QUALITY TROUT UK

COMBINED FARM & HATCHERY CERTIFICATION STANDARDS

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1.0 Introduction

This document defines the standards and the operational procedures and practices for production of farmed trout which must be met and maintained by participants in the Certification Scheme for Quality Trout UK.

Quality Trout UK Ltd, and the QTUK Standard, were established by the UK trout industry for the UK trout industry in 2000. The Scheme is operated and managed by the UK trout farming industry on a not for profit basis.

The Board of QTUK Ltd intends this Standard to be a production manual of relevance for the entire trout farming industry. Whilst only those sites that undergo the audit process may claim to be members of the QTUK Scheme and therefore QTUK compliant, the Standard is nonetheless intended to be read more widely than by only those who supply retail multiples or must demonstrate supply chain traceability.

This Standard has been endorsed by the British Trout Association as the approved code of best practice for all trout farming in the UK.

It is not the intention of this Standard to compete with or cover off every audit point of every certification scheme or retailer specification. Since the establishment of the first QTUK Standard in 2000, a number of alternative schemes relevant to fish farming have been developed. It is accepted that specific third party certification schemes may well address particular issues in greater detail, or with more specific parameters and metrics, than are provided here. However, this Standard sets out what is perceived current best practice in trout husbandry. We encourage those who also undergo additional certification to undertake a gap analysis between this Standard and any other standard to which they wish to comply, in order to minimise audit burden and allow for audit points from other standards to form a bolt on to this core Standard.

The QTUK Standard is audited by a UKAS approved independent Certification Body and is ISO 17065 accredited.

1.1 Review Process

The Standards are subject to a rigorous annual review and consultation, to confirm their accuracy and relevance to current knowledge and understanding of trout husbandry and also market demand. They are issued to participants in, and those who apply to join the Scheme, the QTUK Technical Advisory Committee (TAC) and members of appointed certification bodies.

1.2 Codes of Practice

Where reference is made in this document to relevant legislation and external Codes of Practice, participants in the Scheme are required to demonstrate their awareness of and compliance with the current requirements of such documents (see Appendix 7). In Scotland, this must include awareness of and compliance with relevant sections of “A Code of Good Practice for Scottish Finfish Aquaculture”, hereafter referred to as COGP. Further information on and copies of this document are available online at: http://www.thecodeofgoodpractice.co.uk/.

1.3 Benchmarking

The Standard has been developed in consultation with a number of organisations. The Standard aims to remain abreast of future developments to statutory regulation and the COGP.

1.4 Research and Development

QTUK and its members shall demonstrably and positively review participation in the promotion of ongoing research and development to drive forward standards in farm management, fish health and welfare, environmental protection, and product safety and quality.

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2.0 Food Safety

2.1 Hygiene Standards

2.1.1 Farm Cleanliness: All farms must comply with the hygiene standards where appropriate (see Technical Note 2).

2.1.2 Units and buildings must be maintained so as to enable them to be effectively cleaned and to minimise the risk of damage by predators or vermin.

2.1.3 The potential breeding grounds for predators and vermin must be minimised by keeping vegetation on site particularly around buildings short.

2.1.4 Pest control routines must be established and checked as determined by a competent person to ensure that the premises remain pest free. Where a Scheme member does not have a contract in place with a third party pest-control company, evidence must be supplied to demonstrate that a robust pest control programme is being undertaken by competent staff as evidenced by training.

2.1.5 Buildings, equipment, tools, work surfaces and containers must be kept clean and in good condition. A sufficient supply of clean water must be provided to enable appropriate cleaning routines to be applied.

2.1.6 All detergents, disinfectants and other chemicals used for cleaning must be of a type suitable for their purpose. They must be used according to manufacturers' instructions and in such a way that does not adversely affect the welfare of fish or the environment. All cleaning products used must be properly labelled and safely stored to avoid the risk of contaminating the fish and in keeping with manufacturers' instructions and current legislation (see Appendix 5).

2.1.7 Strong smelling substances that may contaminate or taint fish must not be used (see Appendix 3 for QTUK approved products).

2.1.8 Product inventories must be maintained for all chemicals, detergents, disinfectants, and pesticides used on site along with appropriate data safety sheets. Chemicals and pesticides must be stored in their original packaging with labels clearly visible and in an appropriate locked area (see Appendix 5). Disposal must be in accordance with data safety sheets.

2.1.9 Food Handling:
No longer applicable.

2.1.10 Facilities for harvesting and/or primary processing must meet the requirements of relevant food safety and hygiene legislation, to control the risks of product contamination.

2.1.11 Staff must receive instruction on hygienic methods of handling trout during harvest. Effective arrangements, through the issuing of e.g. work instructions must be established and maintained.

2.1.12 All livestock and domestic animals must be excluded from the harvesting area. The harvesting area should be clearly delineated on the farm plan.

2.1.13 Any fish that fall to the ground during the harvesting operation on farm must be excluded from the harvest and removed from the area.

2.1.14 After harvest the internal temperature of the fish must be reduced as quickly as possible to 4°C or below. Facilities must be provided to ensure that fish can be chilled during transit and bins securely covered in order to avoid spillage and prevent risk of contamination.

2.1.15 Haulier and producer must have equipment designated for harvesting operation to ensure that no material is passed from farm to lorry and vice versa. To prevent cross-infection, harvest bins must be thoroughly cleaned and disinfected between operations. Personnel must not climb into or onto the harvesting bins.

2.1.16 Personal Hygiene:
Staff must be made aware of the need to maintain high standards of personal hygiene when handling fish. In particular they must:

- Be made aware of the possible health risks posed to the consumer with regard to harvest / processing practices and staff hygiene.
- When working in operational areas, wear appropriate clean/ washable PPE.
- Keep an open cut or abrasion on any exposed part of their person covered with a suitable waterproof dressing.
- Strictly refrain from smoking, spitting or eating during harvesting / processing.
- Not handle fish during harvesting / processing while knowingly suffering from stomach disorders or any condition that may cause infection.

2.1.17 No longer applicable.

2.1.18 Staff Facilities:
Suitable and sufficient cloakroom and canteen or similar accommodation must be provided. The accommodation must be of hygienic construction, well lit, ventilated and kept clean.

2.1.19 Toilet facilities must be provided and a clear, legible notice requesting users to wash their hands after using the toilet must be displayed. Suitable hand washing facilities must be provided, together with an adequate supply of soap or other suitable detergent, and hygienic hand drying facilities. The facilities must be kept clean, well lit, ventilated, in good working order, and not open directly onto food handling rooms.

2.2. HACCP

It is recommended that the management of food safety risks must be based on a Hazard Analysis, Critical Control Point (HACCP) system. This is a legal requirement for sites whose activities extend beyond primary production (e.g. processing). For further information on HACCP see current COGP http://thecodeofgoodpractice.co.uk/chapters/annexes/
Annex 1 Hazard Analysis Critical Control Points

2.3 Licensed and Approved Treatments

Where sites use licensed and approved treatments on fish for human consumption, relevant legislation must be adhered to. Medicines must be used as advised by a veterinary surgeon and / or the conditions set out in the data sheet and full records kept for a time appropriate to the treatment.

2.4 Contamination Prevention

2.4.1 Sites must be able to demonstrate that recommended withdrawal periods for veterinary medicines and treatments have been adhered to prior to the harvest of fish for human consumption or for restocking fisheries .

2.4.2 No longer applicable.

2.4.3 No longer applicable.

2.4.4 Fish must be organoleptically tested in accordance with QTUK protocol (refer to Appendix 10), and fish exhibiting off or adverse flavour must not be harvested. Records of organoleptic assessments must be kept for a minimum of a year or longer if legislation dictates.

2.5 Traceability

Traceability information covering all site inputs (e.g. eggs, fish, feed, medication etc.) through the whole production chain, to despatch must be maintained for at least one year after entering the food chain

Farmers must develop and maintain systems that allow full traceability of fish batches from the point of egg production to the point at which custody of the fish is transferred to the customer.

Farmers must therefore:

- Record the suppliers of stock, feed and treatments to their business, and points of application.
- Record the businesses to which products have been supplied.
- Ensure that such information is made available to competent authorities on demand.

3.0 Fish Health and Biosecurity

3.1 Veterinary Health, Biosecurity and Welfare Plan

Sites must have a current Veterinary Health Plan and Biosecurity and Welfare Plan. These may be combined within a single document – The Veterinary Health Biosecurity and Welfare Plan (VHBWP).

All staff must be aware of the content and their responsibilities as necessary.

Guidance can be found in current COGP
http://thecodeofgoodpractice.co.uk/chapters/annexes/ Annex 2

3.2 Area Management

3.2.1 No longer applicable.

3.2.2 Marine Farms within a defined Farm Management Area must be fallowed synchronously on a single year class basis. An exception to the foregoing requirement may be possible. Where this is the case, the undernoted conditions must be met:

A documented risk assessment, which considers the risks to the company's own operations and to the operations of other companies operating within the FMA and in any adjacent FMA, must be undertaken and management systems adopted that maintain risks at a satisfactorily low level;

This risk assessment must include detailed information on strategies to be followed for pathogen and parasite control in the absence of fallowing.

3.2.3 For marine farmers considering new and emerging species, multi-year class farming may be required to facilitate the development of that sector. In all cases this must only be undertaken following the satisfactory outcome from a documented risk assessment, and must not occur for more than six years, without a fallowing, cleaning and disinfection cycle.

3.3 Origin of Stock

Reference Point: QTUK recommend Scheme members refer to COGP Annex 8 re the importation of ova or fish; http://thecodeofgoodpractice.co.uk/chapters/annexes/
Annex 3 Risk Assessment Protocol for Fish Health

3.3.1 QTUK members must source farm stock from members of the Scheme at all times. A derogation must be sought from the TAC if this is not possible. Solely in respect of ova, where it is not possible to source stock from members of the Scheme, members must be able to demonstrate (as opposed to seeking a derogation as above) that they have exercised reasonable due diligence e.g. farm visit in their selection of egg supplier, particularly in respect of health, and that such supplier carries the correct health certification.

3.3.2 Ova records must include location of sites where the brood stocks were held. Details of source hatcheries must include the disease and treatment records of ova or fish supplied, import and health certification if appropriate, including disinfection treatments and incubation periods. See Appendix 6 for a template questionnaire to consider using re ova supply.

3.3.3 No longer applicable.

3.3.4 Where required, ova disinfection must be carried out to the requirements of current national legislation
, and in accordance with the disinfectant manufacturer's instructions. Ova packaging materials must not be reused and must be thoroughly disinfected with an approved virucide/bactericide, left to dry and disposed of in accordance with local industrial waste regulations.

3.3.5 No longer applicable.

3.3.6 Scheme members must not use transgenic finfish for production.

3.3.7 Due consideration must be given to the risks of introducing Gyrodactylus salaris. Consideration must also be given to the risks presented by equipment brought in from countries that are known or suspected to harbour the parasite. For further info see COGP http://thecodeofgoodpractice.co.uk/chapters/annexes/ Annex 4 Disinfection Procedures

3.4 Movements

3.4.1 Transportation must be carried out in accordance with the relevant legislation.

3.4.2 The frequency of equipment movement must be kept to a minimum to reduce the risk of disease transmission. When equipment is transferred from one site to another it must be accompanied by a written assurance of disinfection.

3.4.3 Appropriate precautions must be taken to avoid the spread of disease between batches of ova and fish, and from farm to farm, by vehicles and visitors. Nets, boots and all equipment must be disinfected as required to avoid the spread of disease (see Technical Note 2).

3.4.4 The inter-site movement of vehicles (and/or vessels) must be kept to a minimum and where such movements are essential, company disinfection procedures must be followed.

3.4.5 No longer applicable.

3.4.6 Where water exchange during transport is required, transport water must not be discharged directly into natural water courses such as burns, rivers or ditches. Water exchange can only take place at authorised water exchange points.

3.4.7 All movements of live fish and ova must be recorded as per the requirements of the relevant authority and in accordance with UK and EU fish health legislation.

3.4.8 No longer applicable.

3.4.9 Vehicles that are contracted by the farm and containers or tanks used for transporting fish to and from premises, including harvest fish, must be suitable for the purpose, maintained in a clean and hygienic condition and disinfected thoroughly between loads. Written confirmation must be obtained from the supplier that appropriate disinfectant procedures have been carried out.

3.4.10 Surfaces coming into contact with fish must be non-toxic, corrosion resistant, smooth and easy to clean and disinfect.

3.4.11 No longer applicable.

3.4.12 Movement within Farm Management Areas

- Where more than one company occupies a Farm Management Area (FMA) and a single year class of fish is stocked within it, movements within the area should be subject to agreement between the companies occupying the area.

- There is an increased level of risk in FMAs where more than one company operates and/or more than one year class is present and/or different finfish species are being farmed. In such cases, all movements within the FMA should be subject to a satisfactory outcome from a documented risk assessment and the agreement of all the companies operating within that area.

- The number of different sources of fish used to stock marine pens must be kept to a minimum.

Movement between Farm Management Areas

- Fish must only be moved between FMAs when the outcome from the documented risk assessment is satisfactory.

- Where the outcome of a documented risk assessment is satisfactory, fish movements between FMAs must take place with the written agreement of other finfish farmers within the FMA into which the fish are to be moved.

- Where the same farming company is the sole operator in two different FMAs, it is acceptable for this company to move fish from one area to another fallow area provided an appropriate risk assessment has been completed.

- All activities in which wellboats are used to transport fish between FMAs must be subject to documented risk assessment.

3.4.13 Movement from more than one Farm Management Areas

- Movements from more than one farm management area into a single management area must only occur for broodstock or harvesting purposes.

Harvesting

- The use of transport pens for moving fish from farm to harvest station must be limited to the transport of fish through safe water over short distances and within a single FMA.

- Fish must not be transported from a harvest station to a production site.

Broodstock Movement

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

- Fish placed on broodstock sites must not leave these sites for ongrowing elsewhere.

- Where it is proposed to move Trout broodstock from sea water to fresh water, this must be based on a satisfactory outcome from a documented risk assessment.

3.5 Ongrowing

3.5.1 PPE must be site specific and not interchanged between sites. Equipment must be site specific as far as is practicable. Where transfer of equipment between sites is unavoidable, cleaning and disinfection using products recommended in Appendix 3 must be followed.

3.5.2 The transmission of infectious agents by birds and mammals must be minimised by suitable exclusion and deterrent measures, the hygienic handling of dead fish and feeding practices which minimise wastage.

3.6 Medication

Please refer to Technical Note 1

Reference Point: The use of authorised veterinary medicines and other treatments to protect fish health and welfare is a proper and legitimate aspect of fish husbandry. Veterinary Health Biosecurity and Welfare Plans are important tools in the management of fish health; refer to section 3.1 of this Standard, and must be fully implemented.

Good practice guidance in relation to vaccination can be found at:
http://www.ruma.org.uk/fish/responsible-use-vaccines-vaccination-fish-production/

3.6.1 Medicated feed and prescribed treatments must be used in accordance with current legislation and the vet's instructions/prescription.

Veterinary surgeons may supply a prescription to obtain drugs from a pharmacy or another veterinary surgeon or may supply the drugs themselves in which case a physical prescription to supply is not required.

Farms must be registered with the VMD as on-farm mixers, and have a mixing licence registration number. A mixing authorisation from the farm's veterinary surgeon is required for each batch mixed/treatment undertaken. These must be kept for 5 years.

Mixing authorisations are currently applicable for 3 months from the date of issue. If stored drugs are used then new authorisations must be obtained and retained outside this period.

The Fish Health Inspectorate produces an Aquatic Animal Medicine Record which can act as a guide

3.6.2 The manufacture on-farm of medicated feed must be carried out in an appropriate designated area and in accordance with the farm's prepared VHBW plans and legally approved under the appropriate regulatory authority(ies). A mixing record (blending log) must be kept for each mixer used to mix medicated/zoo technical feed showing ration details and the actual order of mixing.

On farm mixers must take a sample of mixed feed when they start using a new batch of Medicine or medicated premixture (medicated mineral supplements) and keep the previous three Samples ie. When they take a 4th sample, they dispose of the 1st etc.

Retention samples may also be disposed of 3 months after the fish have left the farm, a log of samples should be kept.

A designated production person who is normally responsible for the mixing of on-farm medicated feed and a designated quality assurance person (ideally persons different and independent of each other) must be identified, be aware of their duties and responsibilities and must be properly trained in their specific tasks if medicated feed is manufactured on-farm.

3.6.3 Veterinary products must be properly labelled and stored in an appropriate locked area (see Appendix 5). Vaccines will require refrigerated storage.

3.6.4 All treatment and vaccination procedures must be carried out in accordance with manufacturers' instructions, data sheet requirements and in accordance with the purchaser's specifications. A hatchery must supply certificates detailing all vaccination and medicated treatments used (i.e. date, batch and quantity administered) to the customer with the stock.

3.6.5 Veterinary medicine withdrawal periods must be strictly adhered to (see Technical Note 1). [NB Requirement to cover accidental spillage of medicated feed]

3.6.6 Treatments authorised for use in other food-producing animals can be administered on prescription under the veterinary "cascade" principle but the legal default withdrawal period must be operated (Currently a minimum 500 degree day withdrawal period).

3.6.7 Vaccination equipment must be maintained in a hygienic manner. Where vaccination equipment is not site specific it must be disinfected before being taken on-site, and before and after use.

3.6.8 A medicines log, incorporating records of the use of all veterinary medicines and treatments must be kept up-to-date and be available for inspection. The method of recording must allow for full reconciliation of the intake and usage and permit a live stock check. Disposal must be in accordance with data safety sheets and records kept with date, quantity, method and location of disposal.

A separate record of the use of water treatments must also be kept in the medicines log. Records must be maintained for five years.

Records must include:

- Intake records:
  - name of medicine
  - date and quantity purchased
  - batch number and supplier

- Usage records:
  - identity of group of fish treated
  - reason for use (diagnosis)
  - identity of disease/pathogen being treated
  - date and time treatment started
  - date and time treatment finished
  - medication name and quantity
  - dosage rate
  - batch number of controlled product
  - length of withdrawal period including average water temperature used to calculate the withdrawal period
  - earliest date for harvesting the fish for human consumption
  - name of person responsible for treatment / on-farm mixing
  - if applicable for medicinal products MFS authorisation reference and any prescription numbers
  - date, quantity, method and location of disposal.

3.7 Sealice

3.7.1 Farmers must follow A National Treatment Strategy (NTS) for the Control of Sea Lice on Scottish Salmon Farms, as applicable. Refer to the site specific VHBWP and the current COGP http://thecodeofgoodpractice.co.uk/chapters/annexes/ Annex 6 National Strategy for Sea Lice Treatment Control

3.7.2. All farm staff must receive training and demonstrate proficiency in this part of the COGP to include lice identification, counting and reporting of results, lice dynamics and infestation symptoms.

3.7.3 }

To } No longer applicable.

3.9 }

3.10 Blood Water – Bio Security

3.10.1 Bleeding of fish must take place on a facility where the blood water is contained. Measures must be in place to prevent leakage of blood water from the harvest facility.

3.10.2 Blood water and effluent must be disinfected to minimise the risk of pathogen spread, and its subsequent disposal must be according to applicable licence conditions or code of good practice.

4.0 Environmental Management and Protection

The Board and TAC of QTUK Ltd consider it unnecessary to specify numeric or other quantitative parameters relating to environmental management further to those already set out in the relevant site licences, permits or consents as agreed with the competent regulatory authority with responsibility for environmental management.

4.1 Management

4.1.1 QTUK members must operate with due respect for the natural environment, recognising their duty of care to it and the possible impacts upon it. The long-term sustainability of the natural environment must be a fundamental consideration. Both inputs to the farming system and outputs of the farming system must have due consideration for sustainability and the environment.

4.1.2 All member farms must be registered with and regulated by the relevant regulatory competent authority e.g. for England and Wales EA, CEFAS, for Scotland SEPA, SG, MSS, Nature Scots and for Northern Ireland DARD, DCAL, DOE

4.1.3 Farmers must make proper application, to the relevant regulatory bodies, for new, renewed or modified development consents.

4.1.4 Farms must hold current relevant licences such as CAR, demonstrate that they are operating within the terms of these, and maintain adequate records.

4.1.5 Members are required to prepare an environmental statement for their site and practice. Members must give consideration to the development of an environmental management plan. Such a plan must highlight known and potential impacts (for example, uneaten fish food pellets and faecal matter) and consider and propose, where relevant, remedial action. Management must ensure that recommended actions are implemented and that the environmental plan is regularly reviewed (see Appendix 11).

4.2 Fuel / Oil Handling and Storage

Producers must follow the guidelines laid down in Appendix 9 of these standards for the transportation and storage of fuel and waste oil.

4.3 Solid Waste

All waste materials (e.g. feed bags, redundant equipment) must be collected and subject to proper disposal, including recycling where appropriate.

4.4 Special Waste

All sites must ensure safe disposal of special waste, specifically with reference to: medicines and other medical waste (scalpel blades, Petri dishes, medicine containers), laboratory equipment, etc. Sites should take advice from their designated fish veterinarian or local EHO as necessary.

4.5 Lights, Odours and Noise

The use of surface and submerged or other land based lighting is permissible, subject to the provisions of the site's planning permission.

Offensive odours that may arise from farming activities must be managed and minimized. Equipment that creates significant noise (e.g. air blowers, generators) needs to be suitably modified / muffled.

4.6 Containment

The Scottish Technical Standard (STS) will only apply to sites in Scotland, it is recommended that operators of all UK sites should familiarise themselves with the Standard. The Board and TAC of QT UK will consider the implications for the QT UK Scheme with particular consideration of its impact on points of best practice.

STS published by Marine Scotland in June 2015, determines technical requirements for fish farm equipment in Scotland and applies to all species of finfish. It should be used alongside operational procedures and training of staff to ensure equipment is used and maintained appropriately and procedures followed correctly.
It is implemented by a regulation under the Aquaculture and Fisheries (Scotland) Act 2013, which allows Scottish Ministers to require Scotland's fish farming industry to adopt a Technical Standard and ensure a suitably trained workforce. All equipment will be expected to meet the requirements by 2020 at the latest.

This Standard applies to a wide range of persons involved with finfish aquaculture operations in Scotland, including finfish company owners, directors and managers, purchasing managers, health and safety managers, environmental managers, boat skippers and operatives, maintenance personnel and certain operational staff.

The Standard ('A Technical Standard for Scottish Finfish Aquaculture') can be viewed at: http://www.gov.scot/Resource/0047/00479005.pdf

The Steering Group which developed the Standard originally was reconvened to review and update the Standard. The revised Standard will be published in 2022 and will supersede the existing document.

4.6.1 For any new developments, farms must be able to demonstrate through an appropriate risk assessment that site construction is suitable for the weather and environmental conditions that are likely to be experienced on the site.

4.6.2 A predator risk assessment must be undertaken on a site-specific basis (see also 5.3).

4.6.3 No longer applicable. [U1]

4.6.4 Holding units, including inlet and outlet screens, must be constructed and maintained so as to prevent the escape of farmed fish, the entry of wild fish and the movement of fish into settling ponds and discharge channels. Screens must be checked at least once per day and cleaned, as appropriate, to prevent leaves and other debris obstructing the water flows.

4.6.5 Procedures such as fish input, grading, transfer of fish between sites and harvesting, which could increase the risk of fish escaping from pens or tanks, must be carefully planned with a risk assessment in place on a farm basis for that process.

4.6.6 Details of all introductions, gradings, transfers, treatments, handling or any other incident or occurrence that might have led to an escape must be recorded and the records shall be available for inspection by any authorised inspector.

4.6.7 All sites must ensure that on-site security is sufficient to protect stock from theft and/or vandalism. This must be subject to a risk assessment.

4.6.8 The manufacturer of new equipment must provide information on the specification and any relevant recommendations.

4.6.9 Pen units must comply with national health and safety guidelines in respect of accessibility, anchorage, buoyancy, strength and stability.

4.6.10 Moorings must be fit for purpose, and correctly installed and maintained.

4.6.11 Pens and mooring components must be inspected according to a regular and recorded plan.

4.6.12 Minimum cage net strength must meet or exceed industry standards (see COGP http://thecodeofgoodpractice.co.uk/chapters/annexes/ Annex 7 Procedures and Standards for Holding Facilities. Cage net mesh size must be capable of containing all fish inputs. The design, quality and standard of cage nets must suit site conditions, including an adequate safety margin. Cage nets must be treated with a UV inhibitor and stored away from direct sunlight when not in use.

4.6.13 Cage nets must carry a numbered ID tag. An inventory must be kept of all cage nets to include information on: date of purchase/manufacture; supplier; location; testing and anti-fouling history. Cage nets must be tested in accordance with manufacturers' advice. Cage nets and the system by which cage nets are attached to the pen and weighted must be regularly inspected, including before and during stocking, with remedial action taken as necessary.

4.6.14 Pen units in navigable waters must be marked and lit in accordance with the requirements of the appropriate regulatory body.

4.6.15 In cases where marker buoys are required for safety reasons, buoys must be of suitable size, colour, design and construction so that navigators are aware of potential obstructions created by the fish farm installation by day and night.

4.6.16 Work boat operations must avoid damage to cage nets and pens. Boatmen must be fully trained and competent, and must possess the necessary qualifications where appropriate for the operations concerned; training records must be kept.

4.7 Escapes

Any escape or suspected escape of live fish must be reported to the appropriate authority (i.e. SG/FRS within Scotland, EA in England & Wales, DARD Fisheries Inspectorate in Northern Ireland) within 24 hours. Additionally, the number of fish involved in containment breaches within Scottish waters must be confirmed to the Scottish Government, and where appropriate to the local District Salmon Fisheries Board and Fisheries Trust.

Farms must liaise with appropriate local regulatory authorities (e.g. Environment Agency, Foyle Carlingford and Irish Lights Commission, District Salmon Fishery Board, Fisheries Trust, Marine Scotland, etc.) to agree a contingency plan for the recovery of escaped fish in the event of a breach in containment. Scottish farms must also refer to COGP

5.0 Fish Welfare and Care

In 2014 FAWC (Farm Animal Welfare Committee) published two opinions with regard to the welfare of farmed fish and the welfare of fish at point of harvest and slaughter. These opinions contained a number of recommendations to Government (cross UK).

Quality Trout UK Ltd is committed to working with farmers, industry colleagues, Government and academia in addressing these recommendations and will be updating our Standards, where appropriate to do so, in due course. It is noted that several of the FAWC recommendations came with the caveat that greater research was required into establishing meaningful welfare indicators for farmed fish prior to standards being set.
The highest commercial standards of welfare of the ova and fish in a QTUK farm and under the care of the farmer must at all times be maintained when designing, implementing and operating farm management systems and procedures. There must be no compromise to this and QTUK farms shall demonstrate a commitment to the continual improvement of welfare standards as developments and advances in knowledge allow.

5.1 Management

5.1.1 No longer applicable.

5.1.2 Farm Managers (or other staff responsible for fish health) must be familiar with the documented Risk Assessment Protocol contained within COGP Annex 8 http://thecodeofgoodpractice.co.uk/chapters/annexes/ Annex 3 Risk Assessment Protocol for Fish Health

5.1.3 A Veterinary Health, Biosecurity and Welfare Plan including biosecurity strategy must be developed in accordance with the guidelines laid out in Appendix 12 of this standard / COGP Annex 7 http://thecodeofgoodpractice.co.uk/chapters/annexes Annex 2 Guidelines for a Veterinary Health Plan (VHP) and Biosecurity Plan (BP) and in accordance with requirements as set out by the competent authority i.e. CEFAS / Marine Scotland Science. Each farm unit must have a designated veterinary surgeon who must conduct an on-site visit at least once per year and this visit must be recorded.

5.1.4 Fish suffering from disease must receive rapid diagnosis and treatment from a suitable trained, competent person. All suspicions of notifiable disease or unexplained mortality event must be reported to the relevant regulatory body.

5.1.5 Fish must be inspected at least once a day, weather permitting and farm design must facilitate this and fish must be inspected for damage, descaling and for lesions with all dead or dying fish collected, humanely killed and disposed of according to current legislation (see Appendices 1, 7 and COGP Annex 7 http://thecodeofgoodpractice.co.uk/chapters/annexes Annex 2 Guidelines for a Veterinary Health Plan (VHP) and Biosecurity Plan (BP)). For cage farms dead fish must be collected as frequently as possible, and at least once a week. Ova must be inspected daily and mortalities removed as appropriate and disposed of according to current legislation.

5.1.6 Records of the number of mortalities and causes thereof must be kept and farm staff must demonstrate competence in interpretation of mortality records.

5.1.7 Farms must develop an emergency procedure for any eventualities which may threaten the welfare of the fish stock (see Appendix 4). All farms must have alarms, warning devices and back-up generators commensurate with the level of operation; i.e. pond/tank farms must have high water level and low water level alarms. Farms which are critically dependent on an aeration system or oxygen system must have oxygen alarms, and back-up facilities must be available. Alarms and generators must be tested and recorded at least every 7 days, records of equipment checks carried out shall be maintained.

5.2 Stockmanship and Husbandry

5.2.1 Fish must be allowed to exhibit normal swimming and feeding behaviour. Farms must be able to demonstrate compliance with appropriate stocking densities, as outlined by the VHWP, which are judged on a farm-to-farm basis and must be such so as to ensure there is no adverse effect on the condition and welfare of the fish.

5.2.2 In order to minimise the risk of poor water quality, physical damage, stress and disease, fish must be stocked at densities appropriate to:

- Size.
- Water temperature and flow.
- Available oxygen.
- Stage in production cycle, and
- Type of fish holding unit.

5.2.3 The person with primary responsibility for day-to-day running of the unit must demonstrate competence in stockmanship and welfare standards appropriate to the unit. The unit must be staffed by a suitable number of personnel who are qualified by training and/or experience in aquaculture to ensure the requirements of the Standard are met.

5.2.4 At all times ova and fish must be treated and handled in such a way as to avoid injury and minimise stress. Unnecessary handling and netting must be avoided. Where possible a fish pump or auger, appropriate for the size of fish, must be used to move fish around the farm. Knotless nets must be used.

5.2.5 Accurate and up-to-date records must be kept of numbers and weights of fish in all units and of movements between them.

5.2.6 Fish must be graded to prevent excessive size disparity, or when stocking density indicates; to ensure effective utilisation of feed by all fish in a pond, tank or cage and to prevent welfare problems associated with hierarchical dominance. Grading must be included within the VHBWP (see Appendix 12).

5.2.7 All fish must receive an appropriate crumb or pellet size, ration and formulation of feed according to manufacturers' instructions to maintain full health and vigour, and to grow and develop normally. At least once a month small batches of fish from each population must be either sample weighed, or an accurate mathematical growth model applied, to allow an appropriate adjustment to the daily ration.

5.2.8 Exposure to light must be at a level suitable for each stage of development. Optimum lighting patterns for fish welfare on each site must be determined by practical experience, research or specialist advice.

5.2.9 Weather permitting, and having regard to health and safety conditions, all equipment must be visually inspected daily. Any defect must be immediately reported to supervisors. Where immediate remedial action is not possible, alternative measures must protect fish welfare.

5.2.10 If fish are handled, adequate support must be given to the body (live fish must never be held by the gills or tail only).

5.2.11 Time out of water must be kept to a minimum and the time must never be so long as to produce signs of distress. In all cases, fish must be kept wet.

5.2.12 When hand nets are used they must be:

- Of a suitable size (physical and mesh size).
- Designed to minimise the occurrence of physical damage.
- Kept clean, disinfected and in good repair.

5.2.13 Crowding must be kept to a minimum. There must be a written procedure for crowding and personnel must be trained in the appropriate techniques. Check crowd nets for tears and damage before and during use. Farmers must:

- Monitor fish behaviour during the crowd to ensure fish do not show signs of stress or damage.
- Monitor oxygen levels and take action before they fall below a critical point.
- Ensure that enclosure nets and screens are kept clean in order to avoid water quality problems during crowding.
- Remove and cull any moribund or damaged fish.

5.2.14 Grading equipment must be designed and maintained so as not to damage the fish.

5.2.15 No longer applicable.

5.2.16 All farms must have an oxygen meter, and meters must be used, as appropriate, to ensure the welfare of ova and fish.

5.1.17 No longer applicable.

5.1.18 No longer applicable.

5.2.19 Materials (including netting) used in construction of enclosures must present a smooth, non-abrasive surface to limit injuries to fish.

5.2.20 Biofouling must not be allowed to build up on pen nets to a level that impairs water flow through the mesh. Nets must be checked regularly for holes or biofouling and remedial action must be taken immediately. All products used to anti-foul nets must be approved for use under relevant legislation. They must be used in such a way that neither the fish nor the environment are adversely affected.

5.2.21 Nets must be adequately tensioned to minimise distortion.

5.2.22 Nets and screens must be of a suitable mesh size, quality and strength appropriate to their purpose.

Reference Point: Pen systems include all ancillary grading and swim-through pens.

5.2.23 No longer applicable.

5.2.24 No longer applicable.

5.3 Predator Control

5.3.1 All farms must have a site specific predator control plan. Equipment and farm design and operation must protect the fish from predators, using means that minimise harm to predators and methods that conform to relevant codes of practice and appropriate legislation. See also Appendix 13 and part of COGP Annex 14 http://thecodeofgoodpractice.co.uk/chapters/annexes/ Annex 7 Procedures and Standards for Holding Facilities. The legal destruction of a particular animal must only be considered as last resort after all reasonable attempts have been made to exclude them from farms.

5.3.2 Farmers must monitor sightings of predators in the farm vicinity, and record fish losses to predators, and the use of control systems. Any mortalities of predators must also be recorded.

5.3.3 Predators may only be excluded by use of appropriate methods depending on the predator.

5.3.4 Predators (other than those subject to a legal shooting season) may only be killed or taken under licence, the conditions of which must be followed

5.3.5 No longer applicable.

5.3.6 No longer applicable.

5.4 Food Withdrawal

The period during which fish may have food withdrawn prior to certain operational procedures or harvest shall be appropriate to trout, taking into account environmental conditions.

5.4.1 No longer applicable.

5.4.2 Food withdrawal may form part of the response to adverse environmental conditions and in the treatment for certain diseases (e.g. sleeping disease in trout); veterinary advice must be sought on this as appropriate, and details must be included in the Veterinary Health, Biosecurity and Welfare Plan(s).

5.4.3 Fish for transportation must have food withdrawn for a minimum period of 24 hours and up to a maximum of 72 hours to achieve gut evacuation. No treatments may be administered during the food withdrawal period prior to transport, with the exception of common salt baths.

Fish for harvest must have food withdrawn for a minimum period of thirty degree days and up to a strict maximum of seven calendar days to achieve gut evacuation. Other than as outlined, complete withdrawal of food must not be used as a way of conditioning fish prior to harvest.

5.4.4 .
Harvesting of fish and associated food withdrawal must be carried out in a pond/tank or suitable harvest cage. The unit must be cleaned at regular intervals and kept in a hygienic condition.

The water supply to the unit must be of a suitable quality, preferably first use, but certainly must not contain any fish excrement and / or waste food.

5.5 Live Fish Transport

Welfare issues should be considered before transporting fish. This should be conducted in conjunction with the live fish haulier (where appropriate).

5.5.1 Transportation must be carried out in accordance with the relevant legislation (reference Appendix 7).

5.5.2 A welfare plan must be developed regarding the transport of live fish. (Refer to clauses 5.5.3 to 5.5.6 for those areas that this must address.)

5.5.3 Stress on fish must be minimised and they must only be transferred to ongrowing sites in good physical condition and when in the optimal physiological state. It is the joint responsibility of the supplier and the purchaser to ensure that this is the case. Crowding of fish before collection for transport must be kept to a minimum. Fish exhibiting clinical signs of disease, injured fish and dead fish must not be loaded for transport. It is an offence to knowingly move fish showing clinical signs of disease even if it is not a notifiable disease. Fish must not be transported in a way that causes or is likely to cause injury or suffering.

5.5.4 For lorry and wellboat transport, oxygen monitoring must be carried out at sufficient frequency to ensure that oxygen levels are maintained within safe parameters at all times. Oxygen control systems must be such that adjustments can be made timeously. Supplementary oxygen or aeration must be available for the full duration of the journey, especially where fish are transported by helicopter. Oxygen supplies must be sufficient to last longer than the anticipated journey length.

5.5.5 Excessive or rapid changes in water temperature or pH in transport tanks must be avoided.

5.5.6 Any fish that die during transportation must be separated from live fish as soon as possible after arrival and cause of death determined by a competent person. Records of deaths or injuries during transportation must be made.

5.6 Harvesting

Reference Point: “harvest” refers to the provision of fish for processing for the table market. QTUK recommend that Scheme members follow the approved methods of slaughter set by the Humane Slaughter Association: http://www.hsa.org.uk/humane-slaughter/welfare-at-slaughter.

5.6.1 At all times the harvesting procedure must be carried out with due regard to the welfare of fish ensuring that the operation is undertaken as quickly and efficiently as possible thereby minimising stress. The harvesting procedure should render the fish immediately insensible and beyond the point of recovery. Killing efficiency must be monitored to ensure fish do not regain consciousness prior to death.

5.6.2 Where automated methods of stunning are used, a manual back-up (e.g. a priest) must be available should the system fail.

6.0 Feed

6.1 Formulation and Manufacture

6.1.1 Farmers must review the specification and use of diets with their supplier to effect improvements in performance, and ensure feed suits the trout's life stage.

6.1.2 The use of ingredients derived from salmonids and the use of growth promoters is prohibited.

6.1.3 Only pigments permitted under current legislation may be added to the feed to assist in achieving a uniform and typical colour in the flesh of the fish. Combined inclusion rates must not exceed 100 ppm post manufacture.

6.1.4 Feed must be sourced from a manufacturer certified to a recognised feed assurance scheme (Universal Feed Assurance Scheme (UFAS), https://www.aictradeassurance.org.uk/ufas/documents/ufas/ , or other equivalent mutually recognised scheme which ensures that feed meets EU and UK legislative requirements).

6.1.5 Feed must be compliant with the EU Undesirable Substances Directive 2002/32/EC and amendments, certifying that programmes are in place for monitoring levels of such substances in feed, and ensuring these are within legal limits.

6.2 Delivery and Use

6.2.1 All feed deliveries must be managed to reduce the risks to site bio-security, be transported and stored under dry and hygienic conditions, and protected to avoid the risk of contamination and spoilage.

6.2.2 A stock rotation system shall be operated to ensure that feed is used before the expiry of the "best before/use by" date as indicated by the manufacturer. Feed which has exceeded the "best before/use by" date as indicated by the manufacturer must not be used unless accompanied by an appropriate assurance from the feed company.

6.2.3 Farms must have documented evidence to confirm that the feed companies retain samples of every batch of fish feed for a minimum period of 12 months.

6.2.4 Farms must keep clear records of all batches of feed delivered to enable them to be traced back to the samples retained by the fish feed manufacturer.

6.2.5 All farmers must have written feeding recommendations, normally supplied by the feed manufacturer.

6.2.6 No longer applicable.

6.3 Sustainability

Farmers must have an up-to-date declaration from the feed supplier confirming that:

6.3.1 A company sustainability programme is in place.

6.3.2 Fishmeal and fish oil used in the manufacture of their feed was obtained from suppliers certified to the Marin Trust Standard (formerly known as the IFFO RS Standard), or an equivalent scheme/International standard (minimum requirement for fish sourcing from fisheries compliant with the FAO Code of Conduct for Responsible Fisheries with full traceability back to origin). https://www.marin-trust.com/marintrust-standard

6.3.3 Soya products used in the manufacture of their feed was obtained from suppliers that as a minimum meet (but are not necessarily certified to) the requirements of the FEFAC Soy Sourcing Guidelines in regard to them being from deforestation free sources.

7.0 Farm Management

7.1 Staff Training

7.1.1 A member of staff must be appointed as Health and Safety Officer and there must be a Health and Safety policy. All staff must confirm they have read and understood the Health and Safety policy on induction.

7.1.2 Training needs appropriate to the nature and volume of production must be identified and training to be given to personnel, as necessary.

7.1.3 New employees must be given induction training in relation to their role, which must be documented, and may include

- Hygienic method of handling fish products
- Personal hygiene procedures
- Basic contamination prevention procedure
- Key operations affecting quality and product safety
- Farm management operations including feeding, harvest and grading
- Fish health/welfare.

7.1.4 An assessment of training needs must be carried out annually or as required to ensure that all staff are competent for the tasks they perform.

7.1.5 Appropriate records of ongoing individual staff training shall be maintained, and these records must cover the following areas as appropriate to the work place and their role:-

- Pest control (if not undertaken by a third party) - reference clause 2.1.4
- Medicated feeds - reference 3.6.2
- Sea lice - reference clause 3.7.2
- Boatmen qualifications - reference clause 4.6.16
- Fish disease - reference clause 5.1.4
- Stockmanship and welfare standard - reference clause 5.2.3
- Crowding - reference clause 5.2.13
- Chemical Use / handling - Appendix 12
- Handling and storage of feed - Appendix 12

7.2 Records

7.2.1 Adequate and up-to-date records appropriate to the volume and nature of production shall be maintained to demonstrate compliance with the requirements of this Standard. Typically, these records shall include, but not be limited to, the following:

- Valid QTUK Certificate of Conformity.
- Correspondence with or from the certifying authority including copies of non-compliance reports.
- Procurement specifications / traceability records.
- Harvest records to include origin, organoleptic testing, etc.
- Temperature records.
- Medicine and on-farm mixing of medicated feed records.
- Pest control reports.
- Predator losses and controls.
- Cleaning / Disinfection.
- Calibration records of measuring equipment.
- Staff training records.
- Mortalities, stock numbers and weights.
- Staff sickness records.
- Movement records, including on-site.
- Containment / Escapes.
- Emergency procedures.
- Critical control point monitoring, where HACCP plans in place.

- Servicing and maintenance of appropriate equipment.

7.2.2 Calibration records must include weighing equipment and oxygen meters. Oxygen meters must be calibrated as per manufacturers' instructions and weighing equipment must have an up-to-date service record and evidence of regular calibration with standard weights.

7.2.3 All sites must have a plan or plans showing the facility's layout. This information may be a specific document or documents, or may be included within other documentation, for example a site lease or planning consent. It must contain the following: key areas and access points; location of first aid kits and fire extinguisher.

7.2.4 All records must be properly stored, readily retrievable and retained for the requisite minimum period.

7.3 Complaints Procedure

Complaints must be adequately recorded and considered. A record of actual actions must be maintained.

Appendix 1: Disposal of Dead Fish

Where the site is subject to controls for listed diseases, disposal permission must be requested from the relevant regulatory body.

Accepted methods of disposal of day-to-day mortalities are as follows:

Method 1 - Licensed Landfill Site

Dead fish are collected and placed in an impervious container fitted with an adequate lid. There must be no possibility of leaks or the ingress of animals into the container. The container must be identified for the specific purpose of containing animal waste and no non-animal waste must be placed in this container. The container must be uplifted by a licensed disposal operative and disposed of in a licensed landfill site. NB legal constraints in regard to disposal via landfill.

Method 2 - National Fallen Stock Collection Scheme

The National Fallen Stock Co. (NFSCo) which administers the Fallen Stock Collection Scheme has noted that there are no collectors on their database who collect fish mortalities. Therefore, there are no collectors who would offer the scheme discount to NFSCo registered farmers. However, they note also that direct communication with collectors could provide a service for disposal.

Method 3 – Ensiling

Several types of ensiling equipment are available on the market. Operators must always adhere to the manufacturer's guidance notes. For alternative guidance on ensiling methods CEFAS, SEPA or another appropriate body must be contacted.

Method 4 – Disposal via Rendering

Measures must be in place to ensure that waste is held in a biosecure manner and transported by a licensed waste disposal proprietor and disposed of in accordance with relevant legislation.

Method 5 – Incineration

Measures must be in place to ensure that waste that is held in a biosecure manner and that incineration whether on-farm or via a licensed proprietor is conducted in accordance with relevant legislation.

Other Methods of Disposal

Other methods of disposal of dead fish may be acceptable, e.g. use in maggot farms, but reference must be made to QTUK TAC when considering alternative methods of disposal.

Appendix 2: No longer applicable

Appendix 3: QTUK Approved Products for Farm Hygiene

Disinfectants

Product	Comment
Iodophors	Refer to manufacturers' instructions for use
Peroxides	Refer to manufacturers' instructions for use
Hypochlorites	Refer to manufacturers' instructions for use
Peroxysulphates	Refer to manufacturers' instructions for use

NB (1) Anyone desiring to use any product not based on the list above must seek approval from the QTUK Technical Advisory Committee.

NB (2) All products must be assessed as appropriate for the purpose for which they are to be used and the farm must hold current safety data sheets.

NB (3) All disinfectants must be disposed of in accordance with manufacturers' instructions.

Appendix 4: Emergency Procedures Guidelines

Each QTUK farm must have emergency procedure guidelines for any event which might threaten the welfare of the fish.

List of Events

Such events may include:

- Any fish kill
- Any alarm situation
- Low oxygen
- Flood
- Pollution incident
- Adverse weather – including high temperatures, snow or severe frost
- Power loss
- Fish escapes
- Predators
- Disease
- Any event which might threaten fish welfare
- Staff Emergency

Guidelines

- Type of Emergency (from list of events)
- Contact – name/s and telephone numbers
- Procedure (sequence of actions in the event of emergency)
- Record of the event and corrective action to ensure that future risk is minimised.

Appendix 5: Storage of Medicinal Products & Chemicals

All medicines, zootechnical products and fish treatment chemicals must be stored in a dedicated storage facility. This facility must be secure, preferably fire-proof (e.g. metal chemical safe) and lockable. An appropriate hazard warning sign must be displayed.

Medicated feed must be stored separately from other feeds in a clearly designated area. All stored medicated and zootechnical feeds must be securely fastened (preferably in their own packaging) and clearly and appropriately labelled. Bins and hoppers used for medicated feed must be emptied and cleaned at end of medication period.

This facility may also be used for the storage of rodenticides, pesticides, herbicides, etc. but there must be obvious separation of these materials from fish therapeutic agents. This also applies to cleaning materials, detergents, disinfectants, etc.

Dry powder products must be stored above liquids.

A stock record must be maintained for all therapeutic agents including a minimum of identity, date of supply, expiry date, batch number, quantity used and date of use, stock remaining and signature.

All materials must be stored in this facility unless being used on site.

Appendix 6: Ova Supplier Questionnaire

As part of QTUK's Policy for continuous improvement and in line with our Scheme Standards, the following questionnaire might be utilised as a basis for establishing information on ova supply.

Ova Producer

1. Do you operate to the British Trout Association Codes of Practice or any other Code of Practice? If other, please specify:

2. Are you able to state on which farm the broodstock are kept?

3. Can you provide the customer with expected date of hatch?

4. Can you provide records of egg disinfection?

5. Can you provide health certification of broodstock?

6. Can you confirm that products which are unregulated/unlicensed in the UK have not been used at any stage of production?

7. Are you able to supply the above details with each batch of eggs?

8. If requested, can you identify the genetic origin of your ova?

Reference Point: COGP

Appendix 7: Guide to Legislation and Codes of Practice

Please find below a guide to the principal legislation (European Union and UK) governing trout production, advisory Codes of Practice and publications relating to specific issues, 'For your interest'. The list does not cover non-production issues, such as planning requirements for establishing/ expanding operations or legal requirements focussed on processing, retailing, catering).

Whilst every care has been taken in its preparation it is not intended as a fully comprehensive or definitive list of all legislation pertaining to the industry. For further information producers must refer to the appropriate Government department or agency.

This list focuses on the more significant pieces of legislation and the most recent Regulations, both European and UK (including current proposals). However for definitive up-to-date information on both legal responsibilities and enforcement issues producers are advised to contact the appropriate Government Department or Agency.

Codes of Good Practice – various Chapters/Annexes:

Code of Good Practice for Scottish Finfish Aquaculture (COGP);
Federation of European Aquaculture Producers Code of Conduct;
Food Safety Act – A guide for Food Businesses (2009).

For Your Interest: Food Law

– Practice Guidance (2015) for Local Authorities (devolved administrations).

Hygiene and Food Safety:

General principles of food law, including traceability, are established by EU Regulation 178/2002, which is enforced by The Food Safety Act 1990 (as amended) and The General Food Regulations 2004;

- 1169/2011: general and nutritional labelling (combining and updating Directives 2000/13 and 90/496).
- 2073/2005: microbiological criteria (amended by Reg. 1441/2007);
- 852/2004: hygiene of foodstuffs (enforced by The Food Hygiene Regulations 2006 for devolved administrations);
- 853/2004: specific hygiene rules (enforced as per 852/2004);
- 854/2004: organisation of official controls (enforced as per 852/2004;
- 882/2004: verification of compliance with feed and food law and animal health and welfare.

Medicated feed:

General principles of veterinary medicines, feed additives, labelling, information requirements, etc. are established by EU Regulation 1831/2003 and subsequent Regulations, enforced by The Veterinary Medicines Regulations 2013;

- COM 2014/556: Repealing Directive 90/167/EEC, revised definitions, conditions, placing on the market, etc. (adoption expected 2016);
- 2015/327: Amending 1831/2003 – additional labelling and information requirements; enforcement by (currently draft) SI: The Animal Feed (Amendment) Regulations 2016 (for each devolved administration);
- 2015/2294: Amending 1831/2003 – adding a new functional group in 'technological additives'; enforcement by (currently draft) SI: The Animal Feed (Amendment) Regulations 2016 (for each devolved administration);
- 183/2005: The Feed Hygiene Regulation; approval or registration (farms) for mixing feed;
- 882/2004: verification of compliance with feed and food law and animal health and welfare.

Fish Health and Welfare:

EC Regulation 2016/429 is the legal framework to support the new Animal Health Strategy of 2007, establishing a single, simplified set of overarching **general principles**. Previously the **general principles** of veterinary medicines, etc. (EU Regulations 726/2004, 1234/2008, 470/2009, 37/2010) were enforced by **The Veterinary Medicines Regulations 2013**, including definition of the 'cascade' principle; this UK regulation will now be updated within a 5 year implementation period;

- COM (2014) 558: AKA the Veterinary Medicine Products Regulation proposal; **Progressing through system** - potential revision to the 'cascade' principle;
- Directive 2006/88: update and consolidation of animal health rules for aquaculture products (including diseases); enforced by The Aquatic Animal Health Regulations 2009 (for each devolved administration);
- EC 1/2005: for the protection of animals during transport; implemented by The Welfare of Animals (Transport) Regulations/Order 2006 (for each devolved administration);
- Changes to Formaldehyde (Formalin) rules: From 1/1/16 classed as a Category 1B carcinogen with restrictions of use (see Cefas Press Release 23 November 2015); The BTA is participating in preparation of guidance material;
- 2009/128, Framework Directive on sustainable use of pesticides, including algaecides, antifouling products, etc., but not biocides);
- 528/2012, The Biocides Product Regulation, concerns the placing on the market and use of biocide products;

- Residues:

- 470/2009 allows medicines to be administered and370/2010 lists those **permitted** with MRLs; 37/2010 also lists **banned** substances; enforced by Veterinary Medicines Regulation 2013;
- 1881/2006; identifies maximum permitted levels of certain named **contaminants**; enforced by The Contamination in Food Regulations of 2007 and 2013.

For Your Interest:

- Farm Animal Welfare Committee (successor to FAW Council) – Welfare of farmed fish (Feb. 2014) and Welfare of farmed fish at the time of killing (May 2014);
- EFSA – Welfare aspects of the main systems of stunning and killing of farmed fish – Rainbow Trout (2009);
- Anti-Microbial Resistance (AMR): Consultation on evaluation of Commission's Action Plan (August 2015 – March 2016); EFSA Working Group on the reduction of the need to use antimicrobials; UK 5 year AMR strategy (2013); FEAP 'Position on AMR' (March 2016).

Environmental Protection

- Directive 2000/60/EC, the Water Framework Directive, transposed by The Water Environment (England and Wales) Regulations 2003/Water Environment and Water Services (Scotland) Act 2003 (as amended); objective to protect and enhance aquatic ecosystems, promote sustainable water use and ensure reduction of pollution of groundwater;
- Revised SEPA Regulatory Charging Scheme (with effect from 1 April 2016); single, risk based charging scheme replacing 5 specific schemes within The Water Environment (Controlled Activities) (Scotland) Regulation 2011;
- The Environmental Regulation (Enforcement Measures) Scotland Order 2015; additional enforcement policy and powers (effective 'early summer' 2016);
- Directives 2013/39 and 2014/80; water quality standards and priority substances; implemented by The Water Environment (River Basin Management, etc.)(Scotland) Regulations 2015;
- The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended 2013); definition of SEPA regulatory scope; (Practical Guide available 2015);
- Water Environment (Diffuse Pollution)(Scotland) Regulations 2008; re. agricultural practices, including pesticides;
- Water Environment (Oil Storage)(Scotland) Regulations 2006;
- The Water Resources Act 1991 (which largely replaced Control of Pollution Act 1974 in England and Wales) governing discharges under Integrated Pollution Control (IPC); enforced by EA and SEPA;
- The Environmental Protection Act 1990, which introduced IPC;

- The Food and Environmental Protection Act 1985, providing controls for disposal of waste at sea; enforced by Health and Safety Executive, along with pesticides legislation;
- Regulation 1069/2009 (replacing Regulation 1774/2002) and implementing Regulation 142/2011 on animal by-product collection through to disposal; UK implementation by the Animal By-Products (Enforcement) Regulations 2011 (England) and 2013 (Scotland)

For your interest:

- Water (Prevention of pollution) Code of Practice for agricultural activities.

General fish farm and business

- Aquaculture and Fisheries (Scotland) Act (2013); management and inspection powers for fish farms and fisheries, protection of shellfish growing waters, etc.; update and extension of Aquaculture and Fisheries (Scotland) Act (2007);
- COSHH - Control of Substances Hazardous to Health Regulations 2002 (plus amendments);Practical guidance to COSHH, HSE 2012;
- The Aquatic Animal Health Regulations 2009, authorisation and record keeping requirements; also Fish Farming Businesses (Record Keeping) (Scotland) Order 2008, for details of required records;
- Directive 94/62 on Packaging and Packaging Waste, implemented by the Packaging (Essential Requirements) Regulations 2015, for packaging products; government guidance notes available (October 2015); also Producer Responsibility Obligations (Packaging Waste) Regulations 2015 (amending Regulations of 2007);
- Regulation 1379/2013, revising the common organisation of the markets in fishery and aquaculture products including the required consumer information on labels (e.g. commercial and scientific names, ‘caught’ or ’farmed’, provenance);
- Fisheries Act (Northern Ireland) 1966, as amended; operation of fish culture licences and discharge of effluent.

Appendix 8: No longer applicable

Appendix 9: Guidelines for the Storage and Transport of Fuel Oil and Waste Oil

(These guidelines are recommended for 90 litres or above.)

The relevant regulatory body must be notified before bringing into use new, substantially enlarged or substantially reconstructed storage facilities. These structures must conform to the regulations.

Storage facilities must be sited at least 10m away from watercourses and surface water and field drains. There must be a suitable fire break between the storage area and adjacent buildings.

Storage areas must be separated by a bund. The bund and the base of the storage area must be impermeable and constructed so that, with proper maintenance, they will last for at least twenty years.

For a single tank, the minimum bund capacity is 110% of the tank capacity. For multi-tank installations, for drums or for barrels or for any combination of these with tanks, the minimum bund capacity must be 110% of the largest container or 25% of the total volume of oil which could be stored in the areas, whichever is greater.

Every part of the container must be within the bund, including all taps, valves, hoses and pipes. There must be no drain in the base of the bund.

Ideally, a roof must be put over the storage facility. This will avoid the problem of disposing of contaminated rainwater.

Farmers must and/or must ensure they use appropriate equipment for the transportation of fuel oils.

Specifically:

- Segmented tankers must be used for road haulage of fuel oils.
- Workboats carrying fuel oils must be properly certified by MCA or appropriate agency.
- Any equipment that uses or contains fuel oil must be secured to the structure on which it is placed, in order to prevent the risk of spilling or tipping over.

Contractors or third parties working on site must ensure adequate fuel and waste oil handling procedures and controls are in place where necessary.

Appendix 10: Organoleptic Assessment of Trout

QTUK on-farm protocol for tasting prior to harvest for human consumption:

Gut and clean trout thoroughly.

Cook the trout without spices or salt in a microwave for 2-4 minutes, depending on the power output of the appliance.

Assess the aroma of the cooked trout which must be characteristic of cooked trout, but specifically free from off, earthy, musty, fusty, mildewed, stale and dank odours. The aroma must be categorised from the following:

"no off odour" "slight odour (specify)" "strong odour (specify)"

Assess the flavour of the cooked trout which must exhibit the delicate flavour of cooked trout, but specifically free from off, earthy, musty, fusty, stale, mildewed, mouldy taint. The flavour must be categorized from the following:

"free from taint" "slight taint (specify)" "strong taint (specify)"

It is recommended that a minimum of 2 persons perform the assessment.

The detection of "slight odour" or "slight taint" in the initial assessment will require a repeat assessment to be carried out. "Strong odour" or "strongly tainted" trout must not be harvested.

Failure to prevent the harvest of tainted fish will require as remedial action the submission to the QTUK Technical Advisory Committee of a Risk Assessment concerning the on-farm detection and prevention of taint.

Appendix 11: Environmental Guidelines

Please find below a guide to the areas that must be assessed by QTUK farms when consideration is given to the inputs to and outputs from the farming system and their effect on sustainability and the environment.

These are where applicable under legislation:

- Operation within the discharge consent set by and agreed with the relevant authorities
- Operation within the abstraction licence set by and agreed with the relevant authorities
- Verification of the quality and sustainability of the fish feed used
- Demonstration of the responsible use of medicines and therapeutics with a view to a reduction in their use
- Raised awareness of environmental improvement via the display of a policy statement highlighting good practice and addressing environmental concerns.

Environmental Strategy

As a guide the following table is provided as an example of the areas that management must consider when devising and revising an environmental management strategy (EMS):

Section	Categories	Parameters	Monitoring	Plan
Immediate Environment	Air	Pollution & Appearance	Records	
	Land	Pollution & Appearance	Records	
	Water	Pollution & Appearance	Records	
		Site Consent parameters	Regular monitoring & results	
	Flora & Fauna	Protection; Plant & Animal diversity	Biological monitoring & results	
Stock	Feeding	Usage & management	Records	
	Treatment	Veterinary Health plan	Document & Records	
		Chemicals & release to environment	Records of use/release and biological monitoring.	
	Escapes	Define systems & back ups	Records	
Waste	Site Rubbish	Feed packaging	Re-use & disposal	
		R&M waste material	Re-use & disposal	
		Redundant equipment	Re-use & disposal	
	Mortality	Legal disposal regularly	Records	
		Emergency disposal	Records	Disposal plan for emergency
		Veterinary Health Plan	Records	
	Discharge	Site Consent parameters	Records	
	Feed	Site consents with regard to suspended solids / discharge	Compliance with consents / FFM guidance	
Energy	Fuel	On site usage	Records	
		Delivery of fish to processor	Information from carrier	
	Electricity	On site usage	Records	
All supply sources	Feed Building material Chemicals Fuel. Electricity	Sustainability & carbon footprint?	Supplier certificates.	

Appendix 12: Veterinary Health, Biosecurity and Welfare Plan (VHBWP)
October 2018

The VHBWP must be prepared by each fish farming company in collaboration with their veterinary surgeon.

Each VHBWP must be developed specifically to cover the health and welfare requirements of individual farms or sites. The VHBWP is an organic document which must take into account current scientific and technical knowledge to ensure best practice and must be subject to regular review. Points to consider in the development of a VHBWP must include:

Farm Details

- Responsibilities
- Map references, registration numbers
- Contact details of responsible members of staff (including nomination of key staff and named veterinary advisor)
- Farm History, Treatment and Welfare (including endemic disease)
- Information on known, expected issues
- Previous years' data summarised and signed off by managers
- Grading
    - Details of planned frequency and procedures for grading
    - Fasting policies
- Welfare
    - any routine monitoring, methods of assessment

The prescribing veterinary surgeon must be informed of any other medicines being administered; adverse reactions sometimes occur.

Farmers must report to the veterinary surgeon, the supplier, any suspected adverse reaction to a medicine in either the treated fish or farm staff who have had contact with the medicine. This would include unanticipated failure of treatment or vaccination regimes.

Where appropriate veterinary surgeons must use the formal reporting process for these.

Record the adverse reaction on the farm either in the medicine record log or by keeping a copy of the VMD adverse reaction form.

The proper use of anaesthetics must be addressed in the Veterinary Health, Biosecurity and Welfare Plan.

If co-operating with assurance schemes that monitor medicine usage, medication documentation and withdrawal period compliance, farmers must take welfare into account and not be constrained from preventing suffering of fish stocks.

Treatment

Accurate information must be provided to the attending veterinary surgeon so that correct dosages can be calculated for the fish concerned. Ensure that clear instructions for medication, dosage and administration are obtained and are communicated to the staff responsible for treatment.

The recommended course of treatment at the correct dosage must always be completed. The medicine must be dispensed in an effective manner and carefully administered. In the event of the inability to complete the course due to adverse weather conditions or where fish welfare would be compromised, treatment may be terminated. Where treatment is terminated this must be recorded.

To ensure the end of medication is accurately determined, the feed bin or hopper must be cleaned to avoid contamination of non-medicated feed.

Farmers must monitor medicine usage and consider, with the veterinary surgeon, the potency of various products that might be used.

Eggs must be disinfected before use.

Surveillance

The farmer must be aware of his/her responsibilities for the safe use, storage and disposal of medicines. Farmers must adopt recording systems that provide a framework for identifying disease problems and allowing appropriate changes to management practice. This can lead to a reduction in medicine use.

Vaccination Procedures

The VHBWP must incorporate a vaccination programme to protect fish from diseases which may represent a risk to the fish, and for which an effective, authorised vaccine is available. Equipment used in vaccination must be maintained in a hygienic manner. Booster vaccinations carried out must be administered whilst the fish is still protected by the previous vaccination.

Disease Surveillance and Health Checks

Appropriate health and welfare assessments and surveillance should be discussed and developed in conjunction with the farms advisers, veterinary surgeons, nutritionalists etc

Biosecurity

Passive transmission of infectious agents including by birds must be minimised by:

- o Good hygiene routines in handling mortalities
- o Good feeding practice which minimises wastage.
- o Attention to measures designed to exclude birds from direct in-pen contact;

Farm Improvement Strategy

Past performance reviews should be carried out and annual summaries prepared covering fish growth, health and welfare to assist the farm in going forward.

Sea Lice (if applicable)

Appropriate plans should be developed for monitoring, timing of treatments and participation in any area plans in place for other species.

Review

Regular review of VHBWP to ensure actions/strategies are appropriate and effective is recommended.

Training
Training programme in place to ensure competency in management practices including:

- o Fish health/welfare
- o Harvesting procedures
- o Management practices such as crowding and grading
- o Chemical use/handling.
- o Handling and storage of feed

Technical Note 1 July 2021

Approved Products For The Treatment Of Farmed Trout

In the development of this Technical Note, the Board and TAC of QTUK Ltd would like to express specific thanks to: Robert Hughes (Trout Technical Sales Manager, Skretting UK), Hamish Rodger PhD, (Vet Aqua International) and Peter Scott MSc, BVSc, FRCVS, (Biotope).

VACCINES		
AquaVac RELERA (Active Ingredient : Inactivated cells of Yersinia ruckeri, (Hagerman type 1 strain) Inactivated cells of Yersinia ruckeri (SP/07/04 Strain)	MSD Animal Health	Rainbow trout
AquaVac ERM (Active Ingredient : Inactivated cells of Yersinia ruckeri, (Hagerman type 1 strain)	MSD Animal Health	Rainbow trout
AquaVac ERM Oral Inactivated cells of Yersinia ruckeri, (Hagerman type 1 strain)	MSD Animal Health	Rainbow trout
Alphaject 2-2 A.salmonicida & IPNV oil based vaccine Uncertain availability	Pharmaq	Salmon
Alphaject 3000 A.salmonicida & Vibrio oil based vaccine	Pharmaq	Not UK licensed requires SIC
Ermogen Yersinia ruckeri, Uncertain availability	Elanco (was Novartis)	Rainbow trout
Furogen 2 A.salmonicida Uncertain availability	Elanco (was Novartis)	Salmon
Birnagen Forte AS A.salmonicida & IPNV oil based vaccine Uncertain availability	Elanco (was Novartis)	Salmon

Other vaccines may be imported under licence if a need exists.

Also autogenous vaccines (for use on a site where an organism was isolated) may be made if a need exists

ANAESTHETICS		
Tricaine	Pharmaq	Fish
Benzoac Vet	No current UK licence, brought in under SIC	Salmon & trout

PHARMACEUTICALS

ANTIBACTERIALS		
Vetremox (Amoxycillin)	Pharmaq	A.salmonicida in salmon
Aquatet (Oxytetracyline)	Pharmaq	A.salmonicida in rainbow trout
Tribrissen, Sulfatrim (Potentiated Sulphonamide)	No current UK licence, brought in under SIC	
Florocol (Florfenicol)	MSD Animal Health	A.salmonicida in Salmon
Oxolinic Acid. as Branzil or Linacivet	No current UK licence, brought in under SIC	
ANTIPARASITIC		
Aquacen (formalin)	No current UK licence, brought in under SIC	
Pyceze (Bronopol) Uncertain availability	Elanco (was Novartis)	Fungus Salmonid eggs, rainbow trout or Salmon
Salmosan (Azamethiphos) Uncertain availability	Elanco (was Novartis)	Sea lice salmon
Excis (Cypermethrin) Uncertain availability	Elanco (was Novartis)	Sea lice salmon
Slice (Emamectin)	MSD Animal Health *NB - Slice has a zero withdrawal for salmon but a default of 600^{o}days for rainbow trout*	Sea lice salmon
Hydrogen Peroxide	Non listed	
Calicide (Teflubenzuron)	Nutreco	Sea lice Salmon

NB: The use of Malachite Green is not permitted in food fish.

NB: Clove oil and phenoxyethanol are NOT licensed for food fish in UK and should not be used in food fish destined for the table

Veterinary medicines including vaccines licensed in other food species may also be used on cascade under veterinary prescription or brought into the UK from the EU under SIC or the ROW under STC. Under cascade generally a minimum of 500° days' withdrawal is required. The cascade system is operated sensibly; when treatments are unavailable it is permissible to use licensed foreign treatments where available. If a treatment is available for use in another food species then it can be used for fish but at the default withdrawal period. This may create a situation in that effectively fish cannot be marketed at the normal time if treated. However should the treatment not be used then a fish husbandry/welfare issue may result. In such instances, scheme members should consult with their designated veterinarian.

The cascade system is under review

OTHER TREATMENTS

A variety of other products are used, primarily via the water as disinfectant/biocidal treatments bordering on medicines. Other additives in feed are used. As with all treatments their use must be documented

Traditional remedies such as Chloramine T, formalin, salt, potassium permanganate, sodium percarbonate, etc

Technical Note 2: Farm Hygiene

It is important that QTUK members are able to demonstrate their awareness of the need for hygienic practices on their farms to ensure freedom from contamination of the harvested fish and also to contain and prevent the spread of fish disease organisms. The requirements for farm cleanliness and pest control are detailed in section 2.1 of this Standard and, to ensure best practice, cleaning routines for buildings, equipment and clothing must be established and documented. These must include the storage and protection of materials, feeds and equipment.

Procedures must also be established for hygiene practices to exclude fish disease from the farm and to contain and prevent the spread of fish disease organisms within the farm. These practices must include the cleaning of equipment used for handling and moving fish (nets, pumps, pipes, graders), the provision of cleaning of appropriate protective clothing and the separation of equipment used between separate fish stocks or areas of the farm.

Visitors

Visitors are requested to declare any contact with other fisheries or fish farms within the previous 48 hours and, if necessary, instructed to carry out an appropriate hygiene procedure including disinfecting footwear or donning protective clothing.

Footbaths

Areas within the farm must be identified where obvious separation of different stocks of fish exists e.g. a hatchery area separate from an ongrowing area, tanks separate from ponds. Footbaths must be positioned at an appropriate point between these areas in order that personnel moving between the areas dip their footwear. The provision of footbaths within the farm must be appropriate to the size and set-up of the farm and the disease risk present. Only approved disinfectants must be used (see Appendix 3 of the Farm Standards). Disinfectants in footbaths must be active and replenished as necessary. The provision of a boot brush is advised. Footbaths must be covered if there is a risk of dilution by rain. Disinfectant sprays are an acceptable alternative to footbaths.

Hand cleaning

To minimise the risk of the transfer of pathogens on the hands to vulnerable stocks of fish e.g. from on-growing areas into hatcheries, it is recommended that a suitable antibacterial hand cleaner or antiseptic wipe be used.

Handnets

Handnets must be maintained in a clean condition. Separate handnets must be used for different stocks of fish, preferably separate nets for each tank/pond. Handnets must be disinfected periodically and rinsed in fresh water before further use. Nets used for mortality removal must be cleaned and disinfected after use.

Vehicles

Sites must have a documented procedure for the hygiene of their live transport vehicles. This must cover the removal of organic matter, cleaning of the surfaces and disinfection. (Reference: Appendix 3, Reference Point 3)