EMBRYONIC DEVELOPMENT STAGES OF MEAGRE *Argyrosomus regius* Asso 1801 UNDER REARING CONDITIONS

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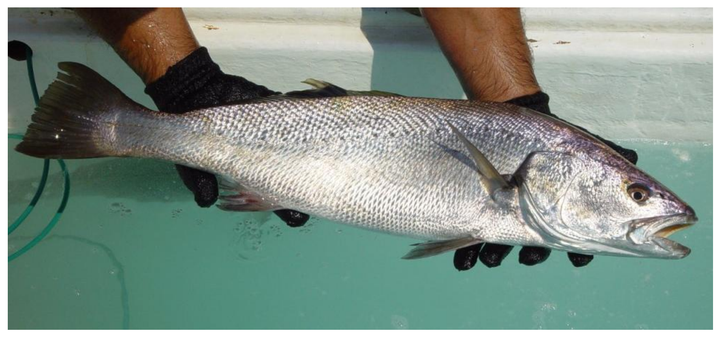
INTRODUCTION



Argyrosomus regius (also known as Meagre) is a fish of the Sciaenidae family. Meagre is found in the Mediterranean and Black Sea and along the Atlantic Coasts of Europe and the West Coast of Africa. It's characterized by big head with elongated body and quite small eyes. Body color is silver-gray, and bronze traits are seen dorsally. Fin base is reddish brown and mouth cavity is yellow-gold. They can reach up to 2 min length and 50 kg in weight.

Meagre has been considered as a very promising candidate species for the Mediterranean aquaculture. Fast growth rate, wide range of salinity tolerance, high FCR and also high nutrient content can be counted as some of advantages in the culture of meagre. With these advantages this specie has become alternative aquaculture specie instead of sea bass and gilthead sea bream. The aquacultural production of this fish has been carrying out successfully in Turkey since 2005. However, studies about its early life history and rearing conditions on embryonic and larval development of the specie under captivity are limited.

This study was carried out to evaluate embryonic and larval development stages of meagre under rearing conditions.

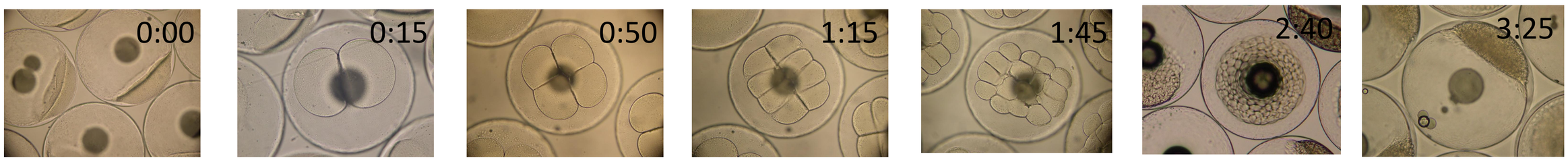
MATERIAL and METHOD

During the experiment, water temperature and salinity were maintained at 22,5ºC and 38ppt. Eggs were obtained from wild broodstock using hormonal treatment (LhRHa). Spawning eggs were collected from the draining end of the spawning tank with a commercial collector system. The viable buoyant eggs were separated from the dead sinking eggs. Non-floating eggs were discarded and floating (fertilized) eggs were stocked in fiberglass 200 lt tanks and eggs stocking density were maintained as 100 eggs/lt. Embryonic development stages were observed continuously and photographs were taken each time when some significant change had occurred at embryonic development stages with using Olympus trinocular microscope and Nikon 4300 camera. Larval development stages were observed and photographed with same systems but once a day until day 30.

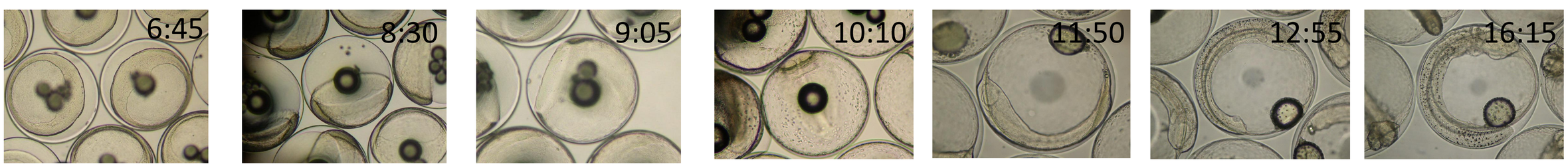
RESULTS

Meagre eggs are pelagic, spherical and transparent. Fertilized eggs are from 825 to 910µm diameter and the mean of the egg sizes are 857±23 µm. The eggs usually contained one oil globule (62%) averaging 215±10 µm in diameter; about 38% contained 2-4 oil globules which coalesced into a single globule at later stages. The embryonic development of meagre (*Argyrosomus regius*.) eggs at 22,5 ºC are given below.

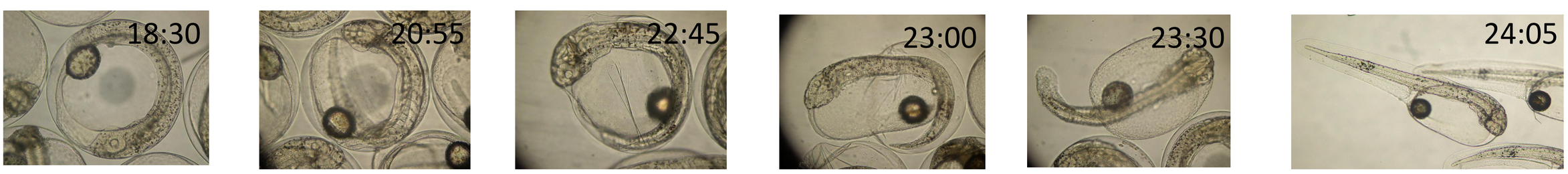
At 22±0,5ºC, the eggs hatched 24 hours after fertilization. The mean body length of larvae was measured 2593 ± 55µ after hatching. Opening of the mouth and the anus were observed after 3rd day of hatching.



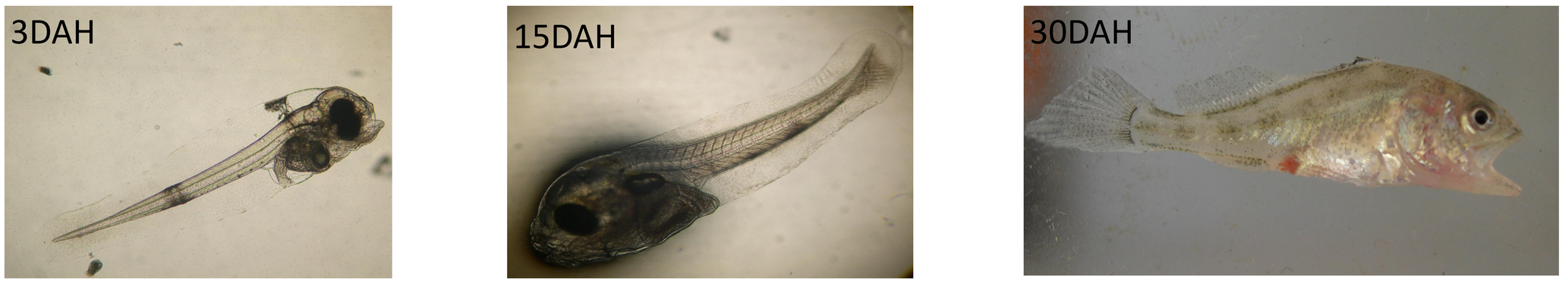
Cell cleavage, formation of the blastodisc



Epiboly, blastodisc spreading over yolk, organogenesis, formation of brain, eyes, somites and heart



Organogenesis-growth, frequent twitching observed. embryo around the yolk, hatching



Larval development stages

CONCLUSION

Even during its larval stage it had been observed that meagre is a fast growing specie. In the 3rd day of hatching anus and mouth opened and swim bladder inflation started occuring. Yolk sac was also consumed on 3rd day. Thus first feeding of this specie is significantly important. Larvae have reached from 0,27cm to 2,66cm of body lenght at the end of 30 days using green water technique fed by rotifera and artemia under intensive conditions.