GUIDELINES — FEED MILLS

The following guidelines provide perspective and clarification for the Best Aquaculture Practices feed mill certification standards. The guidelines were designed to assist program applicants in performing environmental and social impact assessments of their feed mill facilities and developing management systems for compliance with the certification standards.

The word "shall" is used throughout these guidelines to indicate critial provisions. For further information, please refer to the additional resources listed.

Standard 1 — Community
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, 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. The BAP program requires compliance because it recognizes that not all governmental agencies have sufficient resources to effectively enforce laws.

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
- clearances to use medicated ingredients
- air quality assessments
- environmental impact assessments.

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.

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 must 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.

Standard 2 — 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 to assure worker safety and adequate compensation.

Reasons for Standard

Feed plants 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 plants in developing countries may operate in weakly regulated business environments in which pay scales may be low and wage or labor laws may not be consistently enforced. Feed plants 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, feed mill management shall show both compliance with labor laws and a commitment to worker safety. Certified feed mills shall provide legal wages and a safe working environment, and efforts should be made to exceed these minimum requirements.

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 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 by the use of noise-control enclosures, absorbers, silencers and baffles, and by the use of 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 be available free of charge at all times.

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.

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 to record accidents and issues presented at safety meetings.

During facility inspection, the auditor will determine whether conditions comply with labor laws 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

Occupational and Community Noise
WHO Factsheet No. 258 (rev. 2001)
http://www.who.int/mediacentre/factsheets/fs258/en/

Standard 3 — Environment
Fishmeal and Fish Oil Conservation

Feed mills shall strive to reduce dependence on wild fisheries and obtain marine meals and oils from sustainable sources. Certified mills shall provide reliable information on inclusion of such ingredients in compound feeds.

Reasons for Standard

The majority of feeds manufactured for use in aquaculture contain fishmeal and fish oil as protein and lipid sources. Although fishmeal and fish oil are renewable resources, there are limits to the amounts of these products the world's oceans can supply.

The BAP program therefore supports the use of feed ingredients derived from terrestrial sources, as well as fishmeal and fish oil produced from fish processing fishery by-products. Fishery-based ingredients from wild sources shall come from sustainable sources. This standard is concerned with meals and oils derived from wild, marine sources including fish, squid and krill. Where the words "fishmeal" and "fish oil" are used, they refer to the broader category of marine meals and marine oils.

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 feed fisheries include meals and oils from plants, rendered animal proteins and fish-processing by-products from sustainable or non-threatened fisheries.

The evaluation of the sustainability status of reduction fisheries is evolving, and certification programs are developing accordingly. This standard requires development of a plan to avoid unsustainable sources and transition to certified sources as they become available. Facilities shall create and implement clear, written plans of action that define policies for sourcing all fishmeal and fish oil from responsibly managed fisheries.

The plans of action must address how to avoid:

- use of fishmeal or fish oil sourced from illegal, unreported or unregulated fisheries, or by-products from such fisheries
- fishmeal or fish oil sourced from fish or fish by-products from fisheries designated 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"
- any products of the same genus as the species for which the feed is intended.

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 (www.fishsource.org).

After June 1, 2015, 50% of all fishmeal and fish oil from reduction fisheries shall be certified as compliant with approved standards. The preferred approved standard is the Marine Stewardship Council Environmental Standard for Sustainable Fishing (ISEAL compliant), provided it is combined with the MSC chain of custody compliance for the producing factory. The secondary approved standard is the Global Standard for Responsible Supply of the International Fishmeal and Fish Oil Organization (ISO 65 compliant), which includes the fishery as well as traceability, and good manufacturing practice for the producing factory.

Feed mills shall indicate on product labels, packaging, shipping documents or invoices for all aquaculture feeds the relative content of marine proteins and oils derived from industrial capture fisheries in the feeds. These data shall be expressed as a feed fish inclusion factor defined by the following equation:

Equation 1

Feed fish inclusion factor = {Level of fishmeal in diet (%) + Level of fish oil in diet (%)] ÷
[Yield of fishmeal from wild fish (%) + Yield of fish oil from wild fish (%)]

The levels in Equation 1 shall include any meal or oil derived from whole wild-caught fish, squid, krill, mollusks or any other wild marine animals. However, they shall exclude meal or oil derived from fishery by-products such as trimmings, offal and their derivatives such as squid liver powder, and aquaculture by-products such as shrimp head meal.

The feed fish inclusion factor estimates the combined fishmeal and fish oil concentration of the feed on a dry-weight basis relative to the wild fish. Thus, an FFIF value of 2 signifies that the feed is twice as concentrated in marine protein and oil as wild fish. It must be declared with enough precision that the sum of fishmeal and fish oil percentages in the aquafeed does not vary by more than ± 2 percentage points from its actual value calculated on an average monthly basis. For example, if a feed contains 10% fishmeal, 5% fish oil and 12% fishmeal from trimmings, and yields for fishmeal and oil are the default 22% and 8%, the feed fish inclusion factor is:

(10% + 5%) ÷ (22% + 8%) = 0.50

At the farm level, a "fish in:fish out" ratio can then be determined by multiplying the feed fish inclusion factor of the feed by the feed-conversion ratio. For example, for the feed above and a farm FCR of 1.8, the fish in:fish out ratio is: 0.5 x 1.8 = 0.9.

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.

For feed batches, values for yields of fishmeal and fish oil from wild fish shall be verified during the inspection of the feed plant by the comparison of three randomly selected declaration documents from the previous 12 months with their associated formulas. Feed manufacturers may "black out" elements of the requested formulas that are not specifically related to the marine ingredient content.

Additional Information

The State of World Fisheries and Aquaculture
FAO Fisheries and Aquaculture Department — 2008
http://www.fao.org/docrep/011/i0250e/i0250e00.htm

Fish In:Fish Out Ratios Explained
International Fishmeal and Fish Oil Organisation
http://www.iffo.net/intranet/content/archivos/100.pdf

Essential Rendering
National Renderers Association
Alexandria, Virginia, USA
http://nationalrenderers.org/publications/essential_rendering

Crustacean Nutrition
Advances in World Aquaculture, Volume 6
Editors: L. R. D'Abramo, D. E. Conklin, D. M. Akiyama — 1997
World Aquaculture Society
Baton Rouge, Louisiana, USA

Fish Nutrition
Editor: J. E. Halver — 1989
Academic Press, Inc.
San Diego, California, USA

Standard 4 — Environment
Storage and Disposal of Supplies

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

Reasons for Standard
Feed plants 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 the plant's 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 agricultural 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 fuel storage tanks over 2,500 liters in volume and multiple tanks with combined storage of over 5,000 liters. The containment volume shall be equivalent to 110% of individual tanks or 110% of the largest tank in a multiple-tank storage system. "Flammable Material" and "No Smoking" warning signs shall be installed at fuel storage sites.

Oil leaks and spills from equipment should be prevented through good maintenance. Used oil and contaminated refrigerants should be removed and disposed of properly. Outdated 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 locked, 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 avail able. Workers should be trained to properly use the equipment and handle the contained waste.

For Additional Information

USDA NRCS AL Guide Sheet No. AL 701
Spill Prevention Control and Countermeasures
Available online at http://www.al.nrcs.usda.gov/SOsections/Engineering/BMPindex.html

Feed Manufacturing Technology V
Environmental Management
American Feed Industry Association — 2005
Arlington, Virginia, USA

Standard 5 — Environment
Waste Management

Manufacturing by-products, garbage, and paper and plastic refuse shall be disposed of in a sanitary, responsible and biosecure manner.

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.

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 may not be dumped on vacant land. It shall be dealt with according to local law by composting, putting 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 should be recycled if possible. Collection of wastes for recycling requires readily accessible waste containers that are serviced at regular intervals.

For Additional Information

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

Composting
U.S. Enviromental Protection Agency
http://www.epa.gov/compost/

Standard 6 — Food Safety

HACCP Process Controls, Good Manufacturing Practices

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 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.

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.

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 (HAACP), 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 nonprocessed and/or processed aquaculture 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 provide the BAP auditor a documented HACCP plan or equivalent documented feed safety plan. This shall cover:

- standard operating procedures based on GMPs
- detailed accounts of process controls in terms of critical control points, preventative 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 provided.

Good Management Practices

The good mangement practices (GMPS) 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, storage, processing 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 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
- procedures for checking ingredient routings before incoming ingredients are unloaded to avoid cross-contamination
- how processed feeds are separated from unprocessed ingredients and how misformulated, damaged or returned feed is stored so that it cannot contaminate other feeding stuffs
- 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 charts
- critical control points, depicted in an overall process flow chart
- finished products and their presentations
- preventative 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 preventative 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 should 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 plants consider antibiotics in their hazard analyses and show that adulteration with these substances is controlled through verified controls. Feed plants shall also maintain copies of supplier certificates that indicate no banned chemicals or antibiotics were applied to the incoming raw materials. Feed plants 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 toxicants should follow Association of Analytical Communities or equivalent nationally approved analytical methods. Ingredients shall meet applicable statutory standards for levels of pathogens, mycotoxins, herbicides, pesticides and other contaminants that may give rise to human health hazards.

Minerals, supplements and other additives should 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 should 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, should be used where appropriate. Results of treatments should be monitored. Pasteurization can also be acheived 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.

The refeeding of a given species back to the same or closely related species in the form of processed and/or non-processed aquaculture feeds shall be avoided to block this possible route for the spread of disease.

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 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 must 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 should 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.

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 should follow ingredient label directions and regulatory requirements. Products without labels shall not be used.

Mills should 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 should be flushed with ground corn meal or a similar ingredient. Flush material should be routed into the same medicated batch, whenever possible. Bulk feed delivery trucks carrying medicated feeds should be appropriately flushed or sequenced 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 should be stored under conditions specified on the pharmaceutical product label.

Process Control Documentation

The auditor's main method of inspecting a facility is through the inspection of documents and records, so accurate and systematic record keeping, as defined in the HACCP plan, feed safety or quality management system, is a fundamental requirement for certification. Feed plants shall make available records that show all monitoring, verification and corrective actions taken. These shall be up to date and shall be no less than 90% complete.

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 and when an error occurs in processing. Refer to the Traceability section below.

For Additional Information

U.S. Food and Drug Administration Code 21 CFR 225
Current Good Manufacturing Practices for Medicated Feeds
Available online at
http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?CFRPart=225&showFR=1

U.S. Food and Drug Administration Code 21 CFR 589.2000
Available online at
http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?fr=589.2000

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

Code of Practice for the Prevention and Reduction of Dioxin and Dioxin-like PCB Contamination in Foods and Feed
Codex Alimentarius Commission
CAC/RCP 62-2006

AFIA Safe Feed/Safe Food Hazard Guidelines
American Feed Industry Association
http://www.safefeedsafefood.org/images/pdf/II-2.%20Hazard%20Guide%20List%20-revised%2010-09.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 1.1
November 2009, FEFAC
http://www.fefac.org/code.aspx?EntryID=265

IFIF/FAO Manual of Good Practices for the Feed Industry
International Feed Industry Federation
http://www.ifif.org/this_years_feed_manual_new.php

Traceability

Record-Keeping Requirement

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

Reasons for Standard

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

Implementation

Ingredients

To establish traceability for incoming ingredients, the following information shall be recorded for each shipment received (see sample form on page 14):

- ingredient type
- date received
- shipper's name, address and contact details
- supplier's name, address and contact details
- unloading assignment
- bulk quantity or number of bags
- bag size
- packaging type
- unique lot number
- quality comments
- receiver's signature
- expiration date, if applicable.

Medicated Feeds

Particular attention shall be given to record keeping that relates to animal health products and premixes. The following information shall be recorded for each drug received (see sample form on page 15):

- drug name, including potency
- 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.

A daily inventory of drugs and premixes is required with a check on the quantity of drug used against the quantity of medicated feeds produced.

Finished Products

For feed output, documentation should enable the history of each batch, blend or run of product to be determined. The following information shall therefore be recorded for each product run (see sample form on page 15):

- manufacturing date *
- ingredient source(s) including all 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 *
- name, address and contact details for transporter
- name, address and contact details for destination/ purchaser (including BAP certification number, if applicable) *
- misformulated, damaged or returned feed status, especially for medicated feed.

* Data required for online traceability.

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 should be taken to preserve the identity of such material after procurement to facilitate subsequent tracking.

Records should be retained for at least three 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 can maintain paper records of the required data in notebooks or files. If possible, the information should also be transferred to computer database files, with the original files kept to allow verification of the electronic data.

Some of this information shall also be added via the Internet to the BAP online traceability system developed by Trace Register. To participate in the traceability system, the farm shall pay a basic annual fee.

The record-keeping process requires a high degree of care and organization. At large plants, managers could collect initial data for ingredient deliveries and 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.

Sample Ingredient Shipment Traceability Form

<table>
<tr><td colspan="3">Feed Mill Name</td></tr>
<tr><td colspan="2">INGREDIENT
Ingredient Type</td><td>Reception Date</td></tr>
<tr><td colspan="2">Quantity Received</td><td>Unloading Assignment</td></tr>
<tr><td>Bag Size</td><td>Package Type</td><td>Supplier Name</td></tr>
<tr><td colspan="2">Lot Number</td><td>Address</td></tr>
<tr><td colspan="2" rowspan="5">Quality Comments</td><td>Address</td></tr>
<tr><td>Contact/Telephone</td></tr>
<tr><td>Shipper Name</td></tr>
<tr><td>Address</td></tr>
<tr><td>Received By</td></tr>
<tr><td colspan="2">Address</td></tr>
<tr><td colspan="2">Expiration Date</td><td>Contact/Telephone</td></tr>
</table>

Sample Medicated Ingredient Shipment Traceability Form

Feed Mill Name	
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	Address
Received By	Address
Expiration Date	Contact/Telephone

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	