



F E M A S

Fishmeal
and Fish Oil

FEED MATERIALS ASSURANCE SCHEME

FISHMEAL AND FISH OIL SECTOR NOTES

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NOTE: Although these Sector Notes may be translated into various languages for the convenience of users, the English version remains the definitive reference document in the event of any dispute.

NOTES ON THE IMPLEMENTATION OF FEMAS FOR BUSINESSES PROCESSING FISH AND PARTS OF FISH FOR THE PRODUCTION OF FISH MEAL & CRUDE FISH OIL

Sector Notes are provided to assist FEMAS participants and assessors in establishing some background knowledge of specific feed industry supply sectors where issues may exist that are uncommon, or of less relevance, in other sectors. These Notes are not necessarily exhaustive.

These Sector Notes are relevant to businesses involved in the processing of whole fish or parts of fish for the production of Fish Meal and Crude Fish Oil for use in animal feed.

These Notes are laid out in the same format as the FEMAS International Core Standard. Where additional comment is necessary, the clause reference is to the appropriate section of the FEMAS International Core Standard. It is emphasised that the comments included in this document are intended to assist in the application of the corresponding requirements of the FEMAS International Core Standard and are not to be considered in isolation. For clauses where no additional comments are provided in this document, the original requirements of the FEMAS International Core Standard continue to apply without any additions or exclusions.

In subsequent issues, additions and amendments to these Notes will be shown in *blue italics*, for ease of reference.

These Sector Notes were produced in co-operation with the International Fishmeal and Fish Oil Organisation (IFFO) and International Feed Safety Alliance (IFSA). FEMAS is grateful for the knowledge and expertise provided by IFFO and IFSA in the production of this document.

1.10 Definitions

Aquaculture: The farming of fish and other non-mammalian marine species for human consumption.

Commingling: The combining of different lots of the same type of Feed Material, produced under similar conditions, by identified sources and meeting the same specification.

Competent Authority: The Authority of a country designated to carry out official controls.

Crude Fish Oil: Unrefined oil obtained from fish or parts of fish.

Fish Meal: Feed ingredient obtained by processing whole or parts of fish from which part of the oil may have been removed and to which fish solubles may have been re-added.

Standardising: The process by which different parcels of fish meal may be mixed to achieve target levels of protein or other key nutrients.

Trimming: By-product of the processing of fish for human consumption.

For additional definitions refer to FEMAS International Core Standard

SECTION 3 RESOURCES AND GOOD HYGIENIC PRACTICES

3.2 Personnel

Personnel moving between the unclean areas (where raw fish and partially processed fish are located) and clean areas (where Fish Meal and Crude Fish Oil are packed or stored) of the process must not do so without changing or disinfecting their footwear.

3.3 Production / Processing Facilities & Equipment

Participant' factories must handle only fish products. No other animal products shall be stored, produced or available on a site where Fish Meals or Crude Fish Oils are produced.

Participants must comply with relevant regulations and licensing requirements regarding processing, as specified by receiving countries and their own National Competent Authorities.

Areas where raw fish and partially processed fish are located (unclean areas) must be physically segregated from areas where Fish Meal and Crude Fish Oil are packed or stored (clean areas).

Procedures must be in place to control the movements of equipment between the unclean areas and the clean areas and prescribe the cleaning and disinfecting of equipment where necessary.

The unclean areas must be constructed in such a way that they are easy to clean and disinfect. Floors must be laid in such a way as to facilitate the draining of liquids.

3.4 Storage Facilities

In countries where the climate is suitable, Fish Meal may be stored outside in bags (e.g. 25kg, 50kg) or mini-bulk bags (e.g. 500kg, 1,000kg). Bags and mini-bulk bags stored outside must be protected from ingress by pests and stored under secure conditions, with access restricted only to authorised persons. Fish Meal from burst or damaged bags and mini-bulk bags stored outside, must be considered as non-conforming and managed in accordance with procedures for non-conforming product.

Any Fish Meal stored outside in bulk must be clearly identified and segregated at all stages of the supply chain. Such material will only be acceptable for supply as FEMAS assured if risk assessment and subsequent controls demonstrate that no additional hazards are created by this practice.

Storage facilities utilised for Fish Meal must not have been used to store mammalian or avian products at any time, other than eggs, milk or egg and milk products.

3.5 Intake & Loading Facilities

The intakes where raw fish / trimmings are received must be managed and controlled to ensure they are kept in hygienic condition and that no product is left for extended periods without treatment with preservative or processing.

3.11 Cleaning

Processors must have adequate facilities for cleaning and disinfecting any containers or mechanical handling systems in which raw fish or trimmings are received and any vehicles used for transportation of raw fish or trimmings.

3.12 Waste Management

Where spilt or spoilt Fish Meal or Fish Oil is disposed of out of the feed chain (for example to horticulture or energy production) all paperwork, delivery notes and packaging associated with such Fish Meal and Fish Oil must be clearly marked '**Not for Feed Use**'.

3.15 Process Water & Water Used For Cleaning Purposes Use Of Seawater

Seawater may be used in handling systems prior to processing or drying as long as any potential hazards that may arise from this practice are taken into account and controlled. Any analytical data provided to buyers must take into account the effect of seawater, (notably in the levels of salt) which may result from this practice.

Where seawater is used, risk assessment and any necessary controls must be used to ensure that intakes for such water are located in areas where potential contaminants will not be drawn into the process. Risk assessment should include consideration of the following:

- Location of any sewage or other waste outlet pipes beyond the control of the participant;
- The location of any waste water discharge from the participant's own premises;
- Means of ensuring that potential contaminants (e.g. plastic, wood, glass and other items likely to be found in coastal waters) are excluded from the process.

3.16 Control of Contaminants

Fishhooks and stones are particular hazards of certain fish species and specific fishing methods. Participants must take these hazards into consideration and have suitable methods to prevent contamination of Fishmeal or Crude Fish Oil with either fishhooks or stones where there is a potential for these hazards to be a problem.

Where Crude Fish Oil is loaded via pipelines directly onto ships, pipelines used for Crude Fish Oil must be dedicated to the purpose and clearly identified. Pipelines used for Crude Fish Oil must be capped and protected from inadvertent contamination when not in use (e.g. with a padlock).

In situations where spillages are collected for reprocessing, participants must pay particular attention to ensuring that no feathers or other avian or mammalian protein can inadvertently enter the process.

SECTION 4 TRANSPORT REQUIREMENTS

4.2 Owned and Contracted Land Transport

When transporting bulk Fish Meal, no other feed ingredients may be carried simultaneously.

4.2.3 Inspections of Land Transport Prior to Loading

Where the health and safety of quality personnel would be put at risk by climbing onto road tankers to carry out internal inspections, participants must comply with one of the following:

- Allow safe access by provision of safety platforms from which inspections may be done
- Nominate and train drivers to undertake inspections (in which case records of training must be held)
- Utilise risk assessment methodology to put in place alternative controls that will ensure issues of cross-contamination can be avoided (e.g. by use of dedicated tankers). In any such assessment, consideration must be given to the potential effects of inadvertently mixing different grades of the same product.

4.3.3 Control of Feed Ingredients on Loading into Water-borne Transport

In countries where it is the practice to tip bags / bulk bags of Fish Meal into containers or vessel holds as bulk material, participants must ensure that appropriate controls are in place to preclude the introduction of additional hazards through the activities of bag handlers. Hygiene and contamination controls exercised in the processing plant that are relevant for preserving feed ingredient safety must be continued during handling and at ship loading.

SECTION 5 PRODUCT SAFETY MANAGEMENT

5.1.3 Feed Ingredient Specifications

Melamine has been identified as an intentional contaminant of Fish Meal from certain origins, with the intention that the Nitrogen contained in the Melamine will indicate enhanced protein during testing of the Fish Meal. Melamine contamination is harmful to livestock species (as well as humans) and its inclusion in products certified by FEMAS is prohibited.

5.2 Raw Materials

Trimmings

Trimmings utilised to produce Fish Meal or Crude Fish Oil must **not** be sourced from suppliers processing any other animal products on the same site as that producing the trimmings destined for use in animal feed.

Where participants receive trimmings direct from neighbouring food processing plants via under floor conveying systems, risk assessments must be undertaken and documented to ensure that cleaning agents and other potential hazards will not adversely affect the Fish Meal and Crude Fish Oil subsequently produced.

Farmed Fish

Farmed fish and other aquatic non-mammalian animals may only be used to produce fish meal or fish oil if they meet the following criteria:

- (a) they must show no clinical signs of disease on the day of loading;
- (b) they must not have been slaughtered under a scheme for the eradication of a disease;
- (c) they must not come from a farm which is subject to a prohibition for animal health reasons and must not have been in contact with animals from such a farm.

Raw materials sourced from farmed fish, whether whole fish or trimmings, must be clearly identified and segregated to preclude their inclusion in Fish Meals intended for aquaculture, unless effective alternative controls are in place to ensure that farmed fish cannot be fed Fish Meal produced from farmed fish of the same species.

Risk Assessment of Fish Species Being Processed

Each species and geographical population of fish targeted for processing into Fish Meal and Crude Fish Oil must be regarded as a different 'raw material'.

Risk assessments must obtain and evaluate data on undesirable substances that are present in **each** species of fish and may subsequently be concentrated in the Fish Meal or Crude Fish Oil derived from them. Controls must be put in place on the basis of these findings to ensure levels in feed ingredients do not exceed legal limits in the countries of production and destination.

Raw Material Stock Rotation

Raw materials must be processed as soon as possible after arrival. With consideration to the period of time that elapses between the catching of wild fish or production of trimmings, and the processing of raw materials, participants' procedures must include a risk assessment to establish the need for either reducing the temperature of raw materials or of adding a preservative approved for use in animal feed by the competent authorities in the country to which the Fish Meal or Fish Oil is to be supplied.

Action is required where any deterioration in the raw material may result in a failure to meet customer specifications for Fish Meal or Crude Fish Oil. Authorisation to add preservatives must be the responsibility of a competent person. The type of preservative and level of addition must be recorded.

Risk assessments must include consideration of actions necessary on the vessels catching wild fish or at the premises of processors supplying trimmings, as well as at the participant's own factory.

5.6 Process Control

Processing plants must have sufficient production capacity for hot water and steam to ensure the safe processing of Fish Meal and Crude Fish Oil.

Monitoring and recording must ensure that product is processed for sufficient time and at sufficient temperatures to meet defined process parameters. Where appropriate, pressure must also be monitored and recorded.

5.6.3 Standardising of Fish Meal & Fish Oil

Where standardising of Fish Meal or Fish Oil is undertaken, the sole purpose must be to enable product to meet customer specifications for nutrients (e.g. protein or salt). Under no circumstances may standardising be undertaken with the intention of achieving acceptable levels of undesirable substances in any Fish Meal or Fish Oil to be placed on the market, where the levels of undesirable substances in any component batch or lot included in the blend exceed prescribed regulatory maximum limits.

5.9 Technological Additives

The addition of preservatives and antioxidants must be controlled and calibrated to ensure proper application. Records must be kept of any calibration undertaken.

5.10 Feed Ingredient Delivery Documents & Labels

Within the EU, labels attached to each package of Fish Meal and the documentation accompanying bulk Fish Meal must state: **'contains fishmeal – cannot be fed to ruminant animals'**.

Within the EU, each package of Fish Meal and the documentation accompanying bulk Fish Meal intended for feeding to fish, must bear a label stating: **'may be used**

for the feeding of fish'. Such Fish Meal may not contain product derived from the same species of farmed fish to which the Fish Meal is intended to be fed.

5.13.2 Sampling

Due to the practical difficulties of obtaining representative samples of raw fish or trimmings, risk assessment methodology must be applied to establish whether retention of such samples is beneficial and, if so, the period of time for which raw samples should be retained.

Where samples of raw fish or trimmings are not retained, inspection, testing and processing records must provide the necessary detail to allow any problems subsequently identified to be traced back to named vessels or, in the case of trimmings, processing factories.

Storage methods for raw fish and trimmings samples must ensure that deterioration is minimised (for example by freezing).

5.14.1 Traceability of Raw Materials

Raw materials sourced from wild caught fish, whether whole fish or trimmings, must be traceable to named vessels, the time of catching and the catching area. Records of the weight and species of fish caught must also be available.

Although the participant need not hold all relevant records, they must be capable of accessing such records if required to do so.

5.14.2 Traceability of Feed Ingredients

Where batches of Fish Meal or Crude Fish Oil are combined by the participant, each batch that is combined must be individually recorded and records shall allow the identification of any raw materials used to produce each batch so combined.

Batches of Fish Meal and Crude Fish Oil shall only be combined if they either:

- i) Meet the parameters of the same specification;
- Or**
- ii) Meet the criteria for standardising (detailed in 5.6.3 above).

Commingling

Where, for logistical reasons, the products of more than one Fish Meal or Crude Fish Oil production site are commingled into a common bulk, loss of segregation will result in the loss of FEMAS approved status, unless **ALL** the criteria below are met:

- i) All parcels commingled meet the parameters of the same specification;
- And**
- ii) All products commingled are from FEMAS certificated factories;
- And**
- iii) Buyers are made fully aware and accept that the products of more than one factory are included in the same bulk. This must be confirmed in writing;
- And**
- iv) Full traceability back to the raw materials is available for each component parcel of Fish Meal or Crude Fish Oil forming part of the common bulk.

Although the participant need not hold all relevant records, they must be capable of accessing such records if required to do so.

5.15 Non-Conforming Products

Participants must have procedures in place that ensure product that may not have received specified heat treatment (e.g. material discharged at start-up, or leakage from cookers) is re-circulated through the heat treatment process or collected and reprocessed.

Any Fish Meal that is re-processed by the participant must be introduced into the process prior to any process step identified in the HACCP Plan as critical for the killing of pathogens.

Applicable Regulations

N.B. This section of the Sector Notes is intended to assist participants and assessors in identifying specific regulations that should be considered with regard to this sector. It is not necessarily exhaustive nor does it reduce the obligation of both participants and assessors to ensure they are familiar with any regulations relevant to this sector.

The applicable regulations within the European Union are complex in relation to Fish Meal supplied for animal feed. In addition to those regulations that apply to all feed ingredients, suppliers of Fish Meal based in, or supplying to, the EU must be aware of the following specific regulations:

1. **Regulation (EC) No 1774/2002** Laying down health rules concerning animal by-products not intended for human consumption
2. **TSE Regulations 2006** (UK only)
3. **Regulation (EC) No 811/2003** Implementing Regulation (EC) No 1774/2002 of the European Parliament and of the Council as regards the intra-species recycling ban for fish, the burial and burning of animal by-products and certain transitional measures
4. **Regulation (EC) No 1292/2005** Amending Annex IV to Regulation (EC) No 999/2001 of the European Parliament and of the Council as regards animal nutrition
5. **Directive 2005/86/EC** Amending Annex I to Directive 2002/32/EC of the European Parliament and of the Council on undesirable substances in animal feed as regards camphechlor

NOTE: All fish processed must comply with any national or international official restrictions on fishing areas or closed periods for fishing.