



# Case Study: Menai Oysters and Mussels

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## Case Study: Menai Oysters and Mussels and Mussels

Menai Oysters and Mussels is a small family-owned company which operates along a stretch of coastline on the Anglesey side of the Menai Strait, North Wales.

The business began life in 1994, with the current, owner Shaun Krijnen, purchasing a small existing oyster farm. Over the next few years the number of oysters grown was gradually increased until at one point 1.5 million oysters were under cultivation. This level of stock proved costly to manage and a new method of operation was introduced. This new approach allowed a reduction in stock levels, without compromising supply, as well as a greatly reduced work load. As a result Menai Oysters and Mussels was able to diversify into mussels. Initially as a trial in 2000, the popularity of the mussels grew and it became apparent that full production of mussels to meet demand was the next avenue for the business. Securing more space on an old mussel bed was the key to facilitating this expansion. The bed was 'renovated', clearing it of old stock and reseeded with new. To aid this process a small mussel dredger was built by the owner. This enables management of the mussels as well as harvesting of the seed from Caernarfon Bay. In times of low seed supply in Caernarfon, mussels are purchased from another mussel company operating out of Bangor. The boat is then used to thin down the mussels to give them space to grow.

The business employs 4 local people to carry out the company's operations. Mr Krijnen with two employees carry out the farming work; one is a delivery driver and Shaun's mother manages the accounts of the business.

The business also has access to a qualified marine engineer, Shaun's father provides engineering advice to the business related to the boat and other aspects of the machinery involved.

The business operates in what is known as a 'several order'. This is a portion of the seabed that is set aside for the cultivation of specific shellfish species and conveys certain legal rights to the lessee, most importantly the ownership of the shellfish grown within it. The Menai Strait West Order is administered by the North Wales and North Western Sea Fisheries Committee.

### The Practice – Mussels

Seed mussels are collected locally from Caernarfon Bay, usually once a year and are re-laid on the farm. Generally the seed collected are mussels that are 10mm or more in length. The mussels are then allowed to grow and once a certain density is reached on the seabed they are thinned by use of the boat. This ensures maximum growth and production. After approximately two years the mussels are ready for harvest. This is currently done by hand and with specialised machinery. The mussels produce large quantities of soft mud that makes vehicle access very difficult, hence a special low-ground-pressure vehicle is used to take the mussels off the beach.



*Top: The company mussel dredger.*

*Source: Yvonne Jones Swansea University*

*Bottom: Re-laying seed mussels on the beach.*

*Source: Yvonne Jones Swansea University*



Production is 12 tonnes per month (sold weight) which equates to 18-20 tonnes picked. It is a good way to keep fit! One man picks, cleans and loads 500kg per 3-hour tide. The beach is worked every other week, when the tides are suitable for picking.

The harvested mussels are taken two miles (1km) inland to the farm owned by the company for grading and depuration.

Depuration is a process of cleansing the mussels by placing them in water that has been subject to UV sterilisation. Sea water is re-circulated through a tank which holds the live mussels. The mussels then open and filter in their normal way, but as there is no food in the water they are essentially purged and any potential harmful organisms are removed.

*It is required in the UK under the Shellfish Hygiene Directive which protects consumers of shellfish by laying down health conditions for the production and placing on the market of live bivalve molluscs intended for human consumption. The Directive stipulates that shellfish may only be harvested from areas that have been monitored and classified in accordance with a system administered by the Food Standards Agency. (DEFRA 2004)<sup>1</sup>*

*Bivalve production areas (including mussels and oysters) are classified according to the level of treatment they require prior to their sale. Local authorities collect this information and send it to the Food Standards Agency who compile a national picture. Standards are set in terms of concentrations of coliform bacteria and Salmonella. Harvesting sites are classified from A to C, where grade A sites don't require pre-treatment and grade C sites require intensive purification. (Environment Agency 2008)<sup>2</sup>*

As all sites in North Wales are classified B, depuration of the mussels and oysters produced there is required prior to human consumption if they are to be eaten 'fresh' from the shell.

<sup>1</sup> [http://www.defra.gov.uk/environment/water/industry/review/pdf/min\\_guidance.pdf](http://www.defra.gov.uk/environment/water/industry/review/pdf/min_guidance.pdf)

<sup>2</sup> [http://www.environment-agency.gov.uk/yourenv/eff/1190084/water/213925/578455/578553/578733/?version=1&lang=\\_e](http://www.environment-agency.gov.uk/yourenv/eff/1190084/water/213925/578455/578553/578733/?version=1&lang=_e)



## The practice – Oysters

The species farmed are Pacific Oysters due to their robustness and resistance to disease as well as the fact that they are fast growing. The stock is bought in from the Cumbria Sea Salter Hatchery in Northern England. Menai Oysters and Mussels produce 10-12 tonnes annually. This is somewhat less than the original start-up (25-30 tonnes) and reflects the fact that oysters cost more to produce than mussels and tend to be more difficult to market at the price the company needs for its product. Time is also a limiting factor in working the oysters when the company also has mussels to produce and work has to be organised within a tidal window for both species.

Oyster production is located away from the mussel beds to minimise the problems of mussel settlement within the oyster bags. Mussels settling in the oyster bags tend to compete for food and also bind the oysters together. This causes poor oyster growth.

Oysters are produced using the rack and bag system. Bags filled with oysters are grown on steel racks in the sea. This enables easier husbandry and allows oysters to be removed for grading on land rather than trying to sort the harvest during a tide.

Both oysters and mussels are marketed to the same customers and they range from Llandudno in North Wales to Newcastle in Northern England.

## Concerns and Challenges

Over-use of land-based machinery leads to damage of beds, and the ground becomes too soft to manage during low tides.

The amount of bureaucracy and red-tape is detrimental to the needs of the industry and in particular SMEs. For instance, a single European Directive used to cover shellfish; now more than 3 cover the same ground. Licensing for activities such a seed collection has become a 3-month process instead of 3 weeks, as various agencies must now be consulted about the activity. This is repeated every year for the same activities in the same location.

Negative public perceptions about the industry, and its perceived impact on environment and local landscape, have hampered attempts to expand. Mussel dredging is likened to other dredging activities (for example for aggregate or scallop) and therefore the perception is that to dredge means significant sea bed damage for little gain. Menai Oysters and Mussels believe that this couldn't be farther from the truth, and that their methods are probably the most environmentally friendly way of harvesting mussels.

## Future plans

Currently, the owner is applying for planning permission to expand the purification unit on his farm.