Mussels

**Mytilus edulis**

**Mytilus galloprovincialis**

**Biology**

Mussels are found in a wide variety of habitats, from tidal areas to fully submerged zones, with a broad range of temperature and salinity. They feed on phytoplankton and organic matter by constantly filtering the sea water and are therefore always farmed in areas that are rich in plankton. Water quality is a very important factor for mussel rearing.

Specific features of mussels are their high fecundity and a mobile larval phase, allowing for widespread distribution. Usually between March and October, depending on the latitude, mussels produce larvae that are carried by currents. In less than 72 hours, the larvae fatten and develop to a stage where they can no longer float. They then settle, attaching themselves to various substrates.

**Farming**

Mussel production is the top shellfish farming activity in Europe. There were reports in France in the 13th century of cultivation on wooden stakes. Production began on the Atlantic coast with the blue mussel (*Mytilus edulis*), followed by the Spanish Atlantic coast and the Mediterranean with the Mediterranean mussel (*Mytilus galloprovincialis*), which is reared right up to the Black Sea. Hybrids of the two species are also commonly found in nature.

Culture begins with the collection of mussel seed either from natural beds or from a rope or other collector placed in areas chosen for their currents and the presence of micro-organisms. The ropes are collected and transferred to mussel farms, generally between May and July. Mussel dredges move the juveniles from natural beds to sheltered growing areas inshore.

The three most common rearing methods in EU coastal areas use:

- **Ropes** (mainly in Spain, the Mediterranean, Ireland and the United Kingdom) – The mussels are attached to ropes that are suspended vertically in the water from a fixed or floating structure (raft). In Galicia (Spain), rafts are located in estuaries. There is some near-shore mussel farming in France, Ireland and Belgium using longlines.

- **Stakes** (called ‘bouchots’ in France) – This type of culture uses rows of wooden stakes driven into the lower tidal zone. Three to five metres of collecting rope or tubing filled with spat (larvae) are wrapped around the stake and attached. A net is then placed over the whole structure to keep the mussels from falling off.

- **Plots** (in the Netherlands, Ireland and the United Kingdom) – Juveniles are spread over plots in shallow water, generally in bays or sheltered areas on the ground.

Harvesting takes place 12 to 15 months later.

**Production and trade**

Worldwide, aquaculture accounts for 95% of mussel production. China and the EU are the two biggest mussel producers, followed by Chile and New Zealand. Most of the EU supply of mussels is produced locally. Chile and New Zealand are the two main suppliers of mussels to the EU, providing our market with frozen products which are used as raw material by the EU processing industry. Intra-EU trade is well developed with a value around half the total value of EU supply. There are major trade flows from Spain, the Netherlands and Denmark (wild mussels in the case of Denmark) to Belgium, France and Italy. The EU market for mussels is highly segmented with different prices and marketing seasons, depending on their origin. Exports from the EU are very limited, mainly to Switzerland and Russia.
Presentation on the market

Mussels are the most versatile shellfish species as regards presentation and packaging. They may be sold loose, in pre-packed mesh bags or in chilled, ready-to-use vacuum packs. In Spain, the larger Mediterranean mussels are frequently canned without their shells. Mussels are now being presented pre-cooked, with a range of dressings, in durable vacuum packs.

Nutritional value per 100 g
(average values for cooked mussels, *M. edulis*)

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<tr>
<td>Calories</td>
<td>103 kcal</td>
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<tr>
<td>Protein</td>
<td>17 g</td>
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<tr>
<td>Selenium</td>
<td>50 µg</td>
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<tr>
<td>Vitamin D</td>
<td>&lt; 0,5 µg</td>
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<tr>
<td>EPA</td>
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<td>DHA</td>
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EU mussel supply and trade* (2009)
(million EUR)

* from fishery and aquaculture.
Source: Eurostat.

EU mussel aquaculture production (2009)

- over 150 000 tonnes
- from 50 000 to 100 000 tonnes
- from 20 000 to 50 000 tonnes
- from 2 000 to 5 000 tonnes
- less than 1 000 tonnes

Source: Eurostat.

Mussels

Recipe for 4 people

- 4 kg mussels
- 600 g celery
- 600 g onions
- 100 g butter
- Water
- Chips

Spices for the mussels:
- 250 g salt
- 2 level teaspoons of crushed pepper (grey or white)
- 1 teaspoon of curry powder
- 1 teaspoon of powdered garlic
- 1 level teaspoon of celery salt
- 1 pinch of cayenne pepper

Instructions

1. Prepare the vegetables, wash them and chop into 3 mm slices.
2. Put 25 g of butter in a saucepan (if possible use an individual saucepan for each person), add 250 g of the mixed vegetables, then one kilo of the cleaned and washed mussels, add a teaspoon of the spice mixture, a soup spoon of water and finally the remaining 50 g of mixed vegetables.
3. Put a lid on the saucepan, cook on a high heat for 8 minutes, then shake or stir to mix.
4. Once the mussels have opened, serve them in the saucepan in which they were cooked, accompanied by the chips.

Recipe provided by Chef Jean Castadot (President of Euro-Toques Belgium)