



Code of Good Practice

Chapter 1: Broodstock Sites



code of
good practice
scottish finfish aquaculture

CHAPTER 1: BROODSTOCK SITES

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AMENDMENT CONTROL: BROODSTOCK SITES

The CoGP will be reviewed and updated, as necessary, to ensure it continues to take account of current developments in technology and best practice.

All companies participating in the Code will be advised of changes as they occur. The version of the Code accessible on www.thecodeofgoodpractice.co.uk is current and includes all material updates to the Broodstock Chapter as listed below.

Amendment date	Section N°/Topic

CHAPTER 1: BROODSTOCK SITES



Many of the activities carried out on broodstock farms are regulated under European, UK and Scottish law. The undernoted provisions are additional to legal requirements.

General Note: *Because of their location and the way in which broodstock sites are managed and operated, the undernoted provisions will normally be audited as an adjunct to the associated freshwater or seawater farm audit. As a consequence, the provisions that apply to freshwater sites or seawater sites also apply to any associated broodstock sites.*

1 FISH HEALTH AND BIOSECURITY

Key Principles of Fish Health and Biosecurity Management

- 1.1 Strict biosecurity procedures, as defined in the farm's VHP and BP, should be followed at all times.
- 1.2 New pen or marine-linked land-based broodstock sites established after 2010 should be located more than two tidal excursions away from any production farms. If, through an appropriate risk assessment (which gives due consideration to relevant hydrodynamic information), it can be shown that the risk of spread of pathogens is satisfactorily low, and all farmers within the Farm Management Area agree, the establishment of such a site within two tidal excursions may be acceptable.

Broodstock Origin

- 1.3 Proposals to import broodstock should be underpinned by a documented risk assessment.

- 1.4 Fish should only be imported if the outcome of the documented risk assessment is satisfactory.
- 1.5 Farmers should obtain appropriate certification to show that stock to be imported is free from pathogens, other than those for listed diseases, relevant to the species concerned and to other susceptible species.
- 1.6 All imported broodstock should be held in quarantine in a land-based site with appropriate effluent disinfection.
- 1.7 The health of fish should be monitored for a period not less than 3 months.
- 1.8 While imported fish are being held in quarantine, testing for listed, notifiable and other potentially serious diseases should be carried out on all dead fish and any fish showing signs of morbidity. After 3 months, quarantine conditions may only be relaxed if the results of such tests are negative.
- 1.9 Movements of live broodstock and their gametes should only take place on the basis of a satisfactory outcome of a documented risk assessment.
- 1.10 While wild-caught marine fish are being held in quarantine, testing for listed, notifiable and other potentially serious diseases should be undertaken on all dead fish and fish that show signs of morbidity.
- 1.11 Transgenic finfish should not be used.

Disease Control - Stripping and Production of Gametes

- 1.12 Where health testing of broodstock is feasible (i.e. where non-destructive testing methods are available, or where fish are to be culled at the time of stripping), farmers should identify serious vertically transmissible pathogens of the species concerned and:

- 1.12.1 Test all of the stripped fish, either individually or in pools;
 - 1.12.2 Hold the gametes under biosecure conditions while tests are being conducted;
 - 1.12.3 If test results are positive, destroy the gametes/cull progeny emanating from infected fish.
- 1.13** Where testing of broodstock is not feasible (e.g. where non-destructive test methods are not available for marine finfish species which spawn repeatedly throughout their lifespan) farmers should identify serious vertically transmissible pathogens of the species concerned and:
- 1.13.1 Test at least 150 of the progeny derived from each batch of eggs;
 - 1.13.2 Maintain batches of fish under biosecure conditions while tests are conducted;
 - 1.13.3 If test results are positive, cull the infected batches of fish.

When broodstock are being stripped:

- 1.14** Contamination of eggs and milt with urine, faeces and blood should be avoided.
- 1.15** Eggs should be disinfected using an appropriate disinfectant applied in accordance with the manufacturer's instructions.
- 1.16** With respect to personnel, clothing, personal protective equipment and other equipment, strict protocols and high standards of hygiene should be applied at each stage of the stripping and fertilisation process.
- 1.17** To maintain biosecurity and prevent the spread of pathogens, broodstock and juveniles should be physically separated.

1.18 Trout broodstock which have been reared in sea water should be stripped on the seawater site and only disinfected fertilised trout eggs transferred to fresh water.

Broodstock Movements

1.19 Where live fish are to be moved into a seawater broodstock farm from another seawater farm, the seawater broodstock farm should be at least two tidal excursions from any other farm, harvesting station or processing plant.

1.20 Broodstock should be inspected daily by suitably qualified and experienced persons, with health checks being appropriate to species and potential health issues.

1.21 Fish placed on broodstock sites should not leave these sites for ongrowing elsewhere.

1.22 Where it is proposed to move salmon broodstock from sea water to fresh water, this should be based on a satisfactory outcome from a documented risk assessment.

2 FISH WELFARE AND CARE

Broodstock and Sea Lice

2.1 Broodstock, particularly those reared in shore-based tanks where direct observation of lice on fish is possible, should have lice numbers visually assessed weekly.

2.2 If visual inspection of broodstock indicates increasing numbers of lice, lice present on individual fish should be counted as per the suggested protocol below and numbers recorded. *(Note: Weekly counting and recording of sea*

lice is a requirement of Scottish law. These legal requirements are based on the provisions of the original Code, from which they were drawn).

Suggested Protocol for Counting Sea Lice

- i) Pens and fish should be sampled at random.
- ii) Personnel carrying out lice counts should have appropriate training in lice recognition and recording, and demonstrate post-training competence.
- iii) Where there are more than five pens per site, five fish should be sampled from each of five pens to give a total of 25 fish.
- iv) Where a site contains less than five pens, all pens should be sampled to give a total of 25 fish. A similar number of fish should be selected from each pen.
- v) Fish should be netted from the pen and put straight into the anaesthetic.
- vi) Each life cycle stage of *Lepeophtheirus salmonis* should be counted in turn, i.e. adult females, mobiles, chalimus. All identifiable stages of *Caligus elongatus* should be grouped together.
- vii) After completing the lice counts on the fish from each pen, the tub containing the anaesthetic should be examined for sea lice which may have been shed from the fish and any lice found should be added to the total.
- viii) The name of the person carrying out the counts, the date, the pen number and the water temperature at a depth appropriate to the depth of the pens used on the site should be recorded.
- ix) Minimum recording requirements during sea lice counts are *L. salmonis* chalimus, mobiles and adult females (with or without egg strings) plus all identifiable stages of *C. elongatus* grouped together.

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Alternative defined and recorded sampling regimes are acceptable provided that they:

- i) produce reproducible estimates of lice numbers on fish held on the farms;
- ii) that the results are periodically benchmarked against data gathered using the suggested protocol set out above.

2.3 Where appropriate, and based on veterinary advice, the fish should be treated.

Breeding

2.4 Handling of broodstock should be kept to a minimum.

2.5 Procedures should only be carried out by properly trained and competent personnel

2.6 Live fish that are to be stripped of eggs or milt should be properly anaesthetised and handled carefully at all times.

2.7 The use of anaesthetics should be addressed in the VHP and BP.

2.8 Repeat-spawners that are regularly removed from the broodstock population should be appropriately marked (e.g. pit tagging) by trained personnel so that individual fish can easily be located and stress to other fish minimised.

2.9 If broodstock are to be culled, this should be done prior to stripping.

2.10 Culling methods should be appropriate to the species.

2.11 Culling methods should result in rapid and irreversible loss of consciousness.

3 FEED AND FEEDING



Fish feed manufacturing is a specialist sector of the feed manufacturing industry. Fish farmers will therefore generally source their feed through specialist commercial suppliers, who must operate within the relevant feed legislation and strict regulatory controls. That situation is therefore reflected in this section of the Code.

Feed Formulation

- 3.1** Where fish, or parts of fish, are to be used to feed broodstock, these should be pasteurised, irradiated or otherwise processed to a standard that ensures that the feed is microbiologically safe.

***** END *****