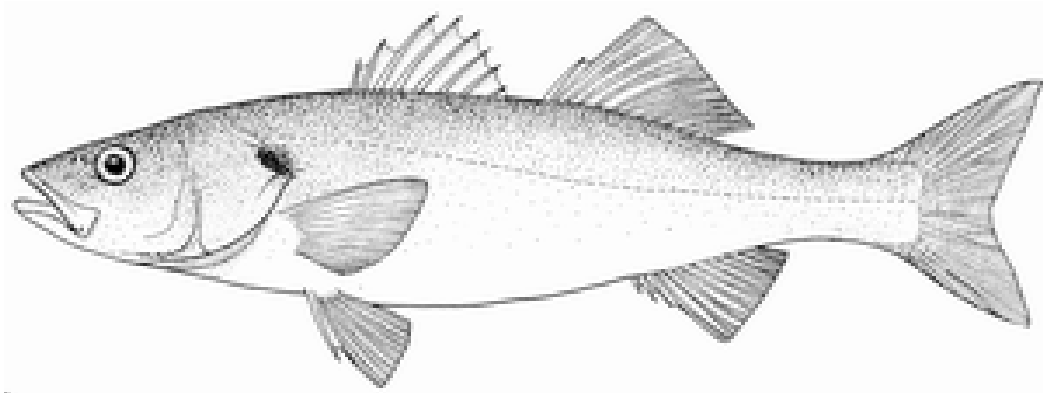


Marine Fish and Culture

Prof. Dr. Hasan Hüseyin ATAR

European seabass - *Dicentrarchus labrax*
(Linnaeus, 1758) [Moronidae]



Ongrowing techniques

- In intensive production, ongrowing units are supplied with fry from hatcheries and controlled diet is provided.

Juveniles are sold to farmers as ongrowing stock at a size of 1.5-2.5 g. The ongrowing juveniles reach 400-450 g in 18-24 months. Feeds are distributed by automatic feeders every 10-15 minutes for small fish (2-15 g), or by hand for larger fish. Grading is necessary at least two or three times per cycle, in order to avoid growth differentiation and cannibalism. Fattening can occur in tanks or in cages system.



- *Cage systems*

Net-pens (cages) can be of different kinds but the principle is the same; all types are based on a natural exchange of water through pens. The quality of sites is therefore highly variable, according to local conditions such as tide and current. The cages are usually made of steel with areas of 4 to over 10 m², having nets suspended below the walkways up to 6-8 m deep. Some farms are anchored close to the land and can be served from a landing. Others are located in the open sea or in the middle of a protected bay and can only be served by boat. An important factor is the husbandry of the pens; frequent net changing is essential, especially in hot periods (every 15-20 days); weekly cleaning to remove fouling organisms and periodical treatment with anti-fouling products is also necessary. The removal of dead and moribund fish by divers is done, usually weekly but preferably daily during outbreaks of problems.





- *Tank systems*

Tanks are usually supplied with seawater (38‰) maintained in a continuous flow-through system under ambient temperature. Alternatively, brackishwater (30‰) pumped from adjacent lagoons may be used. High stocking densities are applied (20-35 kg/m³); this means that accurate control of water quality and careful observations of fish health are essential. A recirculation system, to control water temperature (between 13-18 °C) is used during autumn/winter, frequently full-time in hatchery and the pre-fattening phase of the production cycle; this system is also used for fattening in high technology farms. This practice improves growth but can be highly expensive due to the required technology for water quality control (filtering, air stripping, UV treatment, catabolite removal).

