



Centre for Environment
Fisheries & Aquaculture
Science



Cefas

Shellfish Biosecurity Measures Plan

Aquaculture Production Business Name: UKSA

Aquaculture Production Business Address:

Aquaculture Production Business Authorisation Number:



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Cefas would like to thank the Environment Agency for their permission to use an example from their farm Biosecurity Measures Plan (BMP).

This publication is also available at: www.gov.uk/guidance/prevent-fish-or-shellfish-diseases

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Introduction

The application of biosecurity in aquaculture is a shared responsibility where each individual involved, plays a different but critical role in the implementation of the overall programme. In order to be effective, biosecurity is necessary at all levels within the aquaculture industry, from the control of the spread of infectious disease at an international level to the development of national protocols and the operation of suitable practices at a local level. In these terms, the World Organisation for Animal Health (OIE) monitors the international status of diseases, our government (through Cefas) is responsible for controlling biosecurity within national limits, and Aquaculture Production Businesses (APBs) are responsible for biosecurity within their enterprises.



The key elements of biosecurity include: practical and appropriate legislative controls, adequate diagnostic and detection methods for infectious diseases, disinfection and pathogen eradication methods, reliable high quality sources of stock; and best management practices.

At the local level, implementation of an effective biosecurity measures plan is essential in reducing the risk of disease introduction to an APB. This follows the fundamental principle that prevention is better than the cure, which is also a cornerstone of the GB Animal Health & Welfare Strategy published in June 2004. In addition, it is widely accepted that fish disease prevention is cheaper than the cure.

In the context of shellfish farming, disease prevention is the only effective measure. Once a disease is present within a harvesting area it is difficult to control and there is little possibility of eradication. There are many examples throughout the world where introduced diseases have had devastating effects on sectors of the shellfish farming industry. The spread of *Bonamia* in native oysters within the UK is just one example.

The Aquatic Animal Health (England and Wales) Regulations 2009, recognises the importance of effective biosecurity measures in restricting the spread of disease. It requires APB operators to implement a biosecurity measures plan as a condition of their authorisation.

These guidelines are designed to help the APB operator identify biosecurity measures that might be applicable to their site. It describes biosecurity measures that can be implemented at shellfish farms and includes a template to enable APB operators to develop and operate a meaningful plan of their own.

Identifying suitable biosecurity measures

It is recognised that it is much simpler to apply meaningful biosecurity measures in intensive small-scale systems than in open marine environments. However there are suitable measures and simple elements that can be applied in these areas. Areas to minimise risks of introducing and spreading disease are listed below:

- Identification and use of reliable sources of stock.
- Application of good management practices.
- Effective disease recognition and diagnosis.
- Identification of effective measures to take in the event of a disease outbreak or other unknown mortality.

Appointing a biosecurity manager

Identify an individual with the responsibility to ensure biosecurity measures are implemented at an APB, or over several APBs if the business is made up of more than one site. The biosecurity manager is responsible for producing and maintaining a biosecurity measures plan, as well as demonstrating its effectiveness through use of good record keeping (see Section 7). Additional responsibilities include ensuring staff are trained in biosecurity issues and visitors are aware of measures that apply to them. It is good practice to appoint a deputy in the event that the manager is unavailable.

Be aware of diseases that can affect your stock

It is useful for farmers to be aware of diseases that can potentially affect their stock, clinical signs of infection, times of the year that diseases may occur and the conditions that cause clinical disease.

Shellfish diseases information can be found in a variety of sources:

- Textbooks on shellfish cultivation/diseases.
- Periodicals (Shellfish News, Fish Farming International etc.).
- Disease recognition leaflets.
- Internet – further information is available on the Cefas FHI website ([www. efishbusiness.co.uk](http://www.efishbusiness.co.uk)).

Identify the risk of contracting and spreading disease with movements of live shellfish

In addition to the risk of introducing disease through shellfish movements, there are other routes by which disease can be introduced and spread within a farm. A comprehensive biosecurity measures plan should cover these risks.

Some areas for consideration are:

- Use of shared equipment and boats.
- Visitors to the site.
- Access to the site by other water users.

Risk limitation measures

Once risks are identified the biosecurity manager should decide on appropriate systems and procedures to control or reduce these risks. Such measures may include:

- Early disease identification through regular stock inspections.
- Staff training to recognise disease signs.
- Ensure the cultivation method is suitable for the species being held.
- Limit farm access to staff and authorised personnel.
- Identify and set up zones within the farm, e.g. nursery area, on-growing sites, packing and storage areas.
- Consider the use of suitable disinfectants, where appropriate.

Monitoring the plan

Once procedures and measures are decided, it is useful to maintain a clear recording system for the results of checks made and actions taken. Accurate recording will help the biosecurity manager to make informed decisions and take appropriate action when a disease or breach of biosecurity occurs. Listed below are examples of information to be recorded in the log:

Stock inspections

- Routine inspections should be an essential activity on a shellfish farm.

- Keeping an inspection log is highly recommended. This should record any mortalities observed during stock inspections or following routine farm procedures (grading, sorting, harvesting, etc.).
- Establish a formal chain of reporting to ensure the biosecurity manager is quickly informed of any potential problems.

Visitor details

- Keep a record of all farm visitors.
- Ensure visitors are aware of biosecurity measures that apply to them.

Disinfection / cleaning procedures

- Record when disinfectants are used, including dates of disposal. Disinfectant solutions need to be replaced before they lose efficacy.

Other useful biosecurity information to be recorded

- Movements on and off site: a condition of authorisation requires records to be kept for all movements to the farm from and to anywhere outside the harvesting area.
- Movements within the site: more detailed records of movements of shellfish may have to be kept for hygiene purposes. These provide a useful resource when identifying the cause of any mortality event in the farmed stock.
- Details of significant weather conditions, particularly temperature and rainfall.

Contingency planning

When problems are identified they should be recorded in the biosecurity log. There should be a system in place that allows the problem to be addressed. All staff should be aware of the appropriate course of action when problems are identified. The protocol should cover the following areas:

Identification of a problem

- Routine monitoring, recording and passing on information of the shellfish stocks through the management chain (Outlined in Section 6) enable the biosecurity manager to identify and deal with any problems at the earliest opportunity. It is advisable that actions to be taken by the biosecurity manager at the onset of a problem have been considered in advance, i.e. contingency plans are prepared before the problem arises.

Identification of a problem that is due to seasonal or weather conditions

- The biosecurity measures plan can include consideration of climatic and seasonal conditions that cause problems with the farmed stock, and the actions that can be taken to limit these effects.

Identification of a problem that is more serious; where mortalities in the farmed stock cannot be explained

- Cefas FHI should be contacted at the earliest opportunity.

Control the spread of a problem

- If a disease is suspected action should be taken to attempt to limit the spread of infection through the farm. This is easier to achieve if the farm is separated into sections or zones, (outlined in Section 5).

Biosecurity measures plan template

- The biosecurity measures plan template covers all sections required to provide effective biosecurity at an APB. This template may be completed by the biosecurity manager.
- An electronic version is available from www.efishbusiness.co.uk.

BIOSECURITY MEASURES PLAN (IMPORTERS)

Site/Business Name	UKSA
Authorisation Number	

Biosecurity Manager Details:

Name	
Contact Details	
Alternative Contact Name	
Alternative Contact Details	

Responsible Person signature:

Name:

Date:

Inspector signature:

Name:

Date:

Useful Contacts

	CEFAS	Fish Health Professional	Veterinarian
Business Name	Fish Health Inspectorate		
Business contact	Fish Health Inspectorate		
Telephone	01305 206700		
Email	fhi@cefass.co.uk		
Address	FHI CEFAS Barrack Road Weymouth Dorset DT4 8UB		

Staff training

Staff name	Date trained	Signature of biosecurity manager
		Inform Cefas to arrange for disease testing if there are no abiotic anomalies, known anthropogenic input events or prolonged extreme weather events.

Identified Biosecurity Risks and Limitation Measures

	Identified Risk	Probability (high/med./low)	Impact	Risk Limitation Measure
1	Infectious agent transferred by movement of live shellfish onto site	High	High	Before introducing any shellfish into the farm discuss the condition and provenance of the stocks with the supplier. If there are any doubts do not introduce the shellfish.
	As above			When possible, we will visit the site of any proposed source of shellfish to inspect the stock visually.
	As above			We will not accept batches of shellfish onto the site if they are showing signs of any infection or unaccounted mortality.
	As above			Examine the stock on site on a daily basis. Remove mortalities and dispose of in a way that does not increase the risk of spread of infection to other stock. Mortalities in each batch recorded in work diary.

	As above			<p>We will maintain our awareness of diseases that have serious implications for the operation and reputation of the business. Further details on disease designations are found at:</p> <p>https://www.gov.uk/guidance/prevent-fish-or-shellfish-diseases</p>
	As above			Record all shellfish movements to allow proper traceability onto and off site (movement book)
	As above			If suspicion of ill health/disease withhold shellfish from sale until condition is diagnosed/cured
2	Infectious Agent transferred to or from the site via water or equipment	Medium	High	Equipment used on other sites to be restricted from entering farm. If this is necessary then ensure they are cleaned and disinfected first.
3	Change in environmental conditions	High	High	Monitor conditions and where possible do not transfer or grade shellfish at periods likely to be stressful (e.g. high temperatures and spring tides).

	As above			Record details of observations in diary and use these to inform future decisions.
4	Introduction of non-native or invasive species	Medium	High	Any introduction of new stock or equipment to existing APBs should be examined for the presence of any other species.

Monitoring the Plan

Stock health inspection	Record observations of stock health in logbook / diary.
Mortality levels in each batch or zone	Observed mortalities recorded in work diary
Results of health inspections	Keep all documents from Cefas, private consultants reports etc
Visitors to the APB	Restrict access to farm facilities - no access except for approved visitors
Shellfish movements on and off site	Record in Cefas movement books
Shellfish movements within the site	Record details of stock movements or where batches are combined.
Disposal of waste	Dispose of waste and (where appropriate) effluent water in accordance with the relevant local environmental health rules.
Water quality	Monitor and record significant changes.

Actions to Take in the Event of Clinical Disease

Record	Action to Take
<p>Mortality or a sudden increase in mortality seen in batch of shellfish. Identification of a known problem</p>	<p>Inform Cefas of mortality event(s). Due to the difficulty in identifying exact causes of mortalities in native oyster populations the environmental conditions will be assessed and continuing assessments will be made. If mortality events persist disease screening may be required. If no disease is found to be prevalent then it may be that the site is deemed unfit for purpose and activities may have to cease.</p>
<p>Continuing unexplained mortality</p>	<p>Inform Cefas to arrange for disease screening.</p>
<p>Need to dispose of dead shellfish</p>	<p>Identify a suitable and legal way to dispose of waste from the site, try to avoid long-term storage of this material.</p>

This section is for completion of shellfish importers only

Please provide all current import suppliers below (this will be reviewed annually at every inspection for accuracy):

Name of site	Country

CONTINGENCY PLANNING AND EMERGENCY RESPONSE – MOLLUSC FARMING AND PROCESSING

The Fish Health Inspectorate use a range of strategies to limit the introduction and spread of aquatic animal diseases which include disease surveillance, animal movement regulations, zoning and culling of aquatic animal populations when disease outbreaks occur.

The eradication of certain mollusc diseases is rarely attempted because populations cannot be removed from open-water systems. However, this short questionnaire is designed to assess individual site capacity to cull, clear and disinfect sites in the event of an outbreak of serious (exotic notifiable) disease. Where this is not possible, the data provided will be used to formulate an alternative contingency plan which we will keep you informed of so that you know what kind of actions to expect from us in the event of a serious disease outbreak on your farm.

Site name: UKSA
Laboratory Reference Number:
EW Code:
Date:
<u>Holding system(s)</u> – please tick which system applies to your farm
Shellfish Beds
Depuration Facility
Trestles/Trays
Floating rafts ✓

Other (describe) :

Holding capacity and stock density

What is the total maximum quantity of stock that can be held on the site at any one time?

30,000 juvenile *Ostrea edulis* with the current proposal. Up to 1000 individuals will be held in a single AP6 unit and the site has a maximum anticipated capacity of 30 units.

Over what area is the stock held and farmed on site (in m² or hectares)?

One pontoon at present with the current proposal.

Wild stocks

If the site is open to the environment, are there wild mollusc species present that are susceptible to listed diseases?

If yes please circle which species from the list below:

Pacific oyster / Native oyster / Blue mussel / American hard clam (Northern quahog) /
Manila clam /

Scallops / Cockles

Processing and waste

Can your farm process large volumes of its own shellfish for sending for human consumption either directly or through a depuration unit within the catchment or mollusc farming areas (Y/N) ?

This is not applicable as there is no intention for any shellfish from this facility to go to market for human consumption.

If no to the above, do you send stock to depuration outside of the mollusc farming area (Y/N) ?
N/A

Where and how do you currently dispose of dead shellfish?

Shell material from the Solent Oyster Restoration project is removed from the body of water and aquaculture systems and taken to the University of Portsmouth's Institute of Marine Sciences.

It is either allowed to cure (in sunlight and rainwater) for a minimum of six, ideally 12, months or manually cleaned with bleach or alternatives before being used in restoration activities within the Solent.

Flesh is disposed of in general waste away from areas where it may leach into the waterbody.

It is the intention to follow this procedure to allow any shell or flesh material from this facility.

Equipment

List the equipment on site that can be utilised if a rapid stock cull is required; include boats, dredging equipment and plant machinery and please state the equipment's capacity

None needed as the systems can be removed by hand.

To be completed by inspector

Category 1

Depopulate and drain 1-2 days, complete disinfection < 1 week

Category 2

Depopulate and Example: A recirculation site, fully enclosed, offline, does not discharge into open waters, low organic load and build-up, filtration and pipework can be readily dismantled, good access. This could be a part of a hatchery or depuration unit that is fully isolated.

drain 1-5 days, complete disinfection 1 week - 30 days

Example: A recirculation site, fully enclosed, online and that will need further mitigation or consent to discharge into the estuary, does discharge directly into an estuary, low organic load and build-up, filtration and pipework can be readily dismantled, good access. This could be a part of a hatchery or depuration unit that can be isolated. Controls would only be lifted if all conditions are met

Category 3

Depopulate and disinfection 30 - 60 days

Example: Shellfish beds etc where all equipment can be removed and animals are contained within structures such as bags and trestles, no other farms or wild populations with susceptible species are present within 2 tidal excursions.

This site would remain under a controlled zone for the disease in question due to the nature of the activity.

Category 4

Depopulate and disinfection partly possible > 60 days

Example: Shellfish contained within bags on trestles in an estuary where there are other farms in the same area that hold susceptible species. Equipment can be removed, and disinfected but susceptible species are already present in the area.

This site would remain under a controlled zone for the disease in question due to the nature of the activity.

Category 5

Depopulate and disinfection not possible

Example: Extensive shellfish beds/trestles in an estuary that cannot be isolated and where there are other farms in the same area that hold susceptible species. Equipment can be removed, and disinfected but wild susceptible species are already present in the area.

This site would remain under a controlled zone for the disease in question due to the nature of the activity.