



The Prince Edward Island (PEI) cultured mussel industry is Canada's top producer and exporter of rope cultured blue mussel. PEI has earned its reputation for high quality standards based on the diligence and pride of Island growers, processors and industry stakeholders.

Production of PEI Mussels

Prince Edward Island's mussel culture industry has grown from a mere 88,000 pounds (40 tonnes) in 1980 to a staggering 37.6 million pounds (17, 052 tonnes) last year. The industry has become a vital sector of the local economy. The Island's mussel farmers lead the way producing approximately eighty percent of Canadian mussel production and 71 percent of North American production.

The PEI mussel farming industry uses the longline system. Mussels are held in suspension in socks (mesh sleeves) tied to anchored or moored buoy rope. Because they are suspended in the water column, the mussels have greater access to food, cleaner shells and are further away from bottom dwelling predators. The result is a high quality mussel renowned for its superior flavour.

The quality of PEI mussels is assured by the industry's advanced technology and through the joint shellfish monitoring programs conducted by the provincial and federal government departments.

Growing conditions

Mussels are grown in shallow bays and inlets on PEI ranging from estuaries on the east side of the Island to barrier beach lagoons on the north shore. Water temperatures range from -2°C in winter to 24°C or higher in the summer, while salinities range between 23 to 29 parts per thousand.

Seed Collection

A mussel farmer's production schedule usually begins with setting out seed collectors in the spring of the year. Seed collectors are usually frayed pieces of rope or strips of plastic mesh. Collectors are attached to the main buoyed line (backline) 30-50 cm apart and weighted to keep them vertically suspended in the water column. The collectors serve as a settlement surface for the billions of mussel larvae that swims naturally in the water. Growers keep a close eye on their lines as the mussel seed grows and add extra floatation to the backlines as needed to avoid mortality by predators or fall-off during storm events.



Figure 1: Mussel seed collectors on a back line

Socking the mussels

By the fall of the year the mussel seed will have grown to a size of 5 to 20 mm and socking season can begin. The mussel seed are stripped from the collectors, de-clumped and graded into uniform size classes before being placed into plastic mesh sleeves/tubes called socks. Generally, these activities occur in the fall of the year, although some mussel farmers prefer to sock in the spring.

The socks containing the mussels are then hung from longlines which are suspended along or below the water surface. Mussels socked in the fall will be sunk approximately six feet below the surface to avoid ice damage while over-wintering.

Caring for the mussels

Mussels are a naturally occurring shellfish in PEI waters. Everything that a mussel requires to survive and grow is supplied by the nutrients in the water column.

However, to ensure access to ample quantities of food and to protect the mussels from predators, mussel farmers must continually care for their crop.

As the crop grows and the mussel socks gain weight the mussel farmer is busy adding floatation to the longlines. Mussel farmers must also regularly inspect and clean the socks to ensure the mussels can access the food in the water column and that predators like crabs and starfish are not eating the mussels.

Shortly after the start of the fall socking season, migrating flocks of sea ducks stop in PEI en route to over-wintering grounds further south. Mussel growers in several areas must spend a lot of time protecting their seed crop from these hungry predators.



Figure 2: Socking the mussels



Figure 3: Harvesting mussels through the ice

stored in insulated plastic boxes that protect the product from wind-chill.

During the rest of the year, mussels are harvested in open water by boats equipped with a boom and a hydraulic winch. The backline is partially lifted out of the water and the socks are severed from the backline and hauled into the boat. To minimize losses, the boat may be equipped with an aluminum chute to guide the longline and socks onboard.

Harvesting

After 18 to 24 months the mussels reach a marketable size of 55-60 mm. At this point harvest-ready longlines can contain upwards of 2 tonnes of mussels each.

In winter, PEI bays and estuaries are covered in ice (upwards of 125 cm or 4 ft). As a result, mussel longlines are sunk approximately 190 cm or 6 ft below the surface. Lines destined for harvest over the winter are marked with ice-poles. Specialized techniques are used to harvest mussels through the ice. Growers use chain saws and special blades to cut through the ice. A SCUBA diver ties a line from a winch over an A-frame to the longline and then releases the longline from its moorings. The line is hauled up through the ice by a portable winch. Mussels are cut from the backline and

Processing

Once harvested, mussels are transported to federally inspected processing plants where they are stripped from the sock, de-clumped, washed, graded and have their beards (byssal threads used to attach to substrates) removed. The mussels are inspected and any broken or substandard shells are removed prior to being packed for shipping to markets all over North America. Currently there are seven provincially licensed and federally registered mussel processing plants on PEI.

PEI has developed a reputation for high quality mussels based on the hard work of growers, processors,

both levels of government and the private sector. This effort will ensure that PEI mussels remain a highly recognized product with a substantial share in the market place.



Figure 4: Mussels being graded during processing