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BIO Stiftung Schweiz Weststrasse 51 CH-8570 Weinfelden

AquaGAP Standard For Good Aquaculture Practices

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The programme and further information on the AquaGAP Standard are published on www.aquagap.net.

Comments and suggestions about the contents of this document can be sent by email to info@aquagap.net.

Standard holding body

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AquaGAP - Good Aquaculture Practices

A. Application of this standard - Species

This standard has been designed to be applied in a generic way. In other words, it applies to all farming/processing methods and species worldwide. If required in exceptional cases, species specific guidelines will be added. Any guidelines given in a species specific section override the equivalent section in the generic part of this standard. This standard only applies to seafood from culture (not capture fisheries). Where the term fish is used in this standard, it applies to all seafood (including e.g. mussels, shrimps and crabs).

B. Standing of this document

The term “shall” (category A or B in the checklists) signifies a requirement. Where the requirement only needs to be met within the first three years after first certification, the term shall is used together with an explanatory note. The term should (category C in the checklist) signifies a recommendation, which, depending on the nature of the hatchery/farm/processing procedures, may turn into a requirement.

C. Auditing and certification

Audits are to be carried out annually by a certification body approved by the standard owner. Initial audits shall be announced in order to ensure the presence of the farm manager, that all units are accessible and can be visited, the processing unit is running and harvesting/live transport/slaughtering can be verified. Where feasible, the annual update assessments shall thereafter be done unannounced. Auditors are obliged to use the checklists provided by the standard owner.

D. Guiding documents for the implementation of this standard

The following documents can be obtained from the standard holder in preparation for the audit:

- AquaGAP checklists and operator profile*
- AquaGAP Training manual
- Training manual on ICS (internal control systems)
- Stakeholder information leaflet*
- Template for the calculation of Fish Feed Equivalence Ratio (FFER)*

*Free of charge

E. Principles

Some criteria and performance metrics are verified by process and are therefore only of a descriptive nature. Where possible, however, measurable metric-based indicators are used. This standard procedure is a living document and will be reviewed on an ongoing basis. Since it is believed that certain species are more suited for sustainable farming than others, AquaGAP tries not to allow for lower sustainability of the overall farming due to species specific parameters (e.g. higher levels of fish protein required in feed) and therefore attempts to keep this standard generic. The aim of this standard is to improve aquaculture practices and bring more sustainable seafood products to the market. Existing lack of knowledge for specific species/culture methods shall not impede the development of such sustainable products.

AquaGAP Standard

0 HISTORY AND INTRODUCTION

0.1 SCOPE OF ACTIVITY

The scope of activity needs to be defined prior to the audit. All units involved in the production of seafood (e.g. hatchery, grow-out farm, feed mill, processing plant/exporting company, importing company) need to be audited according to these standards or hold a certification which has been benchmarked with these standards.

Compliance with these standards shall be audited by an auditing body approved by the standard holder. First year audits shall be carried out announced. From then onwards, where feasible, but at least once every three years, they shall be carried out unannounced. Audits shall be carried out together with the responsible farm managers/staff and not for example solely with sales managers. The same auditor shall not audit the same operator for more than 3 consecutive years. Auditors must comply with the minimum experience and education requirements (in aquaculture sciences and auditing techniques) defined by the standard holder.

0.2 CHANGES TO FARM OPERATIONS AND/OR PROCESSING PROCEDURES

The certified operator or operator under assessment shall submit a description of all operations/procedures. This shall be done in the form of the operator profile provided by the certification body. All information in the operator profile must reflect the current situation. Therefore, the operator profile shall be updated and resubmitted whenever certification relevant changes are to occur. Such changes typically include

- Changes in land ownership or leasing agreement
- Changes in suppliers
- Changes of farm inputs (e.g. chemicals, drugs, feed, fish stock)
- Changes in assortment/recipes
- Changes in activities (e.g. stunning procedures, filleting)
- Changes in the management

The operator profile shall at all times be complete and up to date, and include the whole operation, all equipment and all activities (reference to the internal quality manual is a good alternative). The scope of the certification shall be very clear from the operator profile.

0.3 ACCESS TO INFORMATION

All information required to verify compliance with these standards shall be prepared by the operator prior to the audit and made available for the auditor. Therefore, all documentation (e.g. original book keeping, farm diaries and veterinary reports) must be kept for 3 years. Unrestricted access for the auditor to all premises must be guaranteed by the operator.

1 QUALITY ASSURANCE

1.1 OTHER STANDARDS OR PROGRAMS IMPLEMENTED

Operator certification

Existing certifications shall be acknowledged where they meet the requirements of this standard (e.g. ISO 22000, IFS, BRC), in order to reduce further auditing requirements.

Supplier certification

According to section *2.4 reception and dispatch of goods*, all incoming products shall comply with the AquaGAP standard and accompanying documentation that verifies this status shall be kept on site. A system shall be in place to ensure all suppliers and their products are certified according to the delivery documents.

1.2 STAKEHOLDER

Communication with stakeholders shall be undertaken in order to recognize and resolve any conflicts of interest. Typical stakeholders can be users of the same resources, neighboring farms and villages, NGOs, government agencies etc.

All operators are obliged to demonstrate awareness of stakeholders. All stakeholders shall be identified and, if relevant, informed by the operator on the assessment/certification procedure (e.g. by local advert or oral communication). This shall occur at least 30 days prior to the official audit. Contact details of the control body carrying out the assessment shall be given to the stakeholders. An information leaflet can be provided by the certification body.

If any internal or external complaints occur during the assessment procedure, the certification body shall respond to these complaints. Any necessary, corrective measures shall be logged by the operator.

1.3 MANAGING COMPLIANCE WITH STANDARDS AND LEGISLATION

A prerequisite for certification is the full adherence of the operator to all local, national and regional regulations, with all required licenses being in place and valid and with no pending issues to be resolved with respective authorities. A full list of required licenses shall be supplied to the certification body upon request.

The operator shall have evidence that land rights are clear and the operator owns or leases the production area.

Where government bodies do not provide the know-how, regulation or monitoring to comply with this standard (e.g. waste treatment, ground water use, assimilative capacity of farm site), the required assessment/monitoring shall be carried out the operator applying for certification or through a subcontracted company (e.g. a company specialised in environmental impact studies).

All operators shall identify a qualified staff member responsible for the implementation and maintenance of compliance with these standards. The operator should have an appropriate quality manual defining internal procedures and responsibilities in order to maintain compliance with all relevant regulation.

1.4 SELF EVALUATION

It is recommended that the companies carry out a full internal self evaluation at least once per production cycle, in order to assess the structure, functioning and coverage of the existing quality assurance, as well as compliance with this standard. A practical guide to such assessments can be the AquaGAP checklists. The outcome of such assessments and any shortcomings should be documented and necessary corrective measures implemented accordingly. In this sense, the operator should continuously strive to improve management practices.

1.5 DEALING WITH COMPLAINTS

As a measure for internal quality control, it is important that all complaints are used to correct any shortcomings in production/farming (complaints can also apply to e.g. social responsibility). All complaints shall be recorded and a responsible staff member shall be assigned to follow the complaint through. Any outcome (e.g. recall, money returned) shall be recorded together with the date, staff in charge and any further corrective action to be taken.

2 SITES AND FACILITIES – MANAGEMENT AND MAINTENANCE

2.1 SITE SELECTION

As a prerequisite to certification, the operator shall be located in a suitable area. For example, it is not the aim of this standard to compensate for bad site selection by regular treatment of prevailing disease or to use constant chemical treatment to compensate for bad water quality. In this sense, an environmental impact assessment should define the feasibility of farming practices and the assimilative capacity (potential loading) of the local environment. All land-based units shall be located above the high tide water mark.

2.2 IDENTIFICATION OF AQUACULTURE AREA

Each operator undergoing assessment shall provide the certification body with an up to date map of all production sites including all relevant details such as;

- date
- description of units shown on map (e.g. stores, tanks, treatment ponds, canals)
- exact location and number/name of cages/tanks/ponds
- all potential sources of contamination
- natural currents affecting the aquaculture system and water flow within the unit

2.3 SITE ENTRY / MAINTENANCE

Depending on the local situation and the operator's risk assessment (see *4.1 assessment of environmental risks*), physical barriers should restrict access to the aquaculture holding areas. If this is deemed necessary, it shall be ensured that the farm area can be easily circumnavigated. Alternatively, a designated passage shall be made available to the public to guarantee access to local natural resources. It is further recommended but not required, that local inhabitants are allowed access to the farming area to collect natural resources (e.g. fruit, herbs and algae around the banks or from sedimentation ponds).

All visitors to the actual farming area (not authorized local inhabitants) shall be recorded in a visitor's book stating at a minimum the following:

- Date and time of entry
- Name, signature and company
- Reason for visit
- Recent contact with other aquaculture hatcheries/farms (last 48 hours)
- Health status of visitor (processing only)

General health and hygiene practices shall be adhered to by all visitors (see 3.2 *hygiene and health*).

The visual impact of the farm shall be reduced efforts made to blend in to the natural surroundings. This can be achieved by planting ecologically valuable or appealing plants (e.g. lemon grass, fruit trees). The farm itself as well as the surroundings shall be kept tidy. This includes for example all canals/sedimentation pond banks, woodland and land storage sites for offshore cages. Litter, for example used pet or glass bottles, polystyrene boxes, old nets and feed bags, shall be cleared by the operator and a tidy site maintained. It is recommended to use designated litter boxes, which are maintained by the operator and can facilitate the situation, as well as encourage separation of different wastes and recycling.

2.4 RECEPTION AND DISPATCH OF GOODS

During reception and dispatch of goods (e.g. feed, aquatic stock, medication), their quality and their approval status (company internal decision) shall be verified and recorded (usually in the form of a checklist). This includes the verification of accompanying documentation.

Waste Disposal

Waste shall actively be disposed of in an appropriate manner.

Depending on the nature of the waste, appropriate disposal may include the following:

- Composting and reuse as fertilizers (e.g. sludge)
- Burial, landfill
- Incineration (e.g. biological waste)
- Disposal by a subcontracted competent authority/company (e.g. chemicals, empty containers with residues of hazardous substances)
- Disposal by a competent authority (e.g. general household litter)

It shall be ensured that any waste is disposed of according to label instruction and any appropriate national regulations.

Where feasible (technology available) litter should be separated and recycled. Chemicals and drugs should only be ordered for a specific reason and in a precise quantity (there should be no excess / unused quantity of e.g. medicated feed)

2.5 HANDLING OF DRUGS AND CHEMICALS

This includes detergents, disinfectants, fuels, lubricants, fertilizers, liming materials, paints, insecticides, herbicides, parasiticides, algacides, anesthetics, medication/treatments, vaccinations etc., and any other agent that may be hazardous (e.g. flammable, toxic, irritant) to staff, the immediate environment or to aquaculture stock. All chemicals and drugs shall be handled (use, mixing, storage) in a way that reduces the risk of unwanted health impacts and according to label instructions and national regulation.

Storage

All chemicals shall be stored in a designated area, with access limited to responsible staff. The store shall only contain agents in compliance with these standards. All containers shall conform to label instructions (e.g. chilled, darkened, only glass) and be labeled correctly at all times, even if refilled from larger containers.

For toxic liquids, operators shall ensure that secondary measures can contain 110% of the chemical in the event of a leak. For powders, operators shall assure that they are stored in sealed and well ventilated stores for the event of flooding.

Prevention of impacts from chemical use

Emergency procedures shall be available for all possible emergencies as defined in the risk assessment *4.1 assessment of environmental risks*. Emergency procedures shall describe what to do and who to contact in the case of an emergency (e.g. fire, oil leak).

All staff shall be trained on first appointment and continuously thereafter in internal emergency procedures. Where applicable, warning signs shall be placed to inform staff and visitors of areas where special precautions are required (e.g. flammable store, slippery surfaces).

2.6 FACILITY PEST CONTROL

The operator shall evaluate the risk of pest infestation. Potential pests shall be identified and evaluated together with precautionary measures to be taken. These precautionary measures may include but are not limited to the following (for predators see *4.4 wildlife and conservation*):

- No littering of site
- No open or broken feed bags
- No feed left on the floor of the storage areas, around the tanks, on the feeding platforms, etc.
- No ozonization of warehouses
- Feed bags kept off floor
- Closed and sealed stores (no gaps under doors)
- Fish carcasses removed daily and put in designated area (e.g. composting, removed by external company)
- Domestic sewage treatment

If precautionary measures prove insufficient, measures to control pests shall be taken. Pest control may include but is not limited to the following:

- Mechanical traps for rodents
- Light traps for insects

No toxins shall be used for pest control that are banned in the country of production or may cause a hazard to feed, the culture stock, the environment or staff working on the farm. All chemicals used for pest control must be handled according to *2.5 handling of drugs and chemicals*.

2.7 WATER MANAGEMENT

Good water quality shall be maintained throughout the cycle and shall conform to the requirements of the species in question (e.g. temperature, salinity, pH, DO). Ideal parameters shall be given in the operator profile. Water quality shall be monitored at least once a month on intake and outlet (e.g. temperature/pH/salinity and at least one of the following: DO/BOD, ammonium and nitrate concentrations), if feed, fertilizers or any other inputs other than aquaculture stock are added to the water.

Effluents

Where tanks are used, recirculation is recommended, otherwise effluent treatment is required. Where ponds are used, as a minimum, a decantation pond is required. The hatchery/farm shall define metric parameters as a guideline for the receiving waters. These guidelines should be provided by the competent authority (site or water discharge licence) or by a subcontracted environmental impact assessment evaluating the environmental assimilative capacity. If applicable, every operator shall be able to demonstrate compliance with the discharge consent conditions.

Influents

Water holding or pre-treatment is recommended if incoming water may have received untreated human waste or manure.

The hatchery/farm shall define metric parameters as a guideline for the incoming water quality. These guidelines should be provided by the competent authority (site or water discharge licence) or by a subcontracted environmental impact assessment evaluating the health and status of the stock. If applicable, every operator shall be able to demonstrate compliance with the defined water quality parameters.

Nutrient loading of open water cage system

For net cages, a benthic impact assessment shall be carried out during peak biomass of each cycle. This should be carried out by the competent authority or a subcontracted competent company. Where this is not possible (e.g. no competent authority or company), a procedure and indicator values shall be set up by the operator and agreed upon by the certification body.

Water loading/contamination

This refers to effluents from land based systems. Besides the actual chemical composition of the water, suspended solids can also impact on the environment and should therefore also be monitored. In order to reduce sediment loading, dykes shall be kept in good condition and ponds shall be drained carefully and slowly (visual indicators such as water color and suspended solids shall be used as a guide). It is recommended that sedimentation ponds or partial barriers at outlet points retain sludge.

The pH and redox potentials of pond sludge should be monitored. In order to monitor potential impacts of the farming activity on the environment, the chemical composition of the effluents for land based systems shall be monitored and nutrient loading calculated.

Monitoring of water quality shall include the following parameters:

- Temperature
- Measure of acidity (pH)
- Dissolved Oxygen (DO)

- Total ammonia nitrogen
- Soluble phosphorus
- Biochemical Oxygen Demand BOD₅
- Total Suspended Solids (TSS)

A sampling plan and sampling procedures shall be documented and verified during the external audit. Alternatively, sampling can be carried out by a certified laboratory. The sampling plan/procedure shall include information on the following:

- Location of sample taking (e.g. exit point of farm, 1m below surface)
- Time of day (e.g. morning ~6am, second sampling at midday)
- Frequency (e.g. weekly or monthly)
- Number of samples per farm/outlet (e.g. all outlets)
- Status of farm during sampling (e.g. harvesting, fallowing, prior to feeding)
- Handling of sample (e.g. sealed bottle, no air, placed on ice, light exposure prevented)

Calculation of nutrient loading from land based systems:

Load of variable (kg/yr) = farm discharge (m³/year) x annual concentration of variable (10⁻³mg/L and g/m³)

Load index (kg variable/ton) = annual load of variable (kg/yr) / annual production (ton/yr)

Limits

In general, water quality shall not be decreased by more than 10% and not to less than the values given in table 1. If the quality of incoming water exceeds these values, effluent values shall be at least equal or better than the incoming values.

Suspended solids in the effluents shall diffuse within minutes of entering the receiving water. The calculated values for nutrient loading/index shall be used to monitor trends and improvement over time during certification. Further metric or indicator values will be set when more scientific data is available.

Table 1. Requirements for effluent water quality

Variable	Limit (units) Prior to certification	Limit (units) Within first three years of certification	Frequency of sampling
Temperature	No signs of temperature stress	Natural range of species	monthly
pH	6-9.5 (depending on species)	6-9 (depending on species)	monthly
DO	≥ 4 (mg/L)	≥ 5 (mg/L)	monthly
Total ammonia nitrogen	< 5 (mg/L)	< 3 (mg/L)	monthly
Soluble phosphorus	< 0.5 (mg/L)	< 0.3 (mg/L)	monthly
BOD ₅	< 50 (mg/L)	< 30 (mg/L)	quarterly
TSS	< 100 (mg/L)	< 50 (mg/L)	quarterly

2.8 EQUIPMENT AND MACHINERY

All equipment and machinery used shall be maintained regularly and in such a manner, so as to reduce the impact on the environment. For example, fuel and oil leaks shall be prevented. The operator shall ensure that equipment and machinery containing fuels/oils are kept well above the high water mark. Similarly, toxic paints/preservatives and other toxic chemical compounds shall not come into contact with aquaculture stock/water.

All boats and containers used to transport fish or aquaculture feed shall be kept clean. Where equipment is shared between sites/farms, staff and equipment/vehicles shall be disinfected prior to use/arrival on site to reduce the transfer of disease.

Where nets are cleaned mechanically while installed, the operator shall ensure that organic matter does not accumulate on the seabed. Farms situated in high energy environments shall only use robust gear designed for local conditions.

The use of copper-based antifoulants is prohibited.

3 AQUACULTURE LIVE STOCK – MANAGEMENT AND HUSBANDRY

3.1 SOURCE AND QUALITY OF JUVENILE AQUACULTURE STOCK

Juvenile stock (smolts/fry/PL) shall be of good quality. A plan for sourcing certified stock within three years of first certification of the grow-out farm shall be available. Good juvenile stock sources shall adhere to the following:

- Disease prevention control
- Good management practices in hatchery (emphasis on strong juveniles rather than high numbers)
- Stock raised for the grow-out conditions (no transfer into totally different environments)
- Nurseries used where applicable
- Controlled transport

The following is prohibited:

- Use of genetically modified species
- Use of wild caught brood stock with the following exception: black tiger shrimp, for the start-up of new hatchery/species, a small percentage allowed to maintain genetic diversity
- Use of wild caught smolts/fry/PL
- Use of non-native species with no history of safe production in the area

Where there is an existing industry with a non-native species, there shall be strict escape prevention measures in place and there shall be no evidence of any impact on the local ecosystem.

The quality of all stock received shall be indicated on the accompanying documentation.

3.2 HYGIENE AND HEALTH

Hygiene

In order to minimise the transfer of disease, shoe disinfection/change, hand wash and disinfection points should be installed and utilised on entry to areas where food safety or fish health may be at risk (not applicable for extensive farming).

Dead fish shall be removed daily.

For large farms, staff shall have access to toilets, eating facilities and potable water. A cleaning protocol including specification of cleaning agents shall be implemented and cleaning activities recorded.

No human waste or untreated animal manure shall enter the aquaculture system. Disposal of waste (including carcasses) shall be conducted adequately (see 2.5 *handling of drugs and chemicals* / 2.6 *facility pest control*).

Fish health and welfare

In order to maintain fish in good health and ensure the welfare of the animals, stress shall be reduced where possible.

In order to reduce stress, the following measures shall be taken:

- maintain stocking densities at levels, where no signs of stress are evident
- maintain good water quality
- avoid abrupt changes (e.g. salinity, temperature)
- avoid disturbance (e.g. handling/grading, visitors, light)
- use suitable feeding methods (e.g. slow feeding over larger surface area)
- use appropriate net mesh size for the size of fish (e.g. gilling of small fish/preventing injuries of fish and allowing through flow of water).
- where animal welfare is dependent upon automated systems, the systems shall be equipped with alarms and secondary power systems in case of failure
- limit duration of pre-harvest crowding to 1/2 day and pre-harvest fasting to 2 days.
- carry out any live transport under suitable conditions (e.g. max 10 hours, water quality maintained, limited stocking densities)
- limit any time out of water (less than 1 min.)
- anaesthetize animals prior to slaughtering

Aquaculture stock shall at all times be treated and handled in such a way as to protect them from pain, stress, injury and disease. Staff shall be well trained in adequate treatment and handling procedures and shall continuously observe the swimming and feeding behaviour (number of unusually behaved fish shall not be more than 10%), the quality/damage of fins/antennae (number of damaged fish shall not be more than 10%) as well as the general growth performance (please refer to the chapter 3.5 *Monitoring growth and performance*) in order to be aware of any signs of stress (during grow-out as well as transport). Any signs of stress shall be recorded in the farm diary. Individual fish suffering from ill health or injury shall receive immediate treatment or shall be removed and humanely euthanised. All aquaculture enterprises shall have a named veterinary surgeon. Veterinary visits should be scheduled at least annually and whenever required.

3.3 SOURCE AND QUALITY OF FEED

Only compound feed from an ISO 9001 certified feed mill, where feed specifications are available, shall be used. Feed shall not contain fats or protein from the species for which the feed is destined for. The use of for example pro-biotics, compost and algae is recommended. Synthetic fertilizers and home made feed are prohibited.

In order to maintain a high quality product, high quality feed shall be used. Continuous dialogue with feed companies is required, in order to improve the quality of feed used. In this way, companies are obliged to work towards sustainable and quality feed sources.

Within 3 years of first certification, feed for the grow-out stage at the farm level must be sourced from a certified supplier and, in addition to any points mentioned above, shall comply with the following points:

- Species specific feed
- Routine analysis for mycotoxins carried out by feed company or farm
- At least 70 % of animal meal and oil shall originate from certified sustainable fisheries, from certified aquaculture, (e.g. organic, AquaGAP) from processing waste (e.g. trimmings) from alternative sustainable sources (e.g. marine worms), or from countries with acknowledged sustainable fishing practices (e.g. Iceland)
- All vegetable ingredients are from confirmed sources applying good management practices (e.g. not from recent monocultures grown on previous rainforest lands)
- No synthetic pigments added

These standards should also apply to feed used in the hatcheries.

Feed shall be handled and stored in a safe, clean and dry manner and away from any sources of potential contamination and pests such as insects and rodents (*see 2.6 facility pest control*).

Feed traceability

Feed delivery documents, invoices, any certifications and farm diary information on feeding and feed stocks shall be kept (*see 3.4 monitoring growth and performance*).

Feed mills

All the requirements of this standard also concern feed mills. In addition to this standard, feed mill companies shall comply with the local and national labour laws to ensure the safety and adequate compensation of workers. In some cases, feed mill work can be more dangerous than any other seafood processing plants because of the machinery used and work type applied. Thus, safety of employees should be a main concern in the feed mill plants and the working conditions and work practices should be reviewed at regular safety meetings where employees can also contribute to the improvement of safety issues. As a guide, good management practices should be applied in the feed mills to address issues such as safety and working conditions.

Any medicated feed production lines shall be clearly separated from the AquaGAP quality feed. The operator has to handle medicated feed very carefully in order to prevent any kind of contamination.

For the end products, recall procedures should be able to be implemented immediately. Traceability should be able to be applied to every finished product in order to control any

potential contamination. The traceability system should allow feed to be traced back to its source via the internet.

3.4 MONITORING GROWTH AND PERFORMANCE

A record system providing a permanent documentation of each generation/cycle shall be in place. The data recorded shall include origin and initial quantity of stock, type and quantity of feed used, occurrence of disease, any treatments applied, reason for and number of mortalities and final numbers harvested. The data shall allow the calculation of the Feed Conversion Ratio (FCR), stocking densities and stock movement.

With each harvest a traceability sheet shall be provided, indicating the quality and history of the fish.

Prior to every stocking, a harvest estimation for the following cycle shall be made.

FCR

The feed conversion ratio shall be calculated for every generation cycle and the results shall be interpreted and used to improve management practices.

Feed conversion ratio (FCR) = (feed used) / (fish biomass increase)

Within the first three years of certification, the FCR shall be reduced to below 2. After the first three years of certification, an FCR of 1 should be reached.

Fish in: fish out ratio

The FFER (fish feed equivalency ratio) shall be calculated. Only fishmeal and fish oil directly received from wild capture or aquaculture shall be included in the calculation (e.g. no processing trimmings). Calculations shall follow the following procedure:

- Determine weight of fishmeal in feed per year
- Convert fishmeal to pelagic equivalent (fishmeal/0.225)
- Determine weight of fish oil in feed per year
- Convert fish oil to pelagic equivalent (fish oil//0.05)
- Calculate total pelagic equivalent (fishmeal + fish oil, if fish oil not derived from fishmeal)

All information required to calculate the FFER shall be available during the initial audit and can be calculated together with the auditor. The calculation of FFER shall be carried out by the operator prior to all follow-up audits, using the specific AquaGAP template provided by the certification body.

FFER limits

The calculated values for FFER are currently used to monitor improvement over time during certification. Limit values will be set when more scientific data is available. In the meantime, all operators shall achieve an FFER of less than 1 within three years of certification.

Stocking densities

Stocking densities shall be kept at a suitable level so as not to impact on water quality or fish health/welfare. Under standard conditions, stocking densities in ponds/cages/tanks with flow

through water shall not exceed 15kg/m³ and in recirculation tanks shall not exceed 30kg m³. Where health reports and physical examination show no signs of stress due to stocking densities, levels can be increased up to a maximum of 20 kg/m³ and 40 kg/m³, respectively. For flatfish, this can be further increased if not all of the surface area of the bottom/trays is used by the fish.

3.5 HARVEST, TRANSPORTATION & SLAUGHTER

The harvest, transportation and slaughter of fish shall be carried out with consideration given to the environment (e.g. sediment release, escapes), fish welfare (e.g. stress, physical damage, suffocation) and product quality (e.g. clean harvest bins, blood spotting/gaping, immediate cooling after slaughtering). Environment, fish welfare and product quality requirements are additionally covered in the respective chapters.

Harvest

Harvesting shall be carried out as quickly as possible with a maximum of ½ of day pre-harvest crowding. During harvesting, fish shall not be out of water for more than 1 minute .

Transportation

Transportation shall always be carried out in cleaned and disinfected bins/trucks. If fish have already been killed, they shall immediately be placed on ice to reduce flesh temperature to < 5°C, until reaching the processing plant.

In the case of live transport, the temperature and oxygen level of the water and duration of transport as well as of mortalities and physical condition of the fish upon arrival shall be documented. Live transport of harvest size fish should be restricted as far as possible.

Slaughtering

Fish which are not stunned/slaughtered shall be placed on ice (e.g. shrimp). The ice shall be made from potable water sources. Small warm water fish, shall be placed into ice slurry for immediate stunning or killing. The ice slurry shall be mixed and temperatures monitored. Fish shall not be left to suffocate or left partially stunned in warmed water. For every unit of fish there shall be one unit of ice/ice-water. For larger and cold water fish, animals shall be stunned by mechanical or electrical stunning. Staff shall be trained in stunning and the effectiveness of stunning shall be monitored. Directly after stunning, fish shall be bled. Waste blood shall be collected and treated prior to disposal.

3.6 TREATMENTS

All treatments (e.g. chemicals, medications, baths, and vaccinations) shall be recorded (e.g. date, agent, dose, reason for use, vet recommendation, residence time). Medical treatments shall only be applied after a prescription by a veterinarian and only for cases where there is an identified health problem. Records of veterinary prescriptions shall be kept.

All certified companies shall demonstrate clear efforts to minimize the occurrence of disease and application of treatments. Such efforts shall be based on the operator specific risk assessment and shall include, but not be limited to, the following:

- select healthy PL/fry/smolt for stocking (see 3.1 source and quality of juvenile aquaculture stock)
- limit the handling of fish
- avoid stress during grow-out (see 3.2. hygiene and health)
- avoid disease transfer from other stock/farms (see 3.2. hygiene and health)
- regularly remove carcasses
- restrict access of visitors to farms
- if required use hand wash and disinfectant points
- if required limit/treat water inflow into ponds/tanks
- monitor fish for the occurrence of disease

Besides the disease prevention measures described above, all companies shall hold a list of treatments used at the farm and a list of nationally approved treatments (usually provided by governmental fisheries agencies).

The following treatments are prohibited:

- drugs and chemicals banned for use in food production such as chloramphenicol and nitrofurantoin antibiotics
- drugs and chemicals banned in the country of import
- malachite green, crystal violet, tributyltin compounds
- hormones used on grow-out fish as growth promoters or for sex reversal
- antibiotics used as growth promoters or for preventative treatment
- antibiotics, to which there is plausible suspicion or evidence of build up of resistance

4 ENVIRONMENT – MANAGEMENT AND CONSERVATION

4.1 ASSESSMENT OF ENVIRONMENTAL RISKS

One of the main aims of this standard is to enable certified companies to assess any risks that their farming/processing practices pose to the environment and identify any risks of non-compliance with this standard. For this reason, a risk assessment shall be carried out by all companies applying for certification prior to the audit. An example risk assessment, typical risks and template documentation are provided in the AquaGAP training manual. Monitoring shall be planned and implemented according to the identified risks

4.2 MONITORING OF ENVIRONMENTAL IMPACTS

For all risks, regular monitoring shall take place. For example, if feeding is used in open water net cages, there is a risk of accumulation of organic matter on the seabed. Therefore, regular seabed monitoring (biodiversity, sediment quality) shall be carried out below the cages and along a transect (up to 500m), with pictures and sediment sample analysis supporting the monitoring, as applicable. Results shall comply with governmental regulation or values recommended by the relevant authority. If no regulation/recommendation exists, monitoring shall determine redox potential levels below the cages and take place during periods of maximum biomass and within 30 m of cages shall be greater than -100 mV nhe or sulfide levels below 1300 µM prior to stocking fish. Beyond 30m, analysis of invertebrate communities shall show no major change in composition or abundance related to the availability of organic matter.

4.3 ENERGY AND WATER EFFICIENCY

Energy Efficiency

In addition to an overall reduction in energy use, the use of non-renewable energy resources shall be continuously reduced. If the technology is available in the country, 50% of the energy used at the hatchery and farm level shall be sourced from renewable resources or compensated for within 3 years of first certification.

Water efficiency

Water resources shall be used efficiently. Water shall not be exchanged excessively to reduce efforts in water management or to improve effluent values. Besides refilling due to evaporation loss, shall be exchanged. For farms not using fertilizers or feed and no form of medication/drugs, the use of seawater (or brackish river water) is not restricted. For farms not using fertilizers or food and no form of medication/drugs, the exchange of river water shall be recorded and reduced where possible (allowance for rain retention shall be provided for). Rain water shall be retained and used during the dry season, where applicable. Refilling due to evaporation loss is only permitted where dyke height allows for refilling by rain water. Volumes of water pumped shall be recorded.

In order to conserve the use of water, where feasible (when harvesting is carried out by fishing rather than through draining ponds, where water and sediment quality is good and no disease has occurred), ponds should not be emptied after every cycle. Where feasible, recirculation shall be used.

For processing plants and feed mills, the operator shall record water and energy use and shall, where possible, reduce the use of energy and water or switch to renewable resources. All equipment shall be serviced and maintained in good working condition to further reduce the waste of energy and water (e.g. leaking pipes).

Carbon Footprint

The carbon footprint of an activity is a measure of the impact, it has on the environment and in particular on climate change. It relates to the amount of greenhouse gases produced during day to day business through burning fossil fuels for electricity, heating, transportation etc.

A carbon footprint is made up of the primary footprint (a measure of our direct emissions of CO₂ from the burning of fossil fuels) and the secondary footprint (a measure of the indirect CO₂ emissions from the whole lifecycle). Until more metric values can be assessed, this standard only regulates issues on the primary footprint, over which companies have direct control.

In order to reduce the operator's carbon footprint, the following measures shall be evaluated and should be implemented where feasible:

- recycling of waste materials and use of recycled products
- use of renewable energy (e.g. solar, wind and water energy)
- new technology (replace old technology)
- good maintenance of equipment and machines
- reducing transportation, i) use onsite slaughtering, processing and packing where possible ii) ship the product instead of sending it by air.
- reducing packaging
- reducing the use of one-way packaging

- planting trees/vegetation on the farm
- efficient use of resources

4.4 WILDLIFE AND CONSERVATION

Escapes

Efforts shall be made to prevent escapes at all stages during production both at the hatcheries and at the grow-out farms. Preventative measures shall include the following:

- Nets shall be changed safely (e.g. second net installed prior to removing first net)
- Side walls shall be high enough to prevent fish from jumping out of the cage/tank
- Nets shall be checked at least once per week
- In high energy environments, special robust equipment shall be used
- Screens shall be fixed at all inlets and outlets
- The mesh of screens shall be small enough to catch the smallest living stage (eggs/ larval forms/ juveniles) in culture (if there is reproduction in the pond/tank/cage, this shall be taken into account when selecting the screens)
- In addition to primary screens, dry-bed gravel/sand filters or secondary screens shall be installed for all effluents

Exact stocking numbers, mortality rates and harvest numbers shall be recorded to verify elimination of escapes. Any evidence of escapes shall be reported to the competent authority and recorded on site.

Predators

As part of the risk assessment, any endangered species in the surrounding area shall be listed and precautionary measures shall be taken to minimize any risk to such species. In addition, any predators shall be identified and measures to deter them from harming themselves or the aquaculture stock defined. Typical deterrent measures may include the following:

- Top nets can deter birds (the mesh shall be of an adequate size and the nets shall be tensioned sufficiently and be free of holes to avoid entanglement)
- Scarecrows and fake shots can also deter birds
- Fences around the premises
- Low fences around ponds can impede crabs entering the ponds
- Multiple screens at the water intake can reduce the inflow of predator fish into the ponds
- Secondary predator nets can deter seals (predator nets shall be tensioned adequately)

Predator prevention shall be carried out in a way so as not to harm the predator or other species. Therefore, the following deterrents are prohibited:

- the use of acoustic deterrent devices (e.g. for seals)
- the use of lead shot (both for scaring and killing)
- any device causing the predator to suffer

Erosion

Erosion and sediment accumulation in ponds and canals shall be reduced as much as possible. Methods used shall include the following:

At least 50% of total dyke surface shall be covered by plants within three years of first certification.

Where planting vegetation on dykes and banks is difficult, gravel/stone shall be used.

If neither planting or the use of gravel is feasible, plastic lining may be used.

Sediments

Frequency of canal dredging shall be reduced as far as possible. If sediments are removed from brackish water ponds, salt- and nutrient-laden sediments shall not be dumped unplanned. Sediments shall be used to repair dykes or spread thinly and used, for example, for vegetable gardens.

Groundwater

Where accessible, mains/tap water, seawater or rain water shall be used. Well water may only be used where mains/tap water is not accessible, . If well water is used for hatcheries or grow-out farms, abstraction volumes and ground water levels shall be monitored and compared to reference values. If groundwater levels decline or there is evidence of ground subsidence, well water shall no longer be used. It is recommended to have a rainwater store. For the salinity control in grow-out ponds, well water shall not be used.

Salinization

The growth of vegetation in the surrounding area (e.g. rice fields) shall be monitored for indication of salinization of the soil due to seepage of brackish water from the ponds. In order to minimize salinization of surrounding soils and water, saline effluents shall not be discharged into freshwater rivers/canals, and chloride levels shall be monitored in nearby freshwater wells.

Biodiversity

There should be concerted effort made to enhance the environment and biodiversity on the farm. Consideration should be given to the conversion of unproductive sites to conservation areas to encourage the growth /return of natural flora and fauna.

Wetlands

Farms and hatcheries shall not be situated in former ecosystems of high sensitivity (e.g. mangroves/wetland/primary forests) that were converted to farmland after 1980. Where individual trees have been cut for visibility (roads) an area equivalent to 50% of the surface area cut shall be reforested within the first 3 years of certification.

5 RECORDING SYSTEM

5.1 CHECK ON PLAUSIBILITY OF PRODUCT FLOW

During each annual audit, a sample calculation shall be carried out to verify the feasibility of

- feed consumption in a specific time period in relation to growth and performance data
- feed bought in and consumed in a specific time period

- number of animals stocked, number of mortalities and quantity harvested in a specific production cycle

5.2 TRACEABILITY

The final processed product shall always be traceable back to the farm. At the farm level the fish should be traceable to the respective cage/pond/raceway/tank as well as back to the hatchery and broodstock of origin. All processing steps shall be documented and yields recorded. The history of each batch shall be recorded on a traceability sheet (alternatively in a software system), showing origin, identification number, date and number of harvest, any treatment and withdrawal period. A documented mock recall test shall be carried out annually. Quantities (kg) of product received shall be possible to calculate through processing to final sales data.

6 STAFF

6.1 OCCUPATIONAL HEALTH AND SAFETY POLICY

It is recommended to appoint a senior staff representative responsible for the health and safety of all personnel. It shall be ensured that staff are not exposed to dust, noise, harmful gasses of other hazardous substances.

Depending on the nature of the work, appropriate protective equipment shall be provided by the operator and staff shall be trained in its correct use. Protective equipment may include, but is not limited to, the following:

- Respiratory and eye protection devices (e.g. for staff working with chemical agents)
- Ear protection devices (e.g. for staff working in machine rooms)
- Gloves (e.g. for staff handling liming materials)
- Life jackets (e.g. for staff working at offshore cage sites)

Similarly, first aid and emergency equipment (e.g. fire extinguishers) and important contact numbers shall be displayed in a prominent place available to all staff. The operator shall ensure that any emergency and warning postings are written in a language understood by all staff.

6.2 STAFF TRAINING

All staff shall be trained on first appointment and continuously thereafter. Training shall include information on all on site operations, first aid, the use of safety equipment, their social rights and duties, as well as any particular task relevant to the responsible staff (e.g. diving operations shall comply with health and safety regulations at all times). Diving is a potentially dangerous activity that may affect worker safety and health; this certification does not include regulations, limits or documentation required for any diving activities undertaken to support the aquaculture operation.

Training and any outcome of assessments shall be documented (as a minimum the date, topic and list of participants). For specialised topics (e.g. first aid, diving safety) it is recommended to use external training by a competent authority/company.

All staff working in the processing plant shall be trained in food safety and comply with the hygiene requirements laid down in the quality manual (e.g. hand wash and disinfection, gloves, clothes, black and white zones).

6.3 SOCIAL RESPONSIBILITY

The operator shall comply with national labor laws and have a copy of these on site. Besides, additional requirements are set to ensure the workers` safety and minimum social rights and duties.

Forced/child labor

The operator shall ensure that there is no forced labor or form of corporal punishment. The operator shall guarantee that there is no work carried out by staff younger than 15 years old that includes heavy weights or risky operations. Any work carried out by staff younger than 15 shall not be carried out for several hours daily obstructing the child from attending school, sports or playing activities. The operator shall actively pursue any indication of forced or child labor in order to resolve the situation. The operator shall know the ages of all staff.

Employment conditions

All permanent staff must hold a written contract. In exceptional circumstances (e.g. in countries where there is no tradition of written contracts and where, from a legal point of view, these have no benefit to the owner), oral agreements shall be sufficient. However, agreements shall be agreed upon and clearly understood by both parties. With casual workers it must be clear for both sides what the working conditions, responsibilities and terms of reference are. Wages shall be paid regularly.. Salaries shall be above the minimum level set by national labor laws and suitable for the type of work carried out. If any form of monetary punishment is to be applied in cases of failing to comply with the work agreement, this must be clearly set out in the contract/agreement in advance.

The operator shall actively ensure that staffs are not exposed to any sort of discrimination due to gender, race, religion etc.

The working agreement shall further outline rights and duties of both sides and shall be dated and signed by both parties. Rights and duties shall include issues such as weekly working hours, overtime and payment thereof, basic coverage for retirement, maternity and sick leave, medical and unemployment insurance. All issues must be compliant with local legislation.

The employer shall allow and encourage associative activities and collective bargaining. Further, the operator shall encourage regular meetings with all staff.

Living quarters

All staff shall have the choice to live in their own private accommodation or in accommodation provided by the operator, if available. If living quarters are provided on site by the operator, they shall be habitable and have the basic services and facilities.

7 POST HARVEST HANDLING, PROCESSING AND MARKETING

7.1 POST HARVEST HANDLING

For harvesting, transport and slaughtering, see *3.5 harvesting, transport and slaughtering*.

The processing plant shall ensure that these steps are in compliance with this standard if they fall under their responsibility.

From the moment fish are harvested (if not stunned/slaughtered, e.g. shrimp) or from the moment fish are slaughtered, all seafood shall be put on ice/in ice-slurry to cool as quickly as possible and the temperature maintained below 5°C throughout chilled processing

Temperatures shall be monitored and recorded according to the internal HACCP plan. Incoming goods and accompanying documents shall be verified for their quality and compliance with this standard according to internal checklists.

A lot number system shall be used allowing traceability from the incoming batch through each processing step to the final outgoing sales product. During each stage of product receipt, processing and storage, the product shall be identifiable by lot and certification status. If products are stored for more than several hours or if there is a separate freezing unit, a stock record shall be maintained. All stored products (apart from temporary day storage) shall be labeled appropriately with direct reference to traceability documentation. Traceability documentation shall allow reference to information on the history of the products (feed, treatment, farm, broodstock of origin etc) and the certified quality.

7.2 PROCESSING

For each product the approximate processing ratio (yield) shall be known and for every product with several ingredients and / or processing aids, the recipe shall be documented. For all ingredients and processing aids not originating from aquaculture, the specifications of the manufacturer shall be available. The recipe shall indicate percentage and quality of each ingredient. Multi ingredient products shall only contain aquaculture products certified according to this standard, wild fish certified according to the MSC Fishery or the Naturland Wildfish standard or agricultural products from sustainable sources (e.g. organic or approved by the control body).

7.3 PRODUCT SPECIFICATION

For each product and client there shall be a detailed product specification. Processing additives and processing aids (e.g. phosphates, metabisulfite) shall only be used according to client product specifications and shall comply with regulations in the country of production as well as in the country of import. All additives/aids shall be listed in the recipe (if applicable) and declared to the end consumer.

7.4 CLEANING

The quality manual shall contain a section on cleaning including a cleaning plan, a list of approved cleaning agents and methods of use, as well as approved protocols to be completed on site during cleaning. All cleaning agents shall be approved for food quality processing. The same shall apply to facility pest management. No pest control shall be used where direct contact with the food product may occur. A pest management plan shall be included in the quality manual.

7.5 SEPARATION

Separation of processing shall be ensured for different risk levels (risk of pathogenic microorganisms, primary processing vs. ready to eat). Temporal or spatial separation of processing shall be ensured for different qualities (AquaGAP certified and non-certified). If products of different qualities are processed on the same line separated in time, the production line shall be cleaned between processing the two lots of different quality. All

machines used shall be maintained in good working condition (see also chapter 2.8 equipment and machinery).

7.6 FOOD SAFETY

HACCP Plan

The plant shall have a quality manual including a HACCP plan. The following steps should be included in the HACCP:

- I. All relevant information for product safety shall be included in the product specifications (e.g. ingredients, treatment, packaging, storage life, storage-and transport conditions). Please see also 7.3 Product specification
- II. A flow diagram shall be established and verified
- III. The flow of each product, product category or process through the operation shall be documented, including all steps from raw material selection through processing, storage and distribution.
- IV. Hazard analysis shall be conducted and all potential hazards associated with each processing step shall be listed and evaluated as follows:
 - (1) Identify hazards which need to be prevented, eliminated or reduced to acceptable limits. This includes hazards present in raw materials and those introduced during the process. The preceding and following steps in the process chain shall also be taken into account. Potential hazards can be biological (e.g. microbes), chemical (e.g. pesticide) or physical (e.g. glass fragments)
 - (2) All identified potential hazards shall be evaluated and used on the severity of the potential hazard and its likelihood to occur. Depending on the outcome of this evaluation, potential hazards shall be addressed in the HACCP plan.
- V. Critical control points (CCP) shall be identified

CCP are specific points, procedures or steps in production from raw state through processing and shipping to consumption where a potential hazard can be identified and reduced, eliminated or prevented through control.
- VI. Limits for each CCP shall be established

Critical limits shall be defined in order to identify whether food safety is at risk.
- VII. A monitoring system for each CCP shall be established

The monitoring system shall track compliance and indicate, when there is a risk of loss of control. The monitoring documentation provides evidence of verification.
- VIII. A corrective action plan shall be established in advance.

This shall include corrective action to be taken when critical limits are exceeded. The hazard requiring corrective action shall be defined, corrective actions shall be documented and the segregation of non-compliance products shall be ensured.
- IX. Verification of procedures shall be established

Methods to verify the functioning of the HACCP shall be in place (internal audits, analyses, review of records to look for exceeded limits). In addition, the use of the HACCP plan shall be reviewed regularly to ensure that it is scientifically and technically sound.

X. HACCP documentation and record keeping

Records of hazards and their control methods shall be kept and the monitoring of safety requirements as well as the corrective measures shall be documented.

The HACCP plan shall be implemented by a HACCP food safety team. The HACCP team shall have a designated and qualified team leader who is trained in HACCP.

Record keeping and documentation control

All documents shall be up to date, correct and properly authorized. Requirements for record retention (see also chapter 7.3) shall be met. Handling of complaints shall be managed as outlined in chapter 1.5. The traceability (see chapter 5.2) during individual processing steps as well as when the product leaves the company shall be recorded and products shall be clearly labelled as AquaGAP.

Facility requirements

Walls, floors and ceiling shall be designed, constructed, finished and maintained to prevent the accumulation of dirt, minimize condensation and mould growth, allow drainage and facilitate cleaning. Appropriate precautions shall be taken to minimize the risk of contamination by metal or glass (see also HACCP plan). Metal and glass shall only be used where not avoidable and glass shall be protected against breakage.

Food grade quality

Ice shall be manufactured from potable water. Similarly, any transport of ice (e.g. to farms) shall be carried out in clean food quality containers. Water quality reports (e.g. analysis of bacteria, heavy metals) shall be available. All other food additives (e.g. salt) shall be of food grade quality. During processing, staff responsible for the quality of the product shall carry out and record regular quality checks according to the internal HACCP plan.

Contamination

Procedures shall be in place to minimize the risk of contamination of raw materials intermediate/semi-processed products, packaging and finished product. Any physical (e.g. glass), chemical (e.g. soaps) and biological sources of potential contamination (e.g. standing water) shall be removed/controlled.

Where quantities of processing waste are sufficient, waste such as processing trimmings shall be brought to adequate re-use (e.g. feed). Feed for animals in the fur industry is not considered as an adequate reuse. All wastewater shall be treated prior to discharge. Chemicals and cleaning agents shall be handled according to *2.5 handling of drugs and chemicals*

8 MARKETING

Prior to marketing products shall be analysed for biological, sensoric, physical and chemical contamination. Chemical analysis shall be carried out by an ISO 17025 certified laboratory or equivalent (NELAP) or, if laboratories are involved in a testing ring (where methodologies and accuracy is regularly compared), own laboratories can be used.

The sampling shall be carried out by trained personnel. The hazards which shall be analyzed regularly and their limit values are listed below. The results of the regular residues analysis shall be documented.

Biological hazards	Limits	Level of obligation
<i>Listeria monocytogenes</i>	Presence of organisms	Compulsory
<i>Escheria coli</i>	5CFU/g	Compulsory
<i>Salmonella sp.</i>	Presence of organisms	Compulsory
<i>Vibrio cholerae</i>	Presence of organisms	Conditional*
Chemical hazards and antibiotic residues	Limits	Level of obligation
Agro-chemicals (e.g. pesticides and herbicides)	Presence of parameters (typical detection limit: 0.1 ppm)	Conditional*
Lead	Presence of parameters (typical detection limit: 0.05 ppm)	Compulsory
Mercury	0.05 ppm	Compulsory
Cadmium	0.1 ppm	Compulsory
Other heavy metals	According to the risk assessment	Conditional*
Saraloxacine, ciprofloxacin and endrofloxacin	Presence of parameters (typical detection limit, 1.25 ppb)	Conditional*
Flumequine	Presence of parameters (typical detection limit, 2.5 ppb)	Conditional*
Malachite Green, leucomalachite Green (for finfish)	Presence of parameters (typical detection limit, 2.0 ppb)	Conditional*
Nitrofurans	Presence of parameters (typical detection limit, 1.0 ppb)	Conditional*
Oxilinic acid	Presence of parameters (typical detection limit, 2.5 ppb)	Conditional*

*Analysis should be carried out for raw and cooked material according to the company's own risk assessment. Risk assessment and the resulting analysis plan shall be approved by the control body.

The company shall evaluate the freshness of seafood by the sensoric evaluation methods. This evaluation should be done by trained staff in accordance with the table below. The product must also be checked for other physical hazards, such as metals.

Sensoric evaluation of seafood

Presentation	Feature	Desired	Undesired	
Raw, whole, gutted or Ungutted	Outer surface:	Colour	Bright	Dull, bleached
		Slime	Colourless	discoloured

Cooked filets	Skin:	Damage	None	Punctures, abrasions
	Eyes:	Shape	Convex	Flat, concave
		Brightness	Clear	Cloudy
	Texture:	Colour	Normal	Discoloured
		Skin	Smooth, gritty	Firm, soft
	Appearance of gills:	Colour	Bright red or pink	Bleached, discoloured
		Mucus	Clear	Discoloured
	Odour of gills:		Fresh, characteristic	Slightly stale and sour, spoilage
	Appearance:		Translucent, glossy, natural colour	Dull, blood stained, discoloured
	Texture:		Firm, elastic	Soft, plastic, dry
	Odour:		Marine, fresh, neutral	Sour, stale, spoiled
	Flavour:		Marine, fresh	Fermented rancid, bitter, chemical

Physical hazards	Limits	Level of obligation
for metal inclusion	checking all equipment for damage or missing parts/passing the product through metal detection or separation equipment	Conditional*
for non-metallic objects	checking all equipment for damage or missing parts/passing the product through metal detection or separation equipment	Conditional*

* Analysis should be carried out for raw and cooked material according to the company's own risk assessment. Risk assessment and the resulting analysis plan shall be approved by the control body.

8.1 LOGO USE

The AquaGAP logo is a product label and will be sent to all certified companies. No membership fee or royalty fee is charged. Please note that any labeling or publications referring to AquaGAP must first be approved by the standard holder.

8.2 EXPORT

In order to export AquaGAP products, transaction certificates are necessary. These shall be requested from the control body of the exporter. For all export consignments the exporter shall apply for a transaction certificate. After the transaction certificate is issued it will be sent directly to the importer. Detailed records (including invoices, transport documents, delivery notes, etc.) must be kept of all sales of the certified product.

9 ICS (INTERNAL CONTROL SYSTEM)

Operators consisting of a number of small farms are encouraged to group together and set up an ICS (internal control system). This increases the quality assurance of the project and transfers a significant amount of external auditing requirements from the control body to the operator. There are a number of guiding manuals on how to set up an ICS. For further information contact the standard holder.

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