

Oyster

Ostrea edulis



Crassostrea gigas



Biology

Nowadays the culture of the native flat oyster (*Ostrea edulis*) is very limited in Europe. Over exploitation and disease have led to its depletion. The Pacific cupped oyster (*Crassostrea gigas*), native to Japan, was brought to Europe in the 1970s. Thanks to its rapid growth and adaptability to different surroundings, the Pacific cupped oyster is now the most widely reared oyster worldwide, including Europe. This species is now subject to significant mortality in several Member States. It has started to reproduce in the wild in northern EU Member States, where previously it did not, leading to fouling in a few coastal regions.

Oysters are hermaphrodites and change sex, maturing first as males and then as females. Reproduction depends on the temperature and salinity of the water. Before settlement the larvae spend some time at the pelagic stage and can be widely dispersed by water currents. Then they change shape, taking on the juvenile forms of the bivalve shellfish illustrated above. Oysters are filter feeders.

Farming

Production starts by the collection of spat (*oyster larvae*) in their natural setting. To gather the wild spat, oyster farmers use collectors placed at strategic locations. When the spat have grown to a few millimetres, they are removed from the collectors and are ready for rearing. However, a large share of spat now comes from hatcheries. In this case the broodstock is maintained in sea-based facilities. The oysters release their gametes in spring when the water temperature is high. The larvae are placed in closed-circuit tanks and fed cultured algae. When the larvae are about to settle on a support, they are 'collected' by placing a clean, solid settlement substrate in the tank.

The kind of oyster-rearing method used depends on both the environment (tidal range, water depth, etc.) and tradition. Along the Atlantic coastlines of France, oysters are mainly produced by 'off-bottom culture'; the oysters are placed in plastic mesh bags attached to low shore trestles. 'Bottom culture', where the oysters are placed directly on the shore or below low water, is less widespread today. 'Suspended culture', where oysters are reared on ropes like mussels, is found in Spain; this method is suitable for rearing in waters without tides, or offshore. Another method, 'deep-water culture' consists of placing the oysters in parks that can be located in depths of up to ten metres.

Oysters reach commercial size after 18 to 30 months. Harvesting methods vary, depending on the type of culture: oysters grown in off-bottom culture are harvested by removing the oyster bags from the trestles; oysters reared in bottom culture are collected at low tide using rakes or by dredging (if the water level allows); oysters reared in deep water are collected by dredges.

Production and trade

Worldwide, aquaculture accounts for 97% of total oyster production. China is by far the largest producer, with 80% of total world production, followed by Korea, Japan, the USA and the EU. The EU is self-sufficient as regards oysters and trade flows with third countries are insignificant. Intra-EU trade is also quite limited, and is concentrated on flows from France to Italy. The French market is the largest market for oysters in the EU.



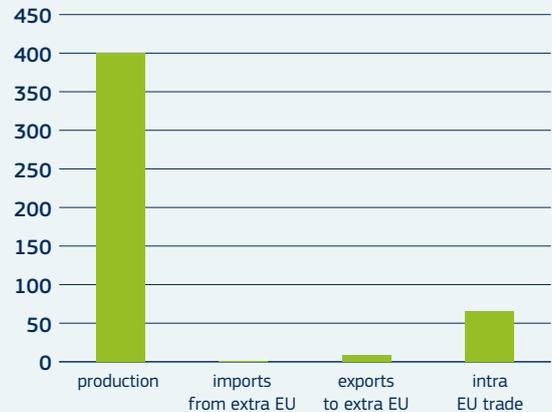
Presentation on the market

More than half of oyster consumption takes place during the Christmas season. They are pre-graded by size into traditional wood-chip punnets (circular or rectangular), and they have to be opened prior to consumption. So far attempts to develop ways of selling pre-opened oysters or easy-opening oysters have failed. European consumers prefer to eat oysters uncooked.

Nutritional value per 100 g (Pacific cupped oyster – average)

Calories: 66 kcal
Protein: 8.6 g
Selenium: 29 µg
Vitamin D: < 0.5 µg
EPA: 146 mg
DHA: 71 mg

EU oyster supply and trade* (2009) (million EUR)



* from fishery and aquaculture.

Source: Eurostat.

Oysters au gratin

Ingredients (serves 4)

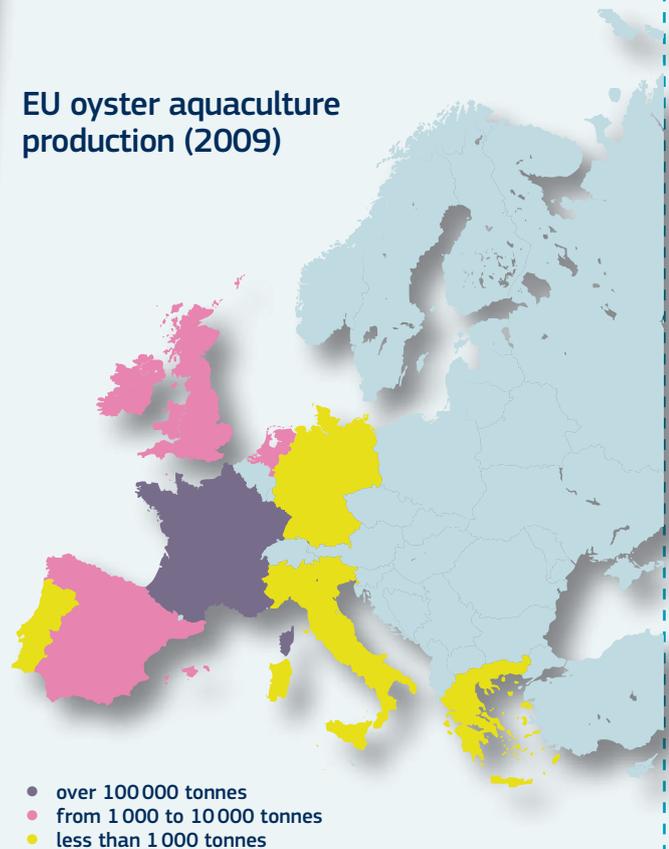
- 24 cupped oysters of around 70-80 g
- 30 g butter
- 1 shallot
- 25 g plain flour
- 10 cl dry white wine
- 1 lemon
- 1 egg
- A little crushed black pepper
- 5 cl crème fraîche 40% fat content

Instructions

1. Open the oysters and remove them carefully from their shells, keeping the liquid.
2. Cook the oysters in a pan, in their liquid, taking the pan off the heat when it comes to the boil.
3. Lightly fry the chopped shallot in butter.
4. Add the flour and mix together well.
5. Add some of the oyster liquid, white wine, lemon juice and some of the crushed pepper. Do not add salt.
6. When the sauce boils, strain it and make sure it has the right consistency.
7. Blend the egg yolk and the crème fraîche and add this mixture to the sauce.
8. Place the oysters back into their shells and cover them with the sauce.
9. Grill until they are golden brown. Serve.

Recipe courtesy of chef Philippe Votquenne (Euro-Toques Belgium)

EU oyster aquaculture production (2009)



Source: Eurostat.