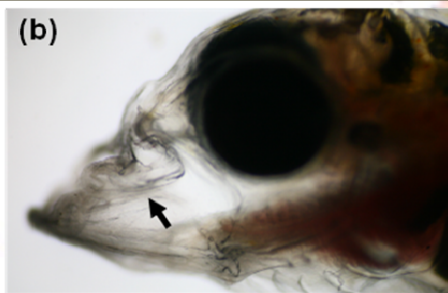
Results

Grouper larvae fed differently enriched *Artemia* and showed different incidence of jaw deformity.

Deformity rate	A1 DHA SELCO [®]	SERRANI SELCO [®]
Trial 1	0%	64.7%
Trial 2	0.1%	40.2%

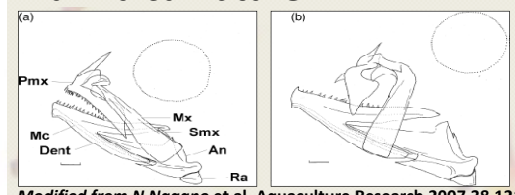


A1 DHA SELCO[®]



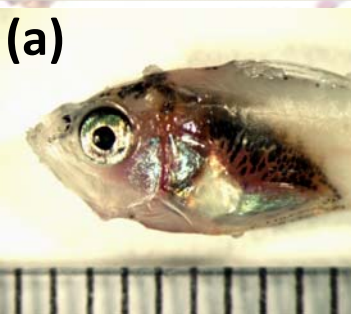
SERRANI SELCO[®]

The larval jaw malformations were caused by abnormal maxilla curvature.

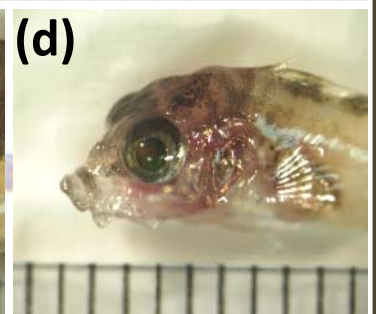
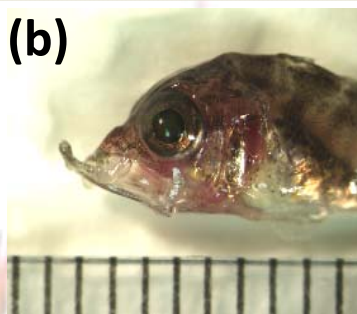


Modified from N Nagano et al. Aquaculture Research, 2007, 38, 121

Severe mouthpart deformities including downward curving of maxilla and elongated lower jaw compared to normal larvae at 40 DPH.



A1 DHA SELCO[®]



SERRANI SELCO[®]

Conclusion and Discussion

In this study, both environmental and biological factors were well maintained, indicated that the nutrient contents or composition of SERRANI SELCO[®] may affect the larval skeleton development, a similar result was also observed in giant grouper (*Epinephelus lanceolatus*) suggested that the same mechanism could be found in other species of grouper (unpublished data). The further examination of actual causative factor is proceeding.

Acknowledgements

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