

Irish Mussel Seed Company Code of Practice

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Overview

Irish Mussel Seed Company aims to be responsible custodians to any resource that they use. Through this Code of Practice Irish Mussel Seed Company seek to minimise adverse effects on other sea users and enhance its provision of positive defined standards while still maintaining a viable industry, providing employment for Irish residents and producing a quality product.

This document is a practical 'living document' and will require regular review. IMSC will update this document throughout the year as required or at least annually. It is intended to reflect a practical approach to a working farm and as experience builds so to will the effectiveness of the management practices of IMSC contained herein.

IMSC will work towards becoming compliant with Certified Quality Aquaculture (CQA) Standard as promoted by BIM. This standard represents best industry practice and is regularly reviewed. It is appropriate for industry throughout the food chain and is an elected standard.

This code of practice focuses on identifying any risks associated to the structures which will be deployed and the management practices set to minimise these risks. Each element of the long line design is considered as follows;

Anchoring System

Movement of Farm anchoring systems may move the farm outside the area of resource consent, potentially impacting on sensitive environments. Loss or failure of an anchor is also costly to IMSC. To prevent farm movement, anchor design and selection is paramount. Account has been taken of sea bed, currents, water depth and size of farm. IMSC have chosen screw anchors from Fielder Marine. Fielder Marine will install all anchors and certify that they are installed correctly. Anchors in the mussel spat collection and on-growing industry have constantly been refined and strengthened as the industry has developed and considerable experience now exists within the industry on anchor design.

Management Practices

- Secure all mussel farm materials to best industry practice to prevent loss to the environment.
- Retrieve any non-natural materials (e.g. floats, ropes, droppers, anchors) no longer required from the marine environment.
- A member of Fielder Marine (Experienced Mussel Farmer) will work with IMSC for the first two years to oversee the day to day operations and train IMSC staff on anchor installation and maintenance.
- IMSC staff are and will be trained to identify and rectify any issues with regard to malfunction of anchors as this will evidence itself on reliant surface equipment. Daily observation of the site, weather permitting is standard practice.

Warp and Backbone Ropes

Anchor warp and backbone or long line ropes are synthetic ropes designed to last for long periods with only minimal maintenance. Warp ropes usually lasts for at least 12 years and backbones in excess of 3-5 harvest cycles. Recent developments in rope design have resulted in ropes that will last even longer. Similar to anchor design, the choice of rope diameter must reflect local conditions such as tidal current and wave action. Industry have built up considerable experience in appropriate diameters for various conditions and IMSC have drawn on that experience to identify the most suitable rope variation which is reflective of local conditions.

Environmental Aspects

Any impact on the marine environment is due to encrusting organisms that settle on the ropes and are removed during harvesting or periodic cleaning and drop to the sea floor below the mussel farm.

Management Practices

- Ensure warp and backbone ropes are of a sufficient specification and condition to prevent breaking under prevailing environmental conditions.
- Do not dispose of any non-natural material into the marine environment
- Maintain all structures to ensure that they are restrained, secure and in working order at all times so as not to create a navigational hazard.
- Should a long-line become dislodged or damaged, the second anchor and breaker lines installed on the farm should be sufficient to secure the long-line from drifting until IMSC can physically reach the damaged line.

Navigation Lights, Reflectors and Floats

The Commissioner of Irish Lights is responsible for commenting on navigational related matters for resource consent applications and for prescribing standards and requirements for navigational aids. IMSC will comply with any requirements of installation and maintenance that are given with regard to navigational aids as part of this licence. The Navigational equipment being used by IMSC has been recommended by Irish Lights and therefore is in accordance with all requirements.

Float Management

Mussel floats are the most visible part of a mussel farm (with the exception of navigational markings). IMSC will deploy floats that are battleship grey in colour in order to reduce visual impact. The number of floats used varies depending on the growth stage of the crop. Over the time of the mussel growth, extra floats will be added to the lines to offset the weight increase.

Floats that become unattached (damaged or otherwise) impact on the marine environment therefore will be retrieved for appropriate repair or disposal on land.

Operator Management Practices

- Locate structures and maintain boundaries in compliance with the licence.
- Locate install and maintain navigational aids in accordance with directions of the Commissioner for Irish Lights.
- Maintain all structures to ensure that they are restrained, secure and in working order at all times so as not to create a navigational hazard.
- IMSC will permanently brand each buoy with IMSC identification mark.

Spat Catching Materials

Catching spat involves the placement of a line into the water column during periods when and where spat are known to settle.

Environmental Aspects

Environmental impacts may occur if spat catching materials are lost to the marine environment.

Operator Management Practices

- Use spat catching methods that do not require separate weights.
- Secure all mussel farm materials to best industry practice to prevent loss to the environment
- Retrieve any non-natural materials (e.g. floats, ropes, droppers, anchors) no longer required from the marine environment.
- Wherever possible repair, reuse or retain non-natural materials on board for appropriate disposal on land.

Predators

Species other than blue mussel frequently settle and grow on spat catching lines e.g. starfish. This over-settlement can reduce the volume and growth rate of the mussel crop and because non-target species often have to be hand sorted, it can substantially increase the operating hours involved in harvesting and processing. IMSC have watched the growth of mussel in and around the area and have recorded no predatory starfish for 2017, 2016 and 2015. That is not to say that starfish may not occur in another year. Over settled species may be discarded into the marine environment.

Operator Management Practices

Minimise organic material discarded into the environment by adopting best farming practices, keeping equipment clean and limiting encrusting by unwanted organisms. In similar farms in Cork starfish are very prevalent and the operators have found that timing the deployment of spat-collectors can reduce the density of starfish settlement.

IMSC will coordinate the quantity of mussels grown with the projected demand.

Cleaning of Ropes and Floats During Harvest

During harvesting, encrusting organisms are cleaned from floats and backbone ropes using scrapers. Floats are later removed for storage until the next season.

Wash-water during harvest

Water is used to remove marine organisms and sediment from the final crop mussels during harvest. The wash-water and associated material cleaned from the lines is discharged overboard while harvesting is in progress.

Environmental aspects

In most instances, the discharge during harvest creates a visible plume of muddy water which is carried away from the harvester by tidal currents, wind and wave action. This plume consists of organic material which has naturally settled on the spat collectors and will naturally settle on the sea floor once removed. From testing floating structures placed in and around the site (e.g. yacht buoys) the lines appear to be very clear however mussel lines accumulate sediment which is naturally present in the water column, so the effects of mussel lines are related to changing the timing and intensity of sediment flows rather than increasing the total amount of sediment released.

Operator Management Practices

It is in IMSC best interest to maintain water quality because it reflects on the product.

- Ensure that, other than those authorised in association with the normal operation of the mussel farm, there is no discharge of contaminants such as oil, diesel, petrol or effluent to the coastal marine area as a result of the exercise of the licence.
- Adopt good management practices in relation to storage and use of chemicals and fuels on board including;
 - Use appropriate, quality containers.

- Store in contained areas (to avoid spills into the marine environment or bilge system)
- Only carry quantities required.
- Refuel at approved areas and supervise refuelling at all times
- Keep absorbent material on board to absorb on board spills (e.g. spill kit)

GPS & Surveillance equipment

Although every effort will be made to ensure that the integrity of the mussel farm is maintained (as it is in the applicant's interest not to lose harvest or equipment) it is not possible to account for all eventualities and nature.

To account for this, surveillance and GPS equipment will be installed on the site. The surveillance system will consist of six cameras around the perimeter. These cameras will watch the site 24 hours per day seven days per week. Up to 4 weeks data will be stored on a local DVR system. The cameras can be accessed any time remotely by computer or phone. A wireless modem will be utilised to transmit the footage. The site integrity will be checked daily; during or after a storm event if any issues were to arise a vessel will be deployed at the earliest opportunity to ensure the impact is minimal.

The GPS system will ensure that any movement of the mussel farm will be picked up. A tolerance is applied to the position of the mussel farm. Once the GPS device moves beyond this tolerance a warning signal is activated and transmitted via the wireless modem to the desired location in the form of an email notification. The appropriate action can then be taken. It should be noted that these precautions are a 'fail safe system' that is to be employed.

This measure is not a replacement for the proper management of the licenced site but merely a use of technology which may save IMSC time should, as mentioned, a buoy become loose etc.

Incident Procedure

- Maintain all structures to ensure that they are restrained, secure and in working order at all times so as not to create a navigational hazard.
- Should any part of the marine farming structures be lost to the marine environment that is of a size that could constitute a navigational or safety hazard inform the appropriate authority and the local harbour master immediately. Take all practical steps to find and retrieve the lost structure.
- Inform the Harbourmaster of any known failures of mussel farm navigational aids.
- Permanently brand each buoy within the mussel farm with owners identification mark.
- Maintain a log book on board all mussel farm vessels to record the details of any navigational incidences or complaints in relation to navigation or boat operation. Record time of incident, vessels involved, and injuries or damage and actions taken.
- When any navigational issues arise, work cooperatively with the Harbourmaster to resolve those issues.
- Make a submission to the Commissioner of Irish Lights when navigational safety is identified as an issue.

Recordkeeping

- Internal audits shall be carried out by competent personnel.
- IMSC shall be in possession and make available on request all relevant licences and permissions as specified by relevant authorities.
- Once it is observed that an instillation has become unstable or broken down it is the duty of Irish Mussel Seed Company Limited to record this incident and log any damage that has occurred and how this has been resolved. This record will be kept and made available for any inspection.
- Maintenance of the farm, time and date, when long lines were checked and any elements which needed repairing or replacing will also be recorded and made available upon inspection.
- Upon installation IMSC agree to have the entire instillation certified by a chartered engineer along anchor installers, Fielder Marine. In year two and on a yearly basis subsequent to this all elements will again be inspected by a chartered engineer and the records of same made available upon inspection or request from the relevant authorities. Fielder Marine maintains anchors and carries out yearly inspections.
- Record of transfer of seed to clients and ongrowing farms will be made available to the relevant authorities and all legal requirements regarding the transfer of seed will be complied with. Request will be submitted to the Marine Institute for every transfer and as required.
- For Biosecurity purposes it is the responsibility of Irish Mussel Seed Company to maintain and make available to the relevant authority and client a Biosecurity Log Book to include:

Stock inspection carried out by	Salinity
Water quality	Mortality count
Temperature	Notes (any notable difference in the stock)
O2	Time and Date

Safety of staff during daily maintenance, harvesting and transfer of seed operations

- The applicant shall comply with health and safety legislation and produce a written health and safety statement.
- All IMSC staff will be provided with the appropriate PPE and have all necessary qualifications and certifications which allow them to work safely and efficiently for IMSC in the marine environment. Safety of our employees and the environment are paramount to IMSC.
- Continuous Professional Development will be promoted within IMSC.
- There shall be documented general duties or work instructions in place and communicated to all staff involved with activities relating to food safety, legality and the requirement of this standard.
- IMSC will have documented and clearly defined employee responsibilities and these shall be communicated to key staff with responsibility for processes critical to food safety, legality and the requirement of this standard

Vessels

All IMSC Vessels owned or operated by IMSC will have the relevant Code of Practice and all PPE on board.