



Feed Mill Standard

Issue 3.3

08 – September – 2025

Best Aquaculture Practices Certification Standard

Environmental Responsibility • Social Responsibility • Food Safety • Animal Health and Welfare

Aquaculture Facility Certification

Feed Mill

Issue 3.3 – 08 – September – 2025

Best Aquaculture Practices

Certification Standards, Guidelines

Best Aquaculture Practices Certification


The following Best Aquaculture Practices (BAP) standards apply to facilities that process and manufacture finished feeds for the culture of fish, crustaceans and other aquatic and terrestrial animals.

The BAP standards are achievable, science-based and continuously improved global performance standards for the aquaculture supply chain that assure healthful foods produced through environmentally and socially responsible means. They are designed to assist program applicants in performing self-assessments of the environmental and social impacts, and food safety controls of their facilities. BAP Standards lead to certification of compliance after verification of the applicant's facilities by BAP approved third-party certification bodies. For further information, please refer to the additional resources listed.

BAP standards demand compliance with local regulations as the first step toward certification. However, not all regulations are equally rigorous. For this reason, BAP standards set out requirements for documentation and procedures that shall be in facility management plans, whether they are prescribed by local regulations or not. By so doing, they seek, where possible, to impose consistency in performance among facilities in different producing regions and to engage the industry as a whole in a process of continuous improvement.

In common with ISO usage, these standards use the words “shall” to mean compliance is required or

mandatory and “should” to mean compliance is recommended. Auditable points are “shall” statements listed at the end of each standard. In parallel with the implementation of these standards for salmon farms, the Global Seafood Alliance (GSA) gathers data from audit reports to establish performance trends and for future GSA-sponsored research. The agreement of farms to this data policy is obtained as part of the certification process. In addition to data collected through audit clauses, GSA also requests specific datapoints within the standard, denoted with a request for “*Data*.” Facilities shall provide data wherever requested, though no specific compliance threshold must be achieved.

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The Certification Process

1. Program Management

Best Aquaculture Practices is a division of the GSA, with offices headquartered in Portsmouth, New Hampshire, USA. Best Aquaculture Practices manages multiple GSA standards including the Feed Mill Standard on behalf of the GSA.

To obtain BAP certification, applicants shall be audited by an independent, BAP-approved certification body.

To apply for certification, please contact:

Best Aquaculture Practices
85 New Hampshire Avenue, Suite 200
Portsmouth, NH 03801 USA

Tel: +1-603-317-5000

Email: certification@globalseafood.org

BAP Website: www.bapcertification.org

GSA Website: www.globalseafood.org

2. Self-Assessment

New applicant facilities are expected to carry out a self-assessment against the Standard to ascertain their preparedness for a third-party CB audit.

3. Third-party CB Assessments

Once a self-assessment has been carried out by the facility and it is satisfied that all deficiencies identified have been rectified, they can proceed to Certification. To become certified, facilities must be able to demonstrate compliance with this Standard, through an independent third-party on-site assessment by a GSA approved CB.

The chosen CB will formulate an agreement between the facility and the CB detailing the requirements and commitments needed from the facility.

New facilities must be in operation for at least 3 months from commencing production to ensure that they can demonstrate full compliance to the Standard during the assessment.

4. Assessment Frequency


Audits to the Feed Mill Standard are conducted at a frequency of once per annum. However, additional audits, such as re-audits, short notice, or unannounced audits shall also be conducted at the discretion of GSA and Certification Bodies where facility compliance concerns arise.

5. Duration of Assessments

The duration of an assessment is dependent on factors such as size of the operation/facility, number of process lines, number of personnel, and/or quantity of BAP star status product handled by the facility. In most cases the audit duration is two full days depending on the above stated factors. The CB must inform GSA/BAP where deviation in audit duration is foreseen. The CB shall be mindful that the assessment format is to include systems review and physical inspection of the site and production process. Time allocation during the assessment shall be such to provide sufficient and proportionate time for each activity to be carried out in full and where appropriate, additional time given when the auditor is required to carry out further investigation.

6. Audit Process

All requirements in the Standard shall be addressed. As with other BAP standards, the audit against the BAP Feed Mill Standard will consist of the elements cited in Figure 1 in accordance with ISO19011.

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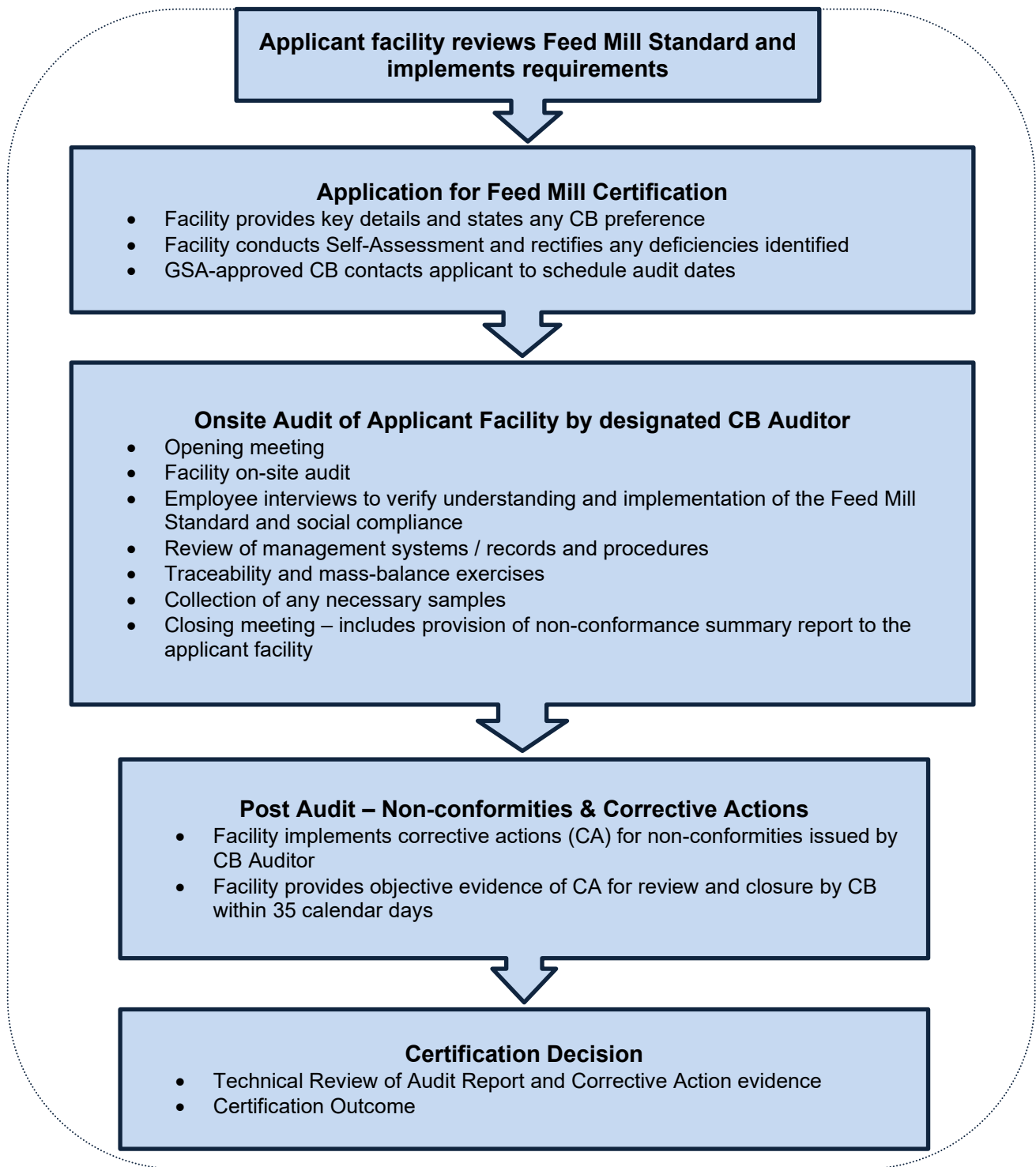



Figure 1. BAP Audit Process

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7. Non-Conformities and Corrective Actions

Any non-conformity issued during the assessment will be recorded by the auditor as either:

NC Rating	Definition	Required Action
Critical	Where there is a critical failure to comply with a food safety, social accountability, and/or legal issue or a risk to the integrity of the scheme.	The auditor will immediately inform the Certification Body, who will inform the GSA/BAP office. Immediate temporary suspension may ensue pending clarifications and a re-audit may be necessary.
Major	Where there is a substantial failure to meet the requirements and/or intent of any clause in the Standard but there is no food safety, social accountability, and/or legal issue or immediate risk to the Integrity of the scheme. (Generally, policy)	Objective evidence verifying the proper implementation of corrective action and closing of non-conformities must be submitted to the Certification Body in accordance with GSA/BAP certification management rules.
Minor	Where absolute compliance with requirements and/or the intent of any clause in the Standard has not been demonstrated. The matter does not rise to the level of Major or Critical and tends to be lower risk issues or isolated instances rather than patterns. Not indicative of an overall breakdown in compliance and systems.	Objective evidence verifying the proper implementation of corrective actions and closure of non-conformities must be submitted to the Certification Body in accordance with GSA/BAP certification management rules.

At the closing meeting, the auditor shall present his/her findings and review all non-conformities that have been identified during the assessment but shall not make comment on the likely outcome of the assessment. A written summary of the non-conformities discussed at the closing meeting shall be agreed upon and signatures from the facility representative obtained. A copy of the non-conformity report must be left with the facility prior to the auditor departing the facility.

The facility shall provide the CB, in accordance with GSA/BAP certification management rules, suitable and adequate objective evidence that corrective action has been implemented to rectify the non-conformity. This evidence shall also address root cause and future prevention. The evidence will be reviewed, and the CB will respond either confirming closure of the non-conformity or requesting further evidence.

The facility must submit evidence to the CB in order to close out all non-conformities within 35 calendar days. Failure to close out non-conformities in the given timeframe will result in certification not being granted or continued, and facilities will be required to re-apply for a full assessment for certification.

8. Audit Reporting and the Certification Decision

The auditor will provide a full report of the assessment, including the details of any non-conformities issued. The

auditor will submit the report to the CB. The report shall include brief statements of objective evidence of both conformity, and non-conformity.


The report shall follow the format specified by the GSA/BAP. The report shall be issued in accordance with the GSA/BAP Report Guidelines. Within the audit report there shall be a record of the duration of the assessment (expressed as hours) and any reason for the lengthening or shortening of the duration from that which is typical.

The audit report along with the corrective actions submitted by the facility will be evaluated by a Certification Committee of the CB, who will make the final certification decision post closure of all non-conformities. The timelines for audit, closure of non-conformities, technical review and certification decision are as specified in the GSA/BAP CB Requirements Document. In order to achieve certification to the Feed Mill Standard, the applicant facility must meet all of the requirements of the Standard.

BAP standards are developed by committees of technical experts following a process aligned to the FAO Technical Guidelines on Aquaculture Certification. See:

<https://www.bapcertification.org/Standards>

<http://www.fao.org/3/a-i2296t.pdf>

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Acknowledgements

An expert group, the BAP Feed Mill Standard Technical Committee, develops and endorses the Standard, with representatives throughout the supply chain and interested parties including industry associations, processors, producers, regulators, non-governmental organizations and conformity assessment and standards experts. The GSA is grateful to the members of the Feed Mill Standard Technical Committee members who created the earlier versions of the Feed Mill Standard and to other specialists that provided valuable input during the review process:

- Sergio Nates (Chair) – Latin American Rendering Association
- Richard Sellers – American Feed Industry Association
- Eric de Muylder – VDS Crustoccean Feeds
- Jonathan Shepherd - IFFO
- Ron Hardy – University of Idaho
- Dagoberto Sanchez – Alicorp SAA
- Victor Suresh – Integrated Aquaculture International
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- David Meeker – North American Renderers Association
- Kai Robertson – Conservation International
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- Ron Hardy (Chair) - University of Idaho
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- Ian Forster - Canada Department of Fisheries and Oceans
- Jason Mann - Evaqua Farms
- Umberto Luzzana - Skretting

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1. Regulatory Management

Property Rights and Regulatory Compliance

Feed mills shall comply with local and national laws and environmental regulations, including those related to product exportation, if applicable, and provide current documentation that demonstrates legal rights for land use, water use, construction, operation and waste disposal.

Reasons for Standard

Certified feed mills shall comply with applicable business-related laws and environmental regulations dealing with, for example, waste disposal, effluents, and pest control. Facilities shall also meet established standards for product safety, complying with local and national regulations and the requirements of export markets.

These regulations are needed to assure that feed mills provide pertinent information to governments and pay fees to support relevant programs.

- clearances to use medicated ingredients
- air quality assessments
- environmental impact assessments
- strategic environmental assessments
- feed safety protocols

BAP auditors cannot know all laws that apply to feed manufacturing in all nations. Participating feed mills have the responsibility to obtain all necessary documentation for siting, constructing and operating their facilities.

Implementation

Regulations regarding the operation and resource use of feed mills vary significantly from place to place. Among other requirements, such laws can call for:


- business licenses
- land deeds, leases or concession agreements
- land use taxes
- construction permits
- water use permits
- effluent permits
- landfill operation permits

Assistance in determining these necessary permits and licenses can be sought from a variety of governmental agencies dealing with business and the environment. BAP auditors shall also become familiar with the legal requirements within the areas they service.

During the BAP site inspection, the representative of the feed mill shall present all necessary documents to the auditor. All documents shall be current, and feed mills shall be in compliance with the requirements stipulated by the documents. In cases where governmental agencies have waived one or more permits, proof of these waivers shall be available.

Standards

- 1.1: The facility shall have current, valid documents to prove legal land and water use.
- 1.2: The facility shall have current, valid documents to prove all necessary business and operating licenses have been acquired.
- 1.3: The facility shall have current, valid documents to prove compliance with applicable regulations for construction and operation.
- 1.4: The facility shall have current, valid documents to prove that it is aware of, keeps up-to-date, and complies with, all relevant legislation of both the country they produce feed in, the countries they export to, and source countries if applicable. This includes all feed safety regulations.

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2. Food Safety

HACCP Process Controls, Good Manufacturing Practices (GMPs)

Feed mills shall have current, systematic, and documented process controls combined with good manufacturing practices that minimize or eliminate food safety hazards. Food safety hazards shall be identified, and corresponding risks managed effectively through a Hazard Analysis & Critical Control Points (HACCP)-based or equivalent system.

Reasons for Standard

There are potential risks to human health associated with the contamination of aquafeeds by chemical or biological agents. The ultimate safety of aquaculture products cannot be guaranteed unless feed producers control what is incorporated into their feeds and how the feed is produced.

Food safety issues and biosecurity concerns have highlighted the importance of continually evaluating and improving food safety programs in order to enhance consumer confidence and facilitate domestic and global trade. As a result, most countries have strict safety specifications defined by health or food safety authorities for feeds consumed by aquatic species destined for human consumption.

Management Commitment

Top management shall provide evidence of its commitment to the development and implementation of the food safety management system and to continually improve its effectiveness by a) showing food safety is supported by the business objectives of the organization, b) communicating to the organization the importance of meeting stated standards, c) establishing a food safety policy, d) conducting management reviews and e) ensuring the availability of resources.

Implementation

The most effective way to ensure food safety is through a systematic appraisal of the hazards involved and the adoption of appropriate process controls. To this end, the most commonly applied tool is hazard analysis, critical control points (HACCP), for which principles have been defined by the Codex Alimentarius Commission. At a minimum, the hazard analysis shall address:

- Risks of chemical contamination of ingredients and/ or finished products with dioxin/PCBs, medicinal substances, feed additives, heavy metals (including lead, mercury and cadmium), mycotoxins, pesticides and industrial contaminants.
- Biological hazards arising from the use of feed ingredients derived from certain non-processed and/ or processed aquaculture/fishery products, and from contamination by restricted-use protein or

pathogenic enteric microbes such as *Salmonella* or *Campylobacter* species, or *Escherichia coli*.

- For medicated feed producers, the risk of incorrect dosing or mislabeling.

Feed mill operators shall have in place a documented HACCP plan or equivalent documented feed safety plan. This shall cover:


- Standard operating procedures based on Good Management Practices (GMPs).
- Detailed accounts of process controls in terms of critical control points, preventive measures, monitoring and verification procedures, corrective actions and product recall procedures.
- Feed production process flow charts that include critical control points.
- Organizational charts of management and employee authority structure.

A quality management plan shall also be available.

Good Management Practices

Good management practices, also known as pre-requisite programs, are designed to address issues such as cleanliness and maintenance to create an environment in which safe feed can be produced. They cover all stages of the production process from procurement through handling, processing, storage, and eventual distribution of finished products. The GMPs shall specifically identify:

- The methods for maintaining isolation between different ingredients and between ingredients and finished products.
- How ingredients, feeds and feed contact surfaces are protected from adulteration with chemical and physical contaminants.
- The methods adopted for excluding animal pests using approved pest control methods by trained personnel or a licensed pest control service, including how the plant and warehouse are baited and fumigated.
- Routine cleaning operations and how they are monitored.
- How containers and equipment used for transport, storage, conveying, handling and weighing are kept clean.
- Procedures for verifying through product

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analysis that the GMPs are controlling the hazards they are designed to address.

- Procedures for managing bulk and bagged ingredients on a rotational, first-in-first-out basis.
- How processed feeds are separated from unprocessed ingredients and how mis-formulated, damaged or returned feed is stored so that it cannot contaminate other feedstuffs.
- How labels are received, handled and stored to prevent mislabeling and assure the correct labels are placed on the correct feed.

Process Controls

The process controls focus on the production system and the prevention of specific risks. They shall identify:

- Management and employee authority structure depicted in organizational charts.
- Critical control points depicted in an overall process flow chart.
- Finished products and their presentations.
- Preventive measures for each identified hazard at each critical control point.
- Monitoring procedures for each identified hazard at each critical control point that include frequency, assignment of task, scientifically derived critical limits, monitoring method and record-keeping method.
- Corrective actions to be implemented when a critical limit has been breached for any identified hazard.
- Verification procedures for all monitoring, corrective actions and preventive measures that demonstrate product safety by revision of procedures through product analysis at a frequency specified by the feed producer.
- Recall procedures in case adulterated product leaves the feed plant.

Incoming Ingredients

All incoming ingredients shall be inspected, and tags or labels checked for medications, trace minerals and other additives. Grain or feedstuffs that are moldy, treated/dyed or otherwise discolored shall not be used. Brightly colored grain, which usually indicates seeds treated for use as rodenticides or other pest control, can be highly toxic to aquatic animals and humans.

The BAP standards require that feed mills consider antibiotics in their hazard analyses and show that

adulteration with these substances is controlled through verified controls. Feed mills shall also maintain copies of supplier certificates that indicate no banned chemicals or antibiotics were applied to the incoming raw materials. Feed mills shall establish internal audit plans for verification of these data through laboratory analysis of incoming raw materials.

Periodic sampling of incoming ingredients shall be carried out to ensure that specifications are respected. Analytical testing for contaminants shall follow Association of Analytical Chemists (AOAC) or equivalent nationally approved analytical methods. Ingredients shall meet applicable statutory standards for levels of pathogens, mycotoxins, herbicides, pesticides and other contaminants that can give rise to human health hazards.

Minerals, supplements and other additives shall be obtained from reputable manufacturers that guarantee the concentration and purity of ingredients and provide instructions for correct use. For veterinary drugs, only licensed therapeutic products manufactured in accordance with good manufacturing practices shall be used, with the manufacturer certifying the availability of or providing certificates of analysis. All incoming ingredients shall be verified for correct labeling, purchasing specification, cargo destination, lot number/date and regulatory compliance, as appropriate, especially for medicated feeds.

Production

Pathogen control procedures, such as pasteurization to eliminate *Salmonella enterica*, *Toxoplasma gondii* and *Trichinella spiralis*, or the addition of an organic acid to inhibit mold growth, shall be used where appropriate. Results of treatments shall be monitored. Pasteurization can also be achieved by production methods such as elevated temperatures over time.


Equipment manufacturers should be consulted to determine what is required for pathogen control. Work and reports to meet these standards should be developed and used.

Feed mills shall not use aquatic feed protein from the same genus as the species being farmed to block this possible route for the spread of disease. However, protein hydrolysates verified to <10,000 daltons are permissible.

Finished Product

Labels and tags for finished product shall conform to legislation in the countries where the feed products are sold.

Process controls shall incorporate periodic testing of finished product to check for chemical

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contamination and mislabeling. Of particular concern is the inclusion of banned antibiotics such as nitrofurans. Low concentrations of pesticides or veterinary residues can have serious effects, not only on the production of aquaculture species, but accumulation of such residues may render aquatic species hazardous to consumers if action levels are exceeded.

For example, in Europe, manufacturers shall make sure permitted levels of undesirable substances mentioned in European Economic Community directives are not exceeded in feed. Other directives regulate the use of additives and veterinary medicines.

In the United States, feed mills that add drugs to feed are subject to the Federal Food, Drug and Cosmetic Act. For medicated feeds, three batches of each type shall be tested per year to check concentrations against target concentrations and ensure proper mixing and manufacture. The subject of bovine spongiform encephalopathy is dealt with in rule 21 CFR 589.2000. Feed mills shall comply with all relevant laws in their jurisdiction (see Section 1 of this standard) and cannot substitute compliance with BAP standards for compliance with national laws or regulations.

Medicated Feeds

To avoid cross-contamination, all medicinal feed additives shall be stored separately from other feed materials, products and premixes. Access to drug storage areas shall be limited to authorized personnel. Use of drugs and other ingredients shall follow ingredient label directions and regulatory requirements. Products without labels shall not be used.

Feed mills shall demonstrate acceptable cleaning procedures between batches of medicated feeds. Production runs of medicated feeds should be grouped together as much as possible. When sequencing is not possible, the processing system shall be flushed with ground maize or a similar ingredient. Flush material shall be discarded. Bulk feed delivery trucks carrying medicated feeds shall be appropriately flushed to assure that subsequent deliveries are not cross-contaminated.

Labels and tags for medicated feeds shall conform to legislation in the countries where the aquaculture feed products are sold. Warnings shall be clearly evident, along with specific instructions, including approved withdrawal times, for the species being fed. Medicated feed shall be stored under conditions specified on the pharmaceutical product label.

To assist in the battle against anti-microbial resistance, feed shall not be medicated with products that are designated critically Important to Human

Medicine by the World Health Organization (WHO):

<https://www.who.int/foodsafety/publications/cia2017.pdf>

Process Control Documentation

The facility shall maintain documents and accurate records as defined in the HACCP plan, feed safety and/or quality management system that can be verified as part of a third-party audit. Feed mills shall make available records that show all monitoring, verification and corrective actions taken.

Recall Procedures

Recall procedures shall be planned and documented, for example, following the guidelines provided by the FAO. Shipping and distribution records shall be maintained to facilitate the recall of specific production batches/runs to the mill if an error occurs in processing. Refer to the Traceability section below.

For Additional Information

American Association of Analytical Chemists (AOAC) International Official Methods of Analysis, 21st Edition (2019)

<https://www.aoac.org/official-methods-of-analysis-21st-edition-2019/>

U.S. Food and Drug Administration Code 21 CFR 225 Current Good Manufacturing Practices for Medicated Feeds

<http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?CFRPart=225>

U.S. Food and Drug Administration Code 21 CFR 589.2000

<http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=589.2000>

IPSE Compiled links to international GMP regulations and resources: ipse.org/gmp-resources/regulations


Maximum Residue Limits for Veterinary Drugs in Foods

Codex Alimentarius Commission
CAC/MRL 02-2009

Animal Feed Impact on Food Safety Report of the FAO/WHO Expert Meeting FAO, Rome; October 8-12, 2007

Codex General Standard for Contaminants and Toxins in Food and Feed

Codex STAN 193-1995, Rev. 2-2006

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**Code of Practice for the Prevention & Reduction of
Dioxin & Dioxin-like PCB Contamination in Foods
& Feed**

Codex Alimentarius Commission
CAC/RCP 62-2006

FSC36 Safe Feed/Safe Guidance Document

American Feed Industry Association
<http://safefeedsafefood.org/images/pdf/FSC36%20Guidance%20Document%20V7.0%20FINAL.pdf>

Recommended International Code of Practice:

General Principles of Food Hygiene

CAC/RCP 1-1969, Rev. 4-2003

Code of Practice on Good Animal Feeding

Codex Alimentarius Commission CAC/RCP 54-2004

European Feed Manufacturers Guide, Version 1.2

November 2014, FEFAC

<https://www.fefac.eu/files/58224.pdf>

IFIF/FAO Manual of Good Practices for the Feed Industry

International Feed Industry Federation

<https://ifif.org/wp-content/uploads/2018/06/IFIF-FAO-Feed-Manual-English.pdf>


Standards

HACCP System / Feed Safety System

- 2.1: The facility shall have a systematic, comprehensive, and effective HACCP system or equivalent feed safety system with reference to relevant legislation.
- 2.2: The HACCP system shall be developed by a qualified person or team with appropriate training in HACCP principles and product specific knowledge and expertise.
- 2.3: The HACCP or equivalent system shall adequately address potential physical, chemical and biological feed safety hazards, their likely occurrence and severity with appropriate preventive measures and monitoring, corrective actions and verification procedures.
- 2.4: The HACCP or equivalent system shall include flow charts on the feed production process that include process specifications and depict critical control points such as steps involving rework, steps where water is used and where waste is collected and stored.
- 2.5: The HACCP system shall identify preventive measures for each identified hazard at each critical control point.
- 2.6: The HACCP system shall identify monitoring procedures for each identified hazard at each critical control point that include frequency, assignment of task, scientifically derived critical limits, and monitoring and record-keeping methods. Monitoring procedures shall contain details on how the measurements are taken and the frequency.
- 2.7: The facility shall be able to demonstrate that process controls that identify corrective actions, taken when a critical limit for an identified hazard has been breached, are implemented, and monitored.
- 2.8: The facility shall maintain current, accurate records that detail monitoring, verification and corrective actions as required by the HACCP or equivalent system.
- 2.9: The facility shall review its HACCP system annually and upon any changes to the product or process that may affect product safety.
- 2.10: For producers of medicated feeds, the HACCP system or the equivalent system shall address the specific risks of incorrect dosing or mislabeling.

Process Controls

- 2.11: A quality management system shall be established, implemented, documented and maintained. The quality management system shall demonstrate compliance with all applicable legislation and be subject to a third-party audit.
- 2.12: The facility shall have an organization chart that depicts the management and employee authority and reporting structure, including quality control hierarchy.
- 2.13: The facility shall have a documented manual of standard operating procedures and good manufacturing practices (GMPs).
- 2.14: The facility shall have documented process specifications available.

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- 2.15: There shall be a planned program of internal audits carried out by suitably trained members of staff at least annually to ensure that all company procedures and the requirements of the BAP Feed Mill Standard are complied with and effective.
- 2.16: Non-compliances identified in any process, review or audit (internal or external) shall be documented and appropriate corrective and preventative actions implemented.
- 2.17: The facility shall have documented specifications available for raw materials, packaging, finished products and additives/ingredients including final products presentations.
- 2.18: The facility shall have periodic testing of finished feed products for hazards including chemical contamination by banned substances such as antibiotics and pesticides.
- 2.19: The facility shall clearly identify the source of products for rework and segregate them to prevent contamination.
- 2.20: Reworks and the rework process shall be documented with limitations including, but not limited to: prohibiting rework on feed containing medicinal ingredients; feed returned from farms; and unapproved feed products. Unapproved rework shall be dealt with as waste.
- 2.21: The facility shall have procedures to safely dispose of feed products that are unsafe for sale.

Training

- 2.22: All new employees shall complete a formal induction program.
- 2.23: All employees shall have appropriate levels of competence and be trained in the tasks they are required to perform together with personal hygiene, HACCP, food safety and customer requirements.
- 2.24: The training of each employee shall be recorded. Effectiveness of training shall be reviewed. Training records shall include details of the trainer, date of training, content of training and the trainees.
- 2.25: There shall be a formal annual review and training plan for each employee.

Ingredients

- 2.26: Each feed ingredient shall be subject to a formal HACCP-based risk assessment, selection and approval procedure.
- 2.27: A suitably trained person shall be responsible for the procedures for the selection and approval of each feed ingredient.
- 2.28: Grain or feedstuffs that are moldy, treated/dyed or otherwise discolored shall not be used. Incoming ingredients shall be inspected, and tags or labels shall be checked for medications or other additives.
- 2.29: The facility GMPs shall describe effective methods for maintaining isolation between ingredients and between ingredients and finished feeds.
- 2.30: The facility shall have a written procedure for accepting all incoming feed ingredients. Details of all deliveries shall be recorded, and feed ingredients shall not be unloaded until the documentation is verified and approved supplier status confirmed.
- 2.31: The facility shall have a documented supplier approval program that includes a list of all approved suppliers and service providers. This list shall be kept up-to-date and reviewed at least annually.
- 2.32: There shall be a procedure and access for the inspection, sampling and testing if applicable, of all bulk and liquid ingredients before unloading. Packaged ingredients shall be sampled according to a quality assurance plan including checking for appropriate conditions, expiry dates and labelling.
- 2.33: The facility shall routinely sample and analyze incoming ingredients for adulterants or toxins to comply with applicable statutory standards for pathogens, mycotoxins, herbicides, pesticides and other contaminants.
- 2.34: The facility shall maintain copies of supplier certificates that indicate nutritional and analytical properties and that incoming raw materials are free from banned chemicals or antibiotics.
- 2.35: The facility shall only use feed additives that are listed in the current version of the EU Register of Feed Additives or an equivalent national or international register.
- 2.36: For specified feed additives and mineral/vitamin pre-mixtures the identity/batch or lot number and quantity used shall be recorded.

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- 2.37: The facility shall not incorporate proteins from the same genus as the animal destined to be fed. But protein hydrolysates of <10,000 daltons are permissible.
- 2.38: Producers and suppliers of feed medication products shall be certified to GMP-based international pharmaceutical standards.
- 2.39: Where applicable, veterinary prescriptions shall be checked prior to use to ensure compliance with legislation.
- 2.40: Medicated feeds shall be stored separately from all other feed materials, products and premixes, with access to the drug storage area limited to authorized personnel.

Feed Production

- 2.41: A designated person(s) shall be responsible for issuing specifications and formulations.
- 2.42: There shall be a formulation document for each feed type derived from the product specification which is uniquely identified by code, version number or date.
- 2.43: Records shall be kept showing the actual weight of each ingredient for every production batch and acceptable tolerances defined, and the person responsible for each production shift.
- 2.44: Weighing, monitoring, and measuring equipment, including weighbridges, shall be calibrated at least annually.
- 2.45: Equipment that is operating outside specified limits shall be taken out of service until repaired or replaced. Documented corrective action shall be evident where inaccurate measuring or monitoring equipment has been used.
- 2.46: A contingency or back-up device shall be available in the event of Critical Control Point (CCP) / legal measuring equipment being out of service or away for repair.
- 2.47: The feed mill shall have specific procedures and flushing requirements for the production of medicated feeds.
- 2.48: The flushing procedure shall specify the quantity and type of material to be used and appropriate validation carry-over tests completed at least annually or based on regulatory requirements.
- 2.49: All flush batches shall be recorded, and the identity and destination of the flush material controlled and recorded.

Storage and Shipping

- 2.50: There shall be a written procedure for loading final feeds to ensure that vehicles and their compartments are loaded correctly, and records are kept to support compliance.
- 2.51: The facility shall have GMPs with effective methods for maintaining isolation between different finished products and off-specification feed.
- 2.52: The facility shall have GMPs describing how ingredients, feeds and feed contact surfaces are protected from chemical and physical contaminants.
- 2.53: The facility shall implement GMPs that exclude animal pests using approved methods by trained personnel or a licensed pest control service provider.
- 2.54: The facility shall have GMPs that identify how routine cleaning operations are conducted and monitored, and how containers and equipment are kept clean.
- 2.55: The feed mill's external premises shall be maintained in a clean and tidy condition and free from pest harborage.
- 2.56: The facility and/or service provider shall use pesticides approved and registered with the appropriate national authority.
- 2.57: Records of fumigation and dosage shall be available where applicable.
- 2.58: Result of inspections shall be recorded and where the presence of pests is detected, investigation and corrective actions shall be implemented and recorded.
- 2.59: The facility shall implement GMPs that manage bulk and bagged ingredients on a rotational, first-in-first-out basis.

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- 2.60: The facility shall implement GMPs that check ingredient routings for incoming ingredients to avoid cross-contamination.
- 2.61: Paper or plastic sacks for finished feeds shall not have had any previous use. Bulk or tote bags that have not left the site may be reused subject to risk assessment. Opened bags or containers, including silos, shall be covered or securely folded when not in use or stored in closed, labelled containers.
- 2.62: Waste containers containing feed type waste shall be covered unless in fully weather-proofed buildings.

Labeling, Tags

- 2.63: The facility's GMPs shall describe how labels are received, handled and stored to prevent mislabeling.
- 2.64: Tags and labels for finished feed products, including any medicated feeds, shall conform to legislation in the countries where the feed products are sold.
- 2.65: The facility shall not use antimicrobials designated Critically Important for Human Medicine by the WHO in medicated feed.
- 2.66: The facility shall ensure all materials including finished feeds are labeled and those without labels are not stored and used.
- 2.67: Warnings and species-specific instructions shall be clearly evident on labels and tags.
- 2.68: Labels shall include a full description of the product detailing relevant storage and distribution conditions, durability and required shelf-life and instructions for use.
- 2.69: Tags and labels shall name any antioxidants or preservatives that have been added to or are present in finished feeds.


Quality Control and Recalls

- 2.70: There shall be a designated person responsible for Quality Control including the approval or rejection of feed ingredients, packaging material, work-in-progress feeds and finished feed products.
- 2.71: There shall be adequate facilities, resources and staff available for sampling, inspecting, supervision of loading and unloading, and testing of feed ingredients and finished products.
- 2.72: Samples shall be taken from every production batch of bulk or packaged feeds and retained for a defined period as appropriate for the shelf life of the feed type.
- 2.73: Samples for bacterial analysis shall be taken aseptically by trained personnel.
- 2.74: External laboratories performing testing/analyses shall be accredited to ISO/IEC17025 or an equivalent standard or approved by a competent authority. In-house laboratories shall be operating on Good Laboratory Practices (GLPs) per ISO/IEC17025.
- 2.75: Recall and withdrawal procedures shall be documented, and accurate shipping records maintained to facilitate recalls/withdrawals. Recall procedure shall be tested at least annually.
- 2.76: In the event of a feed safety incident including a recall/withdrawal, the appropriate national authorities and customers shall be notified, and the recall/withdrawal shall be formally reviewed to assess its effectiveness and identify if modifications to procedures are required.
- 2.77: The facility shall keep records of any customer complaints related to its products' compliance with the BAP standards.
- 2.78: The facility shall keep records of investigations of such complaints and actions taken to address/correct them.

References

World Health Organization Norms, standards and guidance for pharmaceuticals.

https://www.who.int/medicines/areas/quality_safety/quality_assurance/norms_standards/en/

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3. Community

Community Relations, Worker Safety and Employee Relations

Feed mills shall strive for good community relations. They shall also comply with local and national labor laws, including those related to young and/or underage workers, to assure worker safety and adequate compensation.

Feed mills shall also promote improvements in their supply chains (See Section 3: Sustainability of Key Inputs) by actively favoring ingredients from sources with clear policies for social and labor standards and independently assessed sources, and shall obtain ingredients from socially certified sources as they become available.

Reasons for Standard

Feed mills are a critical support industry for aquaculture, with expenditures on feed often the single most important cost of producing aquatic species. Feed mills can represent considerable sources of employment and tax revenue for local communities and national governments.

Feed mill work is potentially dangerous because of the types of machinery employed and the physical bulk of the raw materials and finished products. Workers may not be well educated nor fully appreciate the risks inherent to feed mills, and sometimes safety instruction may not be adequate.

Feed mills in developing countries may operate in weakly regulated business environments in which pay scales maybe low, and wage or labor laws may not be consistently enforced. Feed mills need to maintain good working relationships, not only with their employees, but also the communities in which they operate.

Implementation

To avoid possible conflicts with local communities, representatives of feed mills shall regularly communicate with local leaders by, for example, telephone, written correspondence, meetings or other means.

To receive BAP certification, facilities shall operate in compliance with this standard and all local, national, and international conventions, rules and regulations, whichever provides the highest protection to the worker. The facility shall have in place policies and procedures pertaining to, but not limited to: worker health and safety and compliance with requirements regarding wages, benefits, hours, hiring practices, minimum age, status of workers, and good employee relations that provide the highest protection to the workers.

Workers shall be given adequate initial training, as well as regular refresher training, on safety in all areas of feed mill operation and on the application of standard operating procedures. Appropriate protective gear shall be provided for workers according to task, including for example, items such as overalls, eye protectors, ear protectors, dust masks, gloves and

boots.

Noise levels in feed mills can be high, particularly due to hammermills and pulverizers. Exposure for more than eight hours a day to sound in excess of 85 dB is potentially hazardous.

Noise levels can be lowered using noise-control enclosures, absorbers, silencers and baffles, and using personal protective equipment, such as earmuffs. Where technical methods are insufficient, noise exposure shall be reduced by use of hearing protection and administrative controls such as limiting the time spent in noisy environments and scheduling noisy operations outside normal shifts or at distant locations.


Workers shall be trained in the first aid of electrical shock, profuse bleeding and other possible medical emergencies. A plan shall be available for obtaining prompt medical assistance for injured or ill workers.

If meals are provided for workers, they shall be wholesome, with food storage and preparation performed in a responsible manner. Safe drinking water shall always be available free of charge.

Manuals shall be available to identify standard operating procedures. Safe working practices shall be documented for dangers such as dislodging of bridged grain or meal in bins. Tramp iron and other metal fragments need to be removed by magnets because they can result in injury to personnel and cause serious damage to equipment.

Routine maintenance has an important bearing on the safety of employees. Worn chain and belt drives, for example, can become dangerous, so maintenance procedures are needed to keep workers safe. Uncovered belts or chains are prohibited with the provision of proper driveshafts and/or drive belt safety guards.

Feed mill operators shall appoint an employee safety committee to review work practices and work conditions and hold regular safety meetings where employees can draw attention to safety problems in need of correction. A log or journal shall be kept

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recording accidents and issues presented at safety meetings.

During facility inspection, the auditor will determine whether conditions comply with labor laws, including discrimination, and safety requirements. The auditor will also interview a random sample of workers to obtain their opinions about wages and safety conditions. Any discrepancies will be investigated.

For Additional Information

Feed Manufacturing Technology V

Safety and Health Loss Control Management,
American Feed Industry Association, 2005 Arlington,
Virginia, USA

9th International Congress on Noise as a Public Health Problem

Foxwoods, Connecticut, USA
http://www.icben.org/2008/PDFs/ICBEN_Proceedings_2008.pdf


Standards

Community Engagement

- 3.1. The facility shall provide evidence of meetings, committees, correspondence, service projects or other activities that demonstrate commitment to regular interaction with the local community to avoid or resolve conflicts.

Wages and Benefits

- 3.2. The facility shall ensure that workers are paid at least the legal minimum wage, or the wage rate established by an employment contract or collective bargaining agreement, whichever is higher. Regular wages and compensation shall cover the workers' basic expenses and allow for some discretionary funds for use by workers and their families.
- 3.3. The facility shall provide benefits that, at minimum, are required by local or national law (Such as paid holidays, maternity leave, health insurance, paid sick time, etc., as applicable).
- 3.4. The facility shall compensate workers for overtime hours worked beyond the nationally mandated regular work week, at a premium rate, as required by law.
- 3.5. The facility shall not make deductions from wages that are unauthorized or not provided for by national law. Facilities shall not make deductions from wages as part of a disciplinary process. Neither shall the facility make deductions including but not limited to provision of work tools, transportation, and/or others that are not specified in the written contract between facility and workers.
- 3.6. The facility shall not have inappropriate access to the worker's bank account. Payment of wages shall not be made to someone other than the worker or into an account not controlled by the worker.
- 3.7. The facility shall issue wages directly to workers and not withhold or delay or make irregular payments. All wage payments shall be documented. A record of wage payment (such as a pay slip) shall be provided to the worker and include itemized details of all benefit provided and deductions made.
- 3.8. The facility shall maintain all relevant documents that verify any contracted/subcontracted workers, whether through a labor employment service, recruiter, or otherwise, are paid in compliance with all local wage and overtime laws.
- 3.9. The facility shall maintain all relevant documents that verify piece workers (those paid a fixed "piece rate" for each unit produced or action performed regardless of time) are paid in compliance with local or national law, including regulations regarding equivalence to or exceeding minimum requirements for wages, hours, overtime and holiday pay.

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Working Hours


- 3.10. The facility shall set working hours that comply with local or national laws, contractual agreements where applicable, or industry standards in the country, whichever affords greater welfare to the workers. However, in no case shall the regular work week (excluding overtime) exceed 48 hours.
- 3.11. Overtime shall not exceed 12 hours per week except as permitted by national law and agreed between facility and workers in a voluntary contract.
- 3.12. The facility shall not terminate an employee's contract for refusal to work overtime or deploy any other detriment for noncompliance.
- 3.13. Facilities shall comply, at a minimum, with national laws regarding meal and rest breaks during work shifts. Facilities shall respect all workers right to a rest day after six consecutive days worked.
- 3.14. Facilities shall maintain records that verify compliance with working hour laws, overtime, meal and rest breaks and termination for all workers including but not limited to piece rate workers, contractors/subcontractors, hourly, salaried and temporary workers.

Forced, Bonded, Indentured, Trafficked and Prison Labor

- 3.15. All work, including overtime, shall be voluntary, and shall not be under threat of any penalty or sanctions.
- 3.16. The facility shall not engage in any form of forced or indentured labor including prison labor. This includes human trafficking, the confiscation or holding of original identity papers and other valuable possessions, hampering or preventing the renewal of travel or identification documents, and other means of coercion intended to force anyone to work.
- 3.17. Bonded labor shall be prohibited. The facility shall not require the payment of deposits, bonds or other financial or collateral guarantees that may result in debt bondage. This includes recruitment fees, fines, and deductions from wages, and withholding of pay that are not part of a written contractual agreement with the employee.
- 3.18. Workers shall have the right to leave the premises after their work shift. Workers shall also have the right to terminate their employment after reasonable notice. The facility shall not otherwise unreasonably restrict workers' freedom of movement including but not limited to surveillance during rest or non-work hours, during transportation, in dormitories provided by the facility.
- 3.19. The facility shall have the information regarding hot-lines, competent authorities, and other resources for victims of labor rights abuse displayed prominently for easy access to workers.

Child Labor and Young Workers

- 3.20. The facility shall not engage in or support the use of child labor. The facility shall comply with local child labor laws regarding minimum working age, or the age of compulsory education, or, the ILO Minimum Age Convention 138, whichever is higher. While ILO Minimum Age Convention 138 states the minimum age shall be 15, local or national law of minimum age of 14 may apply if it is in accordance with developing nation's country exceptions under this convention. The facility shall collect, verify and retain age related records of workers to confirm that the age requirements are met.
- 3.21. The employment of young workers (above the minimum age but under 18 years old) shall comply with local or national laws, including required access to compulsory education.
- 3.22. Young workers shall not be subjected to conditions that compromise their health, safety, or moral integrity, or that harm their physical, mental, spiritual, moral or social development. This includes restrictions on working hours and prohibiting night work and hazardous work.
- 3.23. The facility shall have in place procedures for support to anyone identified as a child laborer in the facility. Depending on the age of the child, support must include at a minimum removal and reintegration into education (for children below the minimum age and/or children who have not completed basic education and/or changing job functions for young workers above the minimum age to non-hazardous tasks).

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Hiring and Terms of Employment


- 3.24. Workers shall have a legal right to work in the country they are working in. Work performed and terms of employment shall comply with local, national or international labor standards, whichever is stricter. Records shall be collected, verified, and retained to document right to work documents.
- 3.25. The facility shall provide to all workers, prior to hire and during employment, with written and understandable information regarding the terms and conditions of employment, worker's rights, benefits, compensation, expected working hours, details of wages for each pay period each time they are paid, and facility policies regarding disciplinary actions, grievance procedures, any authorized deductions from pay, physical work, environment and housing, and similar. This information shall be provided in the appropriate language of a majority of the employees. This requirement shall apply to all workers regardless of status, including but not limited to hourly, salary, piece rate, temporary and seasonal workers.
- 3.26. Where contracted/subcontracted or temporary workers are hired through a labor recruiting agency or employment service, the facility shall ensure that these services provide all the information cited at clause 3.25 prior to and during hire, in appropriate languages, to ensure workers are aware of their rights and conditions of employment as described above.
- 3.27. All labor recruiting agencies, or employment services used by the facility must be licensed to operate by the local or national government as a labor provider. Workers shall not be subject to recruitment practices that utilize threats, penalties, coercions, physical force or fraud.
- 3.28. The facility shall document the agencies used to recruit, hire, and/or employ workers, in addition to any known fees paid by or debts accrued by workers in order to secure employment.

Discrimination, Discipline, Abuse and Harassment

- 3.29. The facility shall provide for equal opportunity with respect to recruitment, hiring, terms of employment, compensation, access to training, promotion, termination or retirement.
- 3.30. The facility shall not engage in or permit discrimination in all aspects of employment, including but not limited to recruitment, hiring, compensation, terms of employment, discipline, access to training, promotion, termination, or retirement on the basis of race, color, gender, national origin/ heritage, religion, age, nationality, social or ethnic origin, maternity, sexual orientation, political opinion, disability or any other status. Terms and conditions of employment shall be based upon the ability to do the job, not on personal characteristics or beliefs.
- 3.31. The facility shall treat workers with dignity and respect and not engage in or permit physical, verbal or sexual abuse, bullying or harassment.
- 3.32. The facility shall have a written disciplinary procedure made available in the appropriate language of the workers. Records shall be maintained of all disciplinary actions.
- 3.33. The facility shall not terminate employees for pregnancy, subject workers to pregnancy or virginity testing, force the use of contraception, or reduce wages after maternity leave.
- 3.34. The facility shall have in place an established complaints and remediation system to handle cases and allegations of sexual abuse/harassment, bullying or discriminatory practices. This shall, at a minimum, include a confidential reporting mechanism, information on any hot-lines or other outside services available and the possibility of initiating an independent assessment/arbitration.

Freedom of Association and Collective Bargaining

- 3.35. Facilities shall respect the rights of workers to associate, organize, and bargain collectively (or refrain from doing so) without the need of prior authorization from management. Facilities shall not interfere with, restrict, or prevent such activities and shall not discriminate against or retaliate against workers exercising their right to representation in accordance with international labor standards.
- 3.36. Where the right to freedom of association and collective bargaining is prohibited or restricted under local law, the facility shall not prevent alternative means to facilitate worker representation and negotiation. (For example, the election of one or more employees by the workers to represent them to management).
- 3.37. The facility shall grant worker representatives access to the workplace in order to carry out their representative functions.

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- 3.38. The facility shall have a written worker grievance process/procedure and make it available to all workers, that allows for the anonymous reporting of grievances to management without fear of retaliation.

Employee Facilities and Housing

- 3.39. The facility shall provide safe, healthy and clean conditions in all work, rest, dining, and, where applicable, housing areas, and shall establish and follow a clear set of procedures that ensures occupational health and safety. This includes providing access to potable water, clean toilet facilities, and, if applicable, sanitary kitchen and food storage areas.
- 3.40. If provided or mandated by the facility or employment agency/labor agency, employee housing shall meet local and national standards including but not limited to safe, watertight structures, adequate space, heating/ventilation/cooling, pest control, sink, shower and toilet provisions.
- 3.41. Safe and potable drinking water shall be readily available to employees.
- 3.42. The facility shall have a sufficient number of toilets and sinks in compliance with local and national laws. These shall be readily accessible to employees and kept clean and in good repair.
- 3.43. The facility shall provide a safe and hygienic place for workers to change into appropriate work attire and to store personal belongings that is secure and accessible to workers without delay or payment to access.
- 3.44. If meals are provided, they shall be safe, wholesome and commensurate with local eating customs.

Worker Health and Safety

- 3.45. The facility shall appoint a management person responsible for ensuring worker health, safety and training.
- 3.46. The facility shall identify, prevent, eliminate or minimize any workplace health and safety hazards. This includes a requirement for documenting incidents, and investigations of accidents and their cause and correction.
- 3.47. The facility shall document standard operating procedures and provide these to relevant workers in the language they understand.
- 3.48. The facility shall ensure proper measures for fire protection and prevention in all work, rest, dining, and where applicable, housing areas. This includes but is not limited to provision of sufficient number of smoke detectors and/or fire alarms, adequate numbers of functioning fire extinguishers as per legal requirement; sufficient number of emergency exits (including provision of appropriately designed emergency stairwells on multi-story buildings to support evacuation for personnel), provision of fire hydrant, and evacuation routes that are clearly marked, properly lit and kept clear and unlocked while employees are present; proper training and enforcement for handling of flammable liquids and chemicals; and procedures to prevent fires during such activities as welding.
- 3.49. Safe working practices shall be documented for such dangers as feed mill fire hazards, working at heights, lifting heavy objects, ingredient dumping activities, and other hazards identified at 3.46.
- 3.50. Facilities shall ensure that equipment and machinery are safe through, but not limited to: properly functioning shields or guards; warning signs/pictures; emergency shut-off switches; and implementation of lock-out/tag-out procedures to prevent start-up during maintenance; prevention of “bridging”; exclusion of “tramp iron”; replacement of worn chains and belts.
- 3.51. Facilities shall ensure the strength, stability and safety of buildings and equipment in work, dining and, where applicable, housing areas. This includes, but is not limited to, structural welding/fastening, ensuring proper electrical safety through proper wiring, grounding of cables, and coverage of circuit boxes.
- 3.52. Emergency evacuation drills (in case of fire, chemical leak or similar) shall be conducted, at a minimum, annually, to include all shifts and floors, and conducted jointly with other occupants in the building. Drills shall be conducted similarly in housing facilities. The fire and evacuation drills shall be documented and verified.
- 3.53. An emergency response plan shall be prepared for serious illnesses or accidents, including measures to be taken in case of fire and other eventualities.
- 3.54. Select workers shall be made familiar with details in emergency response plans and trained in the first aid of electrical shock, profuse bleeding, and other possible medical emergencies. A list of the trained workers shall be available. At least one of the trained workers shall be present at the facility while it is in operation or maintenance.

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- 3.55. The facility shall limit worker exposure to sound in excess of 85 dB to less than eight hours a day or apply a stricter national standard.
- 3.56. The facility shall appoint an employee safety committee to review work practices and work conditions. The safety committee shall regularly hold safety meetings where employees can draw attention to safety problems in need of correction. A log or journal shall be kept with records of accidents and issues presented at safety meetings.

Personal Protective Equipment and Clothing


- 3.57. Protective gear and equipment in good working order shall be provided, free of charge, for employees (e.g., eye protection for welding, gloves for shop work, steel toe boots, ear protection near hammer mills and pulverizers, gloves, masks and aprons for handling antibiotics). Auditor shall verify deployment.

Medical Care

- 3.58. The facility shall provide adequate medical care for employees, including access to or communication with medical authorities in case of emergencies or accidents. Records of medical care provided shall be available.
- 3.59. First aid kits shall be readily available to employees close to work and rest areas. First aid kits shall be sealed to prevent contamination from the working environment.
- 3.60. The facility shall maintain a list of first aid items kept on hand and, where appropriate, their expiration date.

Employee Training

- 3.61. The facility shall have a documented training program for workers and maintenance personnel that operate dangerous machinery or equipment or that handle antibiotics. Such training shall include, but is not limited to, boiler operators, welders, forklift drivers and those that operate other potentially dangerous machinery. Where local law requires workers to be licensed to operate or maintain such items, proof of licensing shall be maintained.
- 3.62. The facility shall maintain a training program that orients new employees in general health and safety. The facility shall also provide refresher training to all employees on these subjects at least annually.

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4. Environment

Sustainability of key inputs: Fishmeal, Fish Oil, Soy and Palm Oil

Feed mills shall actively favor marine ingredients from responsibly managed and independently assessed sources and shall obtain terrestrial ingredients, notably soy and palm oil, from certified sources as they become available. Feed mills shall facilitate the efficient utilization of marine ingredients by providing farmers with reliable estimates of inclusion rates of fishmeal and fish oil in compound diets.

Reasons for Standard

Most feeds manufactured for use in aquaculture contain fishmeal and fish oil as protein and lipid sources. Like all renewable resources, fishmeal and fish oil can be vulnerable to over-exploitation if they are not responsibly managed and there are limits to the amounts the world’s fisheries can sustainably supply. As the aquafeed industry consumes much of the world’s fishmeal and fish oil, it can exert a positive influence on sustainable supply chains.

The BAP program therefore supports the use of feed ingredients derived from terrestrial sources, as well as fishmeal and fish oil produced from by-products or from aquatic species that are invasive or cultivated. Ingredients of wild fishery origin that are not by-products shall come from certified sources or from fisheries improvement projects. This standard focuses attention on meals and oils derived from wild or farmed aquatic sources including fish, mollusks, crustaceans and algae. Where the words “fishmeal” and “fish oil” are used, they refer to the broader category of meals and oils from aquatic organisms.

Also, in this standard “by-product” refers to materials of either fishery, aquaculture, or terrestrial origin produced as a residual of or incidental to any processing operations except sorting. “By-product” does not include “bycatch,” which is defined as fish and other marine life that are incidentally caught while fishing for a target species. “Reduction fisheries” are fisheries that turn their catch into fishmeal and fish oil by a process called “wet reduction”. Regarding terrestrial materials, byproducts include those ingredients derived from processing waste as a secondary product, such as soy lecithin.

To promote sustainable agriculture, this standard also includes provisions for responsibly sourcing soy ingredients and palm oil. Soy production in particular has been identified as a critical source of deforestation and land conversion globally. To facilitate a market transition towards soy supply chains deemed “Deforestation and Conversion Free” (DCF), BAP requires feed mills to demonstrate a commitment towards 100% DCF soy with a time-bound, measurable plan.

Implementation

Aquafeed producers have an important role to play in adopting sustainable sourcing policies, formulating

and manufacturing nutritionally balanced diets that increase feed efficiency, and providing reliable information to their customers.


Important substitutes for proteins and oils from reduction fisheries include meals, oils and by-products from plants, rendered animal proteins including material from aquaculture origins, and fish-processing by-products from sustainable or non-threatened fisheries.

The evaluation of the sustainability status of reduction fisheries and terrestrial ingredients is evolving, with certification programs and auxiliary verification methods developing accordingly. This standard requires development, commitment, and implementation of a plan to avoid unsustainable sources and transition to certified or verified sources as they become available.

Facilities shall create and implement clear Plans of Action that define: policies for the responsible sourcing of fishmeal and fish oil from reduction fisheries and material derived from fish-processing by-products from capture fisheries or from aquaculture, as well as the responsible sourcing of soy and palm inputs. Facilities shall have policies to attain at least 75% fishmeal and oil from certified sources or fishery improvement projects (depending upon where they are located). Facilities shall also ensure at least 50% of soy inputs and 100% of palm inputs come from certified sources. Lastly, by January 1, 2026 facilities shall demonstrate a detailed, measurable pathway to ensuring 100% DCF soy inputs, with a formal commitment to adhere to this plan.

The Plans of Action shall address how to

- Exclude use of fishmeal or fish oil sourced from illegal, unreported or unregulated (IUU) fisheries, or by-products from such fisheries. The FAO International Plan of Action on IUU Fishing provides a reference tool to determine which fisheries currently operate under an IUU status (<https://www.fao.org/iuu-fishing/international-framework/ipoa-iuu/en/>).
- Exclude fishmeal or fish oil sourced from fish or fish by-products from fisheries designated

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by the International Council for the Exploration of the Sea (ICES), Food and Agriculture Organization (FAO) of the United Nations, National Marine Fisheries Service of the United States, International Union for Conservation of Nature or Commission for the Conservation of Antarctic Marine Living Resources as “subject to overfishing,” “overfished,” “harvested unsustainably,” “fishery closed,” “stock overexploited,” “no fishing recommended,” “stock critical,” “endangered” or “critically endangered.”

- Exclude any ingredients containing protein from members of the same genus as the species for which the feed is intended [but protein hydrolysates (routinely tested to verify <10,000 daltons) are permissible].
- Increase sourcing of non-byproduct soy inputs that are independently verified as deforestation and conversion free (DCF) until 100% of inputs meet these criteria. A sourcing plan shall be developed that defines a clear timeline to achieve this goal with a written commitment by the facility to meet those objectives. This commitment and plan shall be developed and published by all facilities by January 1, 2026.

Aquafeed producers shall actively favor marine oils and proteins derived from fisheries that are classified by reputable international third parties such as the FAO and ICES as sustainably fished, fully fished, or underexploited. One example of an appropriate tool for developing a responsible sourcing plan is the FishSource data bank created by the Sustainable Fisheries Partnership (<http://www.fishsource.org>).

For fishmeal and fish oil derived from either reduction fisheries or from processing by-products, at least 75% (calculation based on mass balance) shall come from sources that are certified to GSSI-recognized standards, MarinTrust or derived from farmed or invasive species. By-products may also include material sourced from non-threatened and non-IUU fisheries. Alternatively, where GSSI-recognized or MarinTrust-certified fishmeal and fish oil are not produced nationally, the above minimum percentage can comprise material from active fishery improver programs (FIPs) as verified by: MarinTrust (<https://www.marin-trust.com/improver-programme-accepted-fips>), FisheryProgress.org (<https://www.fisheryprogress.org>), the MSC Improvement Program (<https://www.msc.org/what-we-are-doing/improvement-program>), or those registered on FishSource (<https://www.fishsource.org>). For feed mills located in countries where neither GSSI-recognized certified nor qualified FIP materials are produced nationally (to be verified at audit), the timelines for compliance with the minimum

percentages otherwise applicable to feed mills is suspended until July 1, 2027. In such cases facilities are required to show evidence of active engagement in FIPs, and declining utilization of fish meal and oil from uncertified and non-FIP sources over time on a year-over-year basis. FIPs should incorporate social components that prioritize the prevention of bonded or trafficked labor and aquafeed producers should become supporting stakeholders in new or existing FIPs that are relevant to their supply chains. The 75% target will be periodically reassessed with the ultimate goal that all fishmeal and fish oil are derived from certified sources.


The primary approved standard for demonstrating compliance is the MSC Fisheries Standard (ISEAL and GSSI compliant), provided it is combined with MSC Chain of Custody compliance for the producing factory. Other GSSI-recognized certification programs are also approved (<https://www.ourgssi.org/gssi-recognized-certification/>). The secondary approved standard is MarinTrust (ISEAL and ISO 17065 compliant), whose certification process covers responsible fishery management, Chain of Custody and good manufacturing practices for the fishmeal factory.

FIP traceability can be demonstrated through two mechanisms:

Demonstration of a Chain of Custody certificate corresponding to all FIP products accounting towards the minimum percentage, OR

Demonstration of a Supplier Approval Program which includes a list of all approved suppliers of FIP material and service providers. This list shall be kept up-to-date and reviewed, at a minimum, annually. The Program should include criteria for the approval of all FIP suppliers.

- The list should include all current approved suppliers of FIP material, with corresponding FIP information, even if they are only used intermittently or seasonally. The list should also include any outsourced suppliers from which there is FIP product remaining in inventory or in the stream of commerce.
- Examples of criteria for approving FIP suppliers:
 - Suppliers must have traceability systems in place to allow trace-backs to vessel, trader, or wholesaler for each FIP.
 - Corresponding FIP ID number and vessel list.
 - Details of segregation procedure from non-FIP landings, when applicable.
 - Visual assessment (packaging materials).
 - Risk assessment – especially for species with potential toxicity or allergen issues, histamine, molluscan shellfish, chemical contamination, etc."

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Feed mills shall adopt preferential sourcing of responsibly produced soymeal and soy derivatives such that a minimum of 50% (calculation based on mass-balance) are derived from certified sources. Accepted programs include ProTerra, RTRS (Round Table for Responsible Soy), SSAP (Soybean Sustainability Assurance Protocol), and standards compliant with the European Feed Manufacturers' Federation (FEFAC) Guidelines (www.standardsmap.org/fefac), all of which prohibit illegal deforestation.

For all soy inputs, whether certified or not, feed mills shall set clear goals for: traceability to country of origin; verification of chains of custody; exclusion of material derived from illegal deforestation, and; exclusion of material derived from ecologically sensitive areas. All certified feed mills shall be expected to demonstrate a time-bound, measurable commitment to utilizing 100% DCF-verified soy ingredients. This commitment shall be in place by January 1, 2026.

If palm oil is used in feeds it shall be RSPO (Round Table on Sustainable Palm Oil) certified.

Feed mills shall indicate on packaging, shipping documents, invoices, or in written declarations for all feeds the inclusion rates of fishmeal and fish oil derived from reduction fisheries. These data shall be expressed as percentages averaged for relevant production run(s). They will allow farmers to calculate efficiency ratios such as FIFO (Fish In: Fish Out), a measure that combines meal and oil inputs, or FFDR (Feed Fish Dependency Ratio) which is calculated either on the meal or the oil inputs.

The percentages reported for calculation of FIFO's or FFDR's shall include any meal or oil derived from whole, wild-caught fish, squid, krill, mollusks or any other wild aquatic animals. However, they shall exclude meal or oil derived from farmed or invasive species or processing by-products such as trimmings, offal and their derivatives such as squid liver powder and shrimp head meal.

To calculate ratios for FIFO or FFDR, farmers also require the average processing yields from the wet reduction of whole, industrial fish. For general use, these yields have been determined as 22.5% for fishmeal and 5% for fish oil, but feed mills should supply farmers with more precise estimates if these default values are not valid in specific cases.

To protect proprietary information, feed mills are not required to provide physical or digital copies of documents such as feed formulas. Auditors recognize that such information is confidential and

will not make copies or share confidential information with third parties.

Additional Information

The State of World Fisheries and Aquaculture
FAO Fisheries and Aquaculture Department —
2018 <http://www.fao.org/3/i9540en/i9540en.pdf>

Fish In:Fish Out Ratios Explained

International Fishmeal and Fish Oil Organization
<https://www.iffonet.net/fish-fish-out-fifo-ratios-conversion-wild-feed>

Fish Source Program and FIPs

Sustainable Fisheries Partnership
<https://www.fishsource.org>
<https://www.fishsource.org/improvement-project>

FisheryProgress.org FIP Directory, operated by FishChoice

<https://fisheryprogress.org/directory>

Illegal, Unreported and Unregulated (IUU) fishing. FAO.

<https://www.fao.org/iuu-fishing/background/what-is-iuu-fishing/en/>

The MSC Improvement Program

<https://www.msc.org/what-we-are-doing/improvement-program>

Global Sustainable Seafood Initiative (GSSI) Recognized Certification Schemes

<https://www.ourgssi.org/gssi-recognized-certification/>

Marin Trust Improver Programme


<https://www.marin-trust.com/improver-programme>

Round Table on Responsible Soy

RTRS Certification - <https://responsiblesoy.org/certificacion?lang=en>
RTRS Credits - <https://responsiblesoy.org/material-rtrs?lang=en>

Roundtable on Sustainable Palm Oil

RSPO Certification - <https://rspo.org/rspo-credits>
RSPO Credits - <https://rspo.org/rspo-credits>

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- 4.1 The facility shall obtain declarations from suppliers on the species and fishery origins of each batch of fishmeal and fish oil.
- 4.2 The facility shall not source raw material from IUU fisheries. It shall have documented procedures of corrective actions in the event of usage of any raw material sourced from IUU fisheries and shall prevent recurrence.
- 4.3 Feed mills shall indicate on packaging, shipping documents, invoices, or in written declarations for all feeds the inclusion rates of fishmeal and fish oils derived from reduction fisheries.
- 4.4 The facility shall develop and implement a clear, written Plan of Action defining policies for responsibly sourcing fishmeal and fish oil from reduction fisheries and setting clear goals for responsibly sourcing soy ingredients.

Note: In clauses 4.5 – 4.8, data to be provided on crude fish meal and crude fish oil ingredients USED IN FEEDS PRODUCED for all Aqua species during the previous 12 consecutive calendar months before Audit Start Date. Refer to the definition of “12 consecutive calendar months”. The following datapoints should consider all marine ingredients utilized, including, but not limited to, byproducts.

- 4.5 Of the combined total quantity based on mass balance (refer to BAP definitions) of crude fish meal and crude fish oil derived from wild reduction fisheries, at least 75% of such ingredients used in feed produced for all aquatic species shall be sourced from fisheries that are certified under GSSI-recognized standards and/or the Marin Trust Whole Fish Fishery Assessment Criteria (current and valid standards). After December 31, 2027, the requirement for use of such certified ingredients shall increase to at least 90% for all aqua feeds produced, increasing to 100% after December 31, 2030.

4.5.A Data: Input percentage of crude fish meal derived from wild reduction fisheries that is certified under recognized standards per clause 4.5.

4.5.B Data: Input percentage of crude fish oil derived from wild reduction fisheries that is certified under recognized standards per clause 4.5.

- 4.6 Alternatively, where crude fish meal and crude fish oil from wild reduction fisheries certified under GSSI recognized standards and/or the Marin Trust Whole Fish Fishery Assessment Criteria are not produced nationally, the combined total quantity based on mass balance (refer to BAP definitions) of crude fish meal and crude fish oil for the stated percentages under clause 4.5 shall be sourced from active and approved Fishery Improvement Programs (FIPs) by Marin Trust, the MSC Improvement Program, FisheryProgress.org, or those registered on FishSource.org.

4.6.A Data: Input percentage of crude fish meal derived from approved FIP material per clause 4.6.


4.6.B Data: Input percentage of crude fish oil derived from approved FIP material per clause 4.6.

- 4.7 Where neither certified nor approved FIP materials are produced nationally, the minimum percentage requirements have been suspended until July 1, 2027, and feed mills shall demonstrate the lack of such material with valid objective evidence. If such conditions exist in a country in which the feed mill operates, they shall EITHER engage in commencing Fishery Improvement Programs (FIPs) OR become active participants of FIPs approved by Marin Trust, the MSC Improvement Program, FisheryProgress.org, or those registered on FishSource.org. Documentation shall be available to establish active initiation or participation in FIPs, together with demonstrating positive progress on a year-over-year based on mass balance (refer to BAP definitions) towards meeting the 75% crude fish meal and crude fish oil after July 1, 2027.

4.7.A : Data: Input percentage of crude fish meal derived from alternative material per clause 4.7.

4.7.B Data: Input percentage of crude fish oil derived from alternative material per clause 4.7.

- 4.8 By-products, if used in feeds for aquatics species, shall be sourced from either farm raised species and/or material derived from invasive species (e.g. invasive Chinese carps in the US). Any by-products derived from wild fisheries shall be sourced from species that are non-threatened or from

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fisheries that do not operate in Illegal, Unregulated, or Unreported fisheries as defined by the International Plan of Action on IUU fishing.

4.8.A: *Data:* Input weight in MT of total crude fish meal derived from wild fisheries used in feed.

4.8.B: *Data:* Input weight in MT of crude fish oil derived from wild fisheries used in feed.

4.8.C: *Data:* List the recognized standards that the feed mill has used in sourcing the 75% (or future target %) inclusion rate of crude fish meal and crude fish oil.

Note: Data to be provided on by-product ingredients USED IN FEEDS produced for all Aqua species during the previous 12 consecutive calendar months before Audit Start Date. Refer to the definition of “12 consecutive calendar months”.

4.8.D: *Data:* Input weight in MT of fish meal derived from qualified by-products.

4.8.E: *Data:* Input percentage of fishmeal derived from qualified by-products.

4.8.F: *Data:* Input weight in MT of fish oil derived from qualified by-products.

4.8.G: *Data:* Input percentage of fish oil derived from qualified by-products.

4.8.H: *Data:* List the species and the source (farm raised or invasive species or Non-threatened Fisheries/IUU Fisheries) of the by-products that the feed mill has used the fish meal and fish oil from.

4.9 If the feed mill uses blended oils containing fish oil, fatty acids, acid oils and other vegetable oils (based on BAP definitions) in the feed for aquatic species, these ingredients shall only be allowed to count towards the associated responsible sourcing requirements in clauses 4.5, 4.10, and 4.11 if all of the criteria below are met:

- The specification/formulation of each blend used at the feed mill shall show the exact inclusion rate of certified fish oil, fatty acids, acid oils, soy oil, palm oil in the blended oil. If any uncertified marine, soy, or palm oils are included, no responsible sourcing claims shall be made.
- The origin of 100% of the marine raw material used in the production of fish oil, fatty acids and acid oils in the blended oil shall be from certified fisheries under GSSI-recognized standards and/or the Marine Trust Whole Fish Fishery Assessment Criteria. Alternately, where feed mills are in compliance with criteria under clause 4.6, then the origin of 100% of the marine raw material used in the production of fish oil, fatty acids and acid oils in the blended oil shall be sourced from active and approved Fishery Improvement Programs (FIPs) by Marine Trust, the MSC Improvement Program, FisheryProgress.org, or those registered on FishSource.org.
- The origin of 100% soy ingredients used in the blended oil shall be from sources that are certified to ProTerra, RTRS, SSAP, other standards successfully benchmarked against the FEFAC Guidelines for Responsible Soy Sourcing.
- The origin of 100% palm ingredients used in the blended oil shall be RSPO (Roundtable on Sustainable Palm Oil) certified.

Data to be provided on blended oil ingredients used in feeds produced for all Aqua species during the previous 12 consecutive calendar months before Audit Start Date. Refer Definitions for 12 consecutive calendar months

4.9.A: *Data:* Input weight in MT of blended oil product.


4.9.B: *Data:* Input weight in MT of crude fish oil in the blended oil product.

4.9.C: *Data:* Input weight in MT of fatty acids in the blended oil product.

4.9.E: *Data:* Input weight in MT of acid oils in the blended oil product.

4.9.F: *Data:* Input percentage of crude fish oil in the blended oil product.


4.9.G: *Data:* Input percentage of fatty acids in the blended oil product.

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- 4.9.H: *Data*: Input percentage of acid oils in the blended oil product.
- 4.9.I: *Data*: Input weight in MT of soy ingredients in the blended oil product.
- 4.9.J: *Data*: Input percentage of soy ingredients in the blended oil product.
- 4.9.K: *Data*: Input weight in MT of palm oil in the blended oil product.
- 4.9.L: *Data*: Input percentage of palm oil in the blended oil product.
- 4.9.M: *Data*: List the species and the sources of the fish used in the blended oils.
- 4.9.N: *Data*: State the source of the soy ingredients used in the blended oils.
- 4.9.O: *Data*: State the source of the palm oil used in the blended oils.
- 4.10 For soy and other soy derived ingredients, at least 50% based on mass balance (refer to BAP definitions) shall be from sources that are certified to ProTerra, RTRS, SSAP or to other standards successfully benchmarked against the FEFAC Guidelines for Responsible Soy Sourcing. The purchase of RTRS credits is also an acceptable means to demonstrate compliance.
- 4.10.1 : Effective January 1, 2026**
- 4.10.1 Facilities shall demonstrate a written commitment to purchasing and utilizing 100% certified or DCF-verified soy for all aquafeed production. The commitment shall detail a clear, actionable pathway to achieve these goals with defined milestones.
- 4.11 All palm oil used in feeds shall be RSPO (Roundtable on Sustainable Palm Oil) certified. The purchase of RSPO credits is also an acceptable tool to demonstrate compliance.

Data to be provided on ingredients utilized in feeds produced during the previous 12 consecutive calendar months before Audit Start Date.

- 4.11.A: *Data*: Input weight in MT of soy derived ingredients.
- 4.11.B: *Data*: List the names of the certification standards under which the soy ingredients sourced by the feed mill was qualified.
- 4.11.C: *Data*: State the number of RTRS credits if the feed mill has opted to buy credits.
- 4.11.D: *Data*: Input weight in MT of palm oils.
- 4.11.E: *Data*: List the names of the certification standards under which the palm oil sourced by the feed mill was qualified.
- 4.11.F: *Data*: State the number of RSPO credits if the feed mill has opted to buy credits.

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5. Environment

Storage and Disposal of Supplies

Fuel, lubricants, feed mill chemicals and potentially toxic or dangerous compounds shall be properly labeled and stored, used and disposed of in a safe and responsible manner.

Reasons for Standard

Feed mills routinely use a variety of chemicals and toxic substances that can cause damage to products, employees or the environment. Such chemicals include insecticides, rodenticides, fumigants, organic acids and other fungicides.

If not used at safe levels, chemicals are a potential hazard to both the health of workers and the safety of feed mills' products. Fuel and oil spills, and improper use of pesticides and other chemicals can result in water pollution and cause toxicity to aquatic organisms and wildlife.

Implementation

Fuel, lubricants and chemicals shall be labeled and stored in a manner to prevent fires, explosions and spills. Used lubricants and unwanted or out-of-date chemicals shall be disposed of in a responsible manner.

Secondary containment shall be provided for individual or multiple fuel storage tanks. The containment volume shall be equivalent to the total stored volume plus 10%. "Flammable Material" and "No Smoking" warning signs shall be installed at fuel storage sites.

Oil leaks and spills from equipment shall be prevented through good maintenance. Used oil and other chemicals shall be removed and disposed of properly. Out-dated chemicals and wastes collected after spills shall be properly confined,

labeled and sent to a hazardous waste disposal site. Hazardous chemicals shall be stored in secure, well-ventilated, water-tight buildings. The buildings' concrete floors should slope to a center basin for containing spills. Warning signs shall be posted.

Although feed mills generally do not store large quantities of hazardous materials, procedures shall be developed for managing spills or leaks of oil, fuel, gases, chemicals and other products. The equipment and supplies needed for managing and cleaning up these spills shall be readily available. Workers shall be trained to properly use the equipment and handle the contained waste.

For Additional Information

U.S. EPA Spill Prevention, Control and Countermeasure (SPCC) Rule

<https://www.epa.gov/oil-spills-prevention-and-preparedness-regulations>

Feed Manufacturing Technology V


Environmental Management
American Feed Industry Association –
2005 Arlington, Virginia, USA

Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

https://www.unece.org/trans/danger/publi/ghs/ghs_rev08/08files_e.html

Standards

- 5.1 Fuel, lubricants and potentially dangerous or toxic chemicals shall be labeled, securely stored, used and disposed of in a safe and responsible manner.
- 5.2 Fuel, lubricants and potentially dangerous or toxic chemicals shall not be stored near feed ingredients, in employee housing or in kitchen areas.
- 5.3 Fuel, lubricant and chemical storage areas shall be marked with warning signs.
- 5.4 Precautions shall be taken to prevent spills, fires and explosions, and procedures and supplies shall be readily available to manage chemical and fuel spills or leaks. Designated staff shall be trained to manage such spills and leaks.
- 5.5 Fuel storage shall include secondary containment areas to contain possible spills of at least 110% of the storage capacity.

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6. Environment

Waste Management and Resource Use

Feed mill by-products, garbage, paper and plastic refuse shall be disposed of in a sanitary, responsible and biosecure manner. Data on direct energy and water use shall be recorded.

Reasons for Standard

Feed mills generate waste that can cause pollution, odors and health hazards when not disposed of properly. Human food scraps, out-of-date feed and other organic waste can attract scavengers. Runoff from refuse piles can cause pollution and contaminate ground water.

Empty plastic bags and other containers do not decompose quickly. They can be a hazard to animals that become entangled in them.

Feed mills can improve their economic and environmental sustainability by making efficient use of energy and raw materials. By adopting new technology and sharing best practices they can make significant savings in direct fuel, electricity and water consumption.

Implementation

Unwanted or expired ingredients and unwanted finished product generally present the greatest challenges in waste disposal, so a rigorous program for their removal shall be in place. Such materials shall be kept in covered containers or storage areas, removed frequently and disposed of properly.

Waste ingredients and unsellable material shall be isolated and identified and shall only recovered as feed after the absence of hazardous contamination has been assured.

Waste and unsellable material containing hazardous levels of veterinary drugs, contaminants or other hazards shall be disposed of in an appropriate and, where applicable, statutory manner and not used as feed.

Trash, garbage and other wastes shall not be

dumped on vacant land. It shall be dealt with according to local law by composting, placing in a landfill or burning after excluding plastics. Composting shall be done by a procedure that does not create odor problems or attract wild animals.

Paper and plastic shall be recycled if possible. Collection of wastes for recycling requires readily accessible waste containers that are serviced at regular intervals.

Life Cycle Analysis

Feed mills shall record, and provide the auditor with, the annual direct energy consumption (fuel + electricity) and water usage of their facilities. In future versions of this standard, Life Cycle Assessment impact data relating to feed ingredients will be considered. These data are collected with the aim of increasing efficiency and reducing impacts over time.

For Additional Information

Environmental Engineering


P. A. Vesilind, J. J. Peirce, R. F. Weiner — 1994
Butterworth-Heinemann
Boston, Massachusetts, USA

Composting

U.S. Environmental Protection Agency
<http://www.epa.gov/compost/>


Industrial energy efficiency accelerator

Guide to the animal feed milling sector. Carbon Trust
(2010) London, UK.
<https://www.carbontrust.com/media/206460/ctg018-animal-feed-milling-industrial-energy-efficiency.pdf>

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Standards

- 6.1 Expired ingredients and unwanted, undelivered finished product shall be kept in covered containers or storage areas and disposed of frequently and properly.
- 6.2 The recirculation of feeds within the process such as sievings and dust shall be controlled to prevent residues and cross contamination.
- 6.3 Waste ingredients and unwanted, undelivered finished product shall be recovered as feed only after confirmation that hazardous contamination is not present.
- 6.4 Waste materials that contain hazardous levels of veterinary drugs or other contaminants shall be disposed of in an appropriate manner and in compliance with regulations.
- 6.5 Garbage, including plastic and other solid waste, shall be disposed of to comply with local regulations and avoid environmental contamination and odor problems (e.g., by recycling, burning, composting or placing in a landfill).
- 6.6 The feed mill shall keep records of mean annual direct energy consumption (kWh/MT of feed) and annual water usage (m³/MT of feed). Note: Auditors must include this data in the audit reports.
 - 6.6.A *Data*: Input the facility's mean direct energy consumption from the last 12 months (in kilowatt-hours per MT of feed).
 - 6.6.B *Data*: Input the facility's water usage from the last 12 months (in cubic meters/MT of feed).

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7. Traceability

Record-Keeping Requirement

To establish product traceability, specified data shall be recorded for both ingredients and finished products.

Reasons for Standard

Product traceability is a crucial component of the BAP certified program. It interconnects links in the seafood production chain and allows each batch of product to be traced back to the inputs of origin. Results of feed quality and safety analyses by accredited laboratories shall also be included. Traceability ultimately assures the purchaser that all steps in the production process were in compliance with environmental, social and food safety standards.

Implementation

Feed mills shall utilize traceability systems that allow accurate and timely tracing of all feed ingredients used in feeds and all finished products. Traceability procedures and systems must ensure the identification of all ingredients and finished feeds. Complete production records of batches and final feed products and packaging shall be maintained, as well as records of feed destination.

To establish traceability for incoming ingredients, all necessary information must be recorded for every batch/lot at receipt. This data includes ingredient types, sources and lot numbers. (See sample Ingredient Traceability Form, Appendix A.)

Particular attention shall be given to record keeping that relates to animal health products and premixes used in medicated feeds. An inventory of drugs and premixes is required with a check on the quantity of drugs used against the quantity of medicated feeds produced. The information must be recorded for each shipment of medicated ingredients received. (See sample Medicated Ingredient Traceability Form, Appendix B.)

For feed output, documentation shall enable the history of each batch, blend or run of product to be

determined. The information must be recorded for each shipment of finished feed. (See sample Product Traceability Form, Appendix C.)


To control the potential spread of specific pathogens from raw materials of animal or plant origin, it may be necessary to specify for any given ingredient the country and species of origin and any treatment process used prior to purchase. Care shall be taken to preserve the identity of such material after procurement to facilitate subsequent tracking.

Records shall be retained for at least 3 years after the date of delivery. For feeds for the United States market, the record-keeping provisions of the Public Health Security and Bioterrorism and Response Act of 2002 need to be satisfied. The U.S. Food and Drug Administration is currently defining the precise implications of these provisions as they relate to feed, ingredients and pet food.

Feed mills shall maintain paper records of the required data in notebooks or files. This information shall also be transferred to computer database files, with the original files kept to allow verification of the electronic data.


The record-keeping process requires a high degree of care and organization. At large feed mills, managers could collect initial data for ingredient deliveries and feed product shipments. A single clerk could then be given the task of collecting the data and transferring it to a computer database. Plant management shall of course review the effort at intervals to verify it satisfies BAP requirements.

Customer Complaints The applicant shall prepare and implement an effective system for the management of complaints and complaint data to control and correct shortcomings related to its products' compliance with the BAP standards.

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Standards

- 7.1: The facility shall operate a record-keeping process that provides timely, organized, accurate entries, performed and overseen by a designated trained person or team responsible for collecting the data, ensuring it is complete and accurate and that traceability requirements are met.
- 7.2: A traceability system shall be in place that allows accurate and timely forward and backward tracing of all ingredients used in feeds and all finished product information, including date code and lot information for finished feed products, as well as shipping details.
- 7.3 Traceability and mass balance documentation on ingredients utilized in feeds produced during the previous 12 consecutive calendar months before Audit Start Date shall be available for all incoming ingredients including crude fish meal and crude fish oil and by-product material from GSSI-recognized standards or FIPs approved by Marin Trust, the MSC Improvement Program, FisheryProgress.org, or those registered on FishSource.org or blended oil products for every lot/batch received to include at a minimum but not limited to the following:
- Ingredient/raw material type
 - Species & fishery origins (FAO Area) & source for marine ingredients, as appropriate
 - Date received
 - Shipper's/Supplier's names, addresses, and contact details
 - Factory/processing facility where by-products were produced
 - Facility where blended oil products were produced
 - Unloading assignment
 - Bulk quantity or number of bags
 - Bag/package size
 - Packaging type
 - Unique lot number
 - Quality comments
 - Receiver's signature
 - Expiration date, if applicable
- 7.4: Traceability records shall be maintained for medicated feeds at a minimum but not limited to the following characteristics:
- Drug name and active compound
 - Potency of active compound
 - Date received
 - Quantity
 - Supplier's name
 - Supplier's code for drug, if applicable
 - Supplier's lot or code number
 - Return of any damaged or unacceptable drugs.
- 7.5: Traceability records shall be maintained for finished feed products at a minimum but not limited to the following characteristics to allow tracing of feed back to the inputs of origin:
- Manufacturing date
 - Ingredient source(s) including additives
 - Feed type mixed
 - Formulation details
 - Processing conditions
 - Unique lot number
 - Actual yield
 - Mixing personnel
 - Bin assignment
 - Drug inclusion(s)
 - Expiration date for medicated feed, if applicable
 - Sequencing and flushing
 - Dispatch date and time
 - Name, address, contact details, & license plate for transporter
 - Name, address, and contact details for destination/purchaser (including BAP certification number, if applicable)
 - Off-specification feed, especially for medicated feed.
- 7.6: Where a facility's traceability system consists of paper records and/or files, this information shall be transferred to a computer database or spreadsheet to allow transmission and verification of electronic data.

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- 7.7: Facilities that use an online system or computer database for traceability shall keep copies of the documents or records that were used to transfer data to the electronic system to allow verification of the information in the electronic system.
- 7.8: Facility procedures shall maintain lot separation during receipt, storage, handling and production of feeds. Lot separation shall also be reflected in records.
- 7.9: Records of traceability shall be retained for at least three years after the date of delivery of feed products.
- 7.10: To use the BAP logo, facilities shall have such use approved and registered in advance with BAP Management.

Appendix A

Sample Ingredient Shipment Traceability Form

Feed Mill Name		
INGREDIENT Ingredient Type		Reception Date
Quantity Received		Unloading Assignment
Bag Size	Package Type	Supplier Name
Bulk Quantity or Number of Bags		Address
Lot Number		Address
Quality Comments		Contact/Telephone
		Shipper Name
		Address
Received By		Address
Expiration Date		Contact/Telephone

Appendix B

Sample Medicated Ingredient Shipment Traceability Form

Feed Mill Name		
MEDICATED INGREDIENT Ingredient Type		Reception Date
Quantity Received		Unloading Assignment
Bag Size	Package Type	Supplier Name
Drug Name		Address
Drug Potency		Address
Supplier Code		Contact/Telephone
Lot Number		Shipper Name
Return (Damaged or Unacceptable)		Address
Received By		Address
Expiration Date		Contact/Telephone

Appendix C

Sample Product Run Traceability Form

Feed Mill Name		
PRODUCT RUN Feed Type		Manufacture Date
Yield		Dispatch Date
Lot Number		Purchaser Name
Formulation		BAP Certification Number
		Address
		Address
Drug Inclusion		Contact/Telephone
		Shipper Name
Ingredient Source(s)		Address
		Address
		Contact/Telephone
Mixed By	Bin Assignment	Processing Conditions
Sequencing/Flushing		
Return (Misformulated/Damaged)		


Appendix D

Glossary of BAP Definitions

Definitions:

- Acid oils
 - o Oil is derived from further processing/refining of crude fish oil. The resulting acid oil is rich in free fatty acids. This acid oil still has impurities and may further be processed to fatty acids.
- Blended oil products
 - o A blend of fish oils and vegetable oils.
- Byproducts of fish oil refined for human consumption
 - o See fatty acids.
- Byproducts of seafood processed for human consumption
 - o These are products resulting from the processing of seafood for human consumption. Generally termed as offal and of late utilized for various purposes including aqua feed production and pet food.
- Crude Fish Meal
 - o Meal derived from whole, wild capture fishery resources which are produced at a primary rendering facility.
- Crude Fish Oil
 - o Oil derived from whole, wild capture fishery resources which are produced at a primary rendering facility.
- Fatty acids
 - o Oil products derived from crude fish oils that include a secondary refinement or transformation stage. The resulting by-product is rich in omega-3 fatty acids – EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid).
- Mass Balance
 - o Mass Balance is the calculation/verification of the quantity of raw materials/ingredients received against the quantity utilized in the finished feed products. The period of this mass balance is for the previous twelve consecutive calendar months before the Audit Start Date. The calculation considers process waste and rework, if any.
- Primary rendering facility
 - o Facilities that source whole fish and produce fish meals and fish oils.
- Trader/blender/refinery, etc.
 - o Companies or individuals that buy fish meal and fish oil for trade either as whole or by blending fish oils with vegetable oils. A refinery further refines fish oil into fatty acids and acid oils for use as either material for use in feed mills or as supplements for human use.
- 12 Consecutive Calendar Months – Twelve FULL back-to-back months (a period of one year) without any breaks or gaps. See below for examples
 - o Ex: Audit Start Date of 07/15/2024 => mass balance calculation is done for the period starting 07/01/2023 to 06/30/2024 (MM/DD/YYYY)
 - o Ex: Audit Start Date of 12/28/2024 => mass balance calculation is done for the period starting 12/01/2023 to 11/30/2024 (MM/DD/YYYY)

NOTE: Partial months are not considered for the purpose of mass balance calculations and for data input purposes.

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