

## **DRAFT Framework of the FDA Animal Feed Safety System**

**Purpose** To provide the proposed framework for the FDA's Animal Feed Safety System (AFSS)

**Scope of the AFSS** The AFSS is an umbrella regulatory program aimed at protecting human and animal health. The AFSS covers regulation of the labeling, production and distribution of all feed ingredients and mixed feeds at all stages of manufacture, distribution and use.

**Operating Principles of the AFSS** The following seven operating principles will be considered in developing the final AFSS products:

1. The responsibility for production, distribution and use of safe animal feed resides with the animal feed and animal production industries.
2. It is the responsibility of federal and state regulatory agencies to provide the rules, guidance and oversight to ensure that all of industry's feed products are safe for the intended species and for people consuming meat, milk and eggs.
3. There will be robust federal-state cooperation covering all aspects of feed regulation.
4. Feed regulatory agencies will continue to periodically conduct inspections of feed-producing facilities, review product labels, and sample and analyze feeds for contaminants and compliance with label guarantees.
5. Because the resources available to FDA are limited, FDA must direct its regulatory resources to those feed-related issues that pose the greatest risk to animal and public health.
6. The AFSS will use risk-based decision-making, where appropriate, to help determine which feed-related health risks should receive the highest priority by FDA, and the best methods for addressing those risks.
7. As much as possible, the AFSS is intended to incorporate feed security measures as they relate to counter-terrorism.

**Major Components of the AFSS** Four blocks or components will comprise the AFSS. These components cover the processes used by FDA to ensure that: ingredients used in animal feeds are safe (components 1 and 2); the methods used in making feeds result in a safe products (component 3); and regulatory oversight is present at levels commensurate with risk to human and animal health (component 4). A detailed description of each component follows, providing each component's objective, scope, description, listings and the gaps that need to be addressed to make the component complete. The AFSS Team, which is comprised of members from FDA's Center for Veterinary Medicine, Office of the Commissioner, and Office of Regulatory Affairs and the states of Kentucky and Wisconsin, has begun addressing the gaps, although much work needs to be done.

### **Component # 1 – Ingredients and the Approval Process**

**Objective:** To describe the processes relied upon by FDA for ensuring that all ingredients and additives used in animal feed are safe for their intended effect.

**Scope:** The processes should apply to all feed ingredients.

**Description:** The primary purpose of animal feed is to provide nutrients. In addition, ingredients/additives are incorporated into animal feed for such purposes as, for example, to add color, ensure stability for nutrients, provide flavor, and prevent mold growth. The Federal Food, Drug, and Cosmetic Act (the Act) provides the authority for FDA to regulate most ingredients and additives used in animal feed.<sup>1</sup> Depending on its intended purpose an ingredient/additive could be classified as a food additive, a generally recognized as safe substance, a new animal drug, or a color additive. Regulations that mandate and specify data requirements and the application/petition format that is required to be submitted for agency review and approval for each of these categories are contained in Title 21 of the Code of Federal Regulations (CFR). A complete citation listing is provided below under Location of Process Descriptions.

FDA also regulates some ingredients and additives using procedures not covered by regulations. For example, a voluntary consultation process is used to review data on plants modified through biotechnology before they enter the market place. Another example is the Association of American Feed Control Officials' (AAFCO) process for adding or modifying feed ingredient definitions, explained in the Association's Official Publication (OP), which includes consultation with the FDA. FDA evaluates the safety of the feed ingredient that is the subject of the definition for AAFCO when such an evaluation is deemed necessary by AAFCO, in consultation with FDA. A third example is that FDA recognizes the names of feed ingredients defined in the AAFCO OP as the common or usual name of the ingredients (see CPG 7126.08).

**Process Descriptions:**

1. Food Additive Petition; FDA (21 CFR 571)
2. New Animal Drug Application (NADA); FDA (21 CFR 514)
3. General Recognition of Safety (GRAS) Petitions - FDA (21 CFR 570); GRAS Notification (CFSAN only)
4. Color Additive Petition; FDA (CFSAN) (21 CFR 71)
5. AAFCO Ingredient Definition Process (2004 Official Publication; pg 247)
6. Common or Usual Name Recognized by the Secretary/Director/ Commissioner of Agriculture; FDA and AAFCO (21 CFR 502 and AAFCO OP)
7. Bioengineered Plants – CFSAN Guidance document, October 1997 - consultation process with FDA
8. Drugs, Biologics, and Medical Devices Derived From Bioengineered Plants for Use in Humans and Animals (FDA Draft Guidance #153)
9. AAFCO Feed Labeling Model Regulations and Guides (food-producing animals and pet animals) – 2004 Official Publication

**Ingredient/Additive Listings:**

1. Food Additives Permitted in Feed and Drinking Water for Animals -21 CFR 573
2. New Animal Drugs for Use in Animal Feeds - 21 CFR 558
3. Generally Recognized of Safe (GRAS) substances - 21 CFR 582 & 584
4. Color Additives - 21 CFR 73 & 74

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<sup>1</sup> Some articles added to animal feed fall under the purview of other federal agencies. Feed-through pesticides are regulated by the Environmental Protection Agency (EPA) and vaccines added to animal feed are the responsibility of the United States Department of Agriculture (USDA).

5. Feed Ingredient Definitions - AAFCO 2004 OP (pp 250 – 353)
6. Substances Prohibited for Use in Food and Feed (21 CFR 589)
7. Bioengineered Plants - CFSAN home page (<http://www.cfsan.fda.gov/>) and 9 CFR 340
8. Animal Food Labeling - 21 CFR 501, 21 CFR 201
9. Compliance Policy Guide 7126.08 - Common or Usual Names for Animal Feed Ingredients
10. Pesticides Approved by EPA for Use in Feed and on Crops - 40 CFR 180
11. Biologic Products Approved by USDA for Use in Animal Feed - 9 CFR 101-123

### **Identified Gaps:**

1. The AAFCO OP, a non-federal listing, is a source of information on permitted ingredients/additives in animal feed. A Compliance Policy Guide (CPG) that (1) explains the relationship between FDA and AAFCO and (2) establishes a policy whereby FDA would recognize the ingredients defined in the OP as acceptable for use in animal feed is being developed to address this potential barrier. FDA is also considering the promulgation of a regulation in addition to a CPG. A regulation would be more binding than a CPG and less subject to variation in interpretation. The CPG would, however, define the relationship between AAFCO and FDA.

## **Component #2 – Limits for Animal Feed Contaminants**

**Objective:** To use risk-based mechanisms to identify and develop limits for potentially hazardous contaminants in animal feeds and feed ingredients.

**Scope:** For the purpose of this AFSS component, contaminants are defined as potentially toxic or deleterious biological, chemical or physical hazards that are inadvertently present in animal feeds and feed ingredients.<sup>2</sup> Feed contaminants can result from contact of feeds and feed ingredients with environmental, agricultural, industrial or other sources of hazards at any stage of the feed continuum—from pre-harvest activities, through feed manufacturing, storage and transportation, to on-farm feeding practices. Contaminants initially present in feeds and feed ingredients at levels low enough so that risks from the contaminants are also low, may be inadvertently increased to toxic or deleterious levels in animal feeds and feed ingredients by certain harvesting and manufacturing practices or storage conditions.

**Description:** Several approaches are used by the agency to help prevent or control risks from potentially hazardous contaminants in regulated products, such as establishing regulatory or guidance limits for the contaminants, prescribing process controls for the regulated products, or relying on a case-by-case review by experts to determine whether specific contamination incidents are unsafe. This AFSS Component addresses establishing regulatory or guidance limits for potentially hazardous feed contaminants. Such limits can take the form of tolerances, which

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<sup>2</sup> Does not include unapproved or prohibited feed ingredients; these ingredients are intentionally added to animal feeds to achieve a technical or nutritional effect, but are either not approved by any of the mechanisms identified under Component #1 or are actually prohibited by FDA for use in all or some animal feeds; also does not include inherent, naturally occurring constituents of animal feeds or feed ingredients or contaminants that may arise directly from the manufacturing process (e.g., residual starting materials), because these hazards are identified and controlled during the feed ingredient approval processes under Component #1.

are regulations that have the force of law, action levels, which are informal judgments about the levels at which consumers may be safely exposed to contaminants, regulatory limits, which identify levels of contaminants at which animal feeds and feed ingredients are considered to be adulterated, and guidance levels. Once limits for contaminants are established, risks from the contaminants can be controlled by either product- or process-based approaches, either initiated by industry or required by a federal or state regulatory agency.

**Process Descriptions:** Procedures for establishing limits for contaminants in feed and feed ingredients include the following:

1. Setting tolerances, action levels and regulatory limits for feed contaminants are described in 21 CFR 509.4 through 509.7.
2. Setting guidance levels are described in FDA's Good Guidance Practices Regulations, 21 CFR 10.115.

**Contaminant Limits:** Limits on contaminants in food and feed have been established by FDA, the U.S. Environmental Protection Agency (EPA), the Association of American Feed Control Officials (AAFCO), Codex Alimentarius Commission, the Food and Agricultural Organization (FAO) and the World Health Organization (WHO)

1. Aflatoxin action levels (FDA's Compliance Policy Guide (CPG) 683.100;
2. Pesticide tolerances (FDA's Code of Federal Regulations (CFR), Title 40, Part 186 and FDA's CPG 575.100;
3. Pesticide action levels (FDA's CPG 575.100 & Federal Register (FR), Vol. 55, No. 74; April 17, 1990);
4. Temporary tolerances for PCB's (FDA's 21 CFR 509.30);
5. Guidance levels for fumonisin (FDA's Guidance for Industry #112);
6. Substances prohibited from use in animal food or feed (FDA's 21 CFR 589);
7. Tolerances established for drugs in food (FDA's 21 CFR 556);
8. Guidance levels for trace mineral contaminants (AAFCO's 2004 Official Publication; pg 314); and
9. Regulatory limit for Salmonella (FDA's 21 CFR 500.35).

**Identified Gaps:**

1. The AFSS Team is developing a method for ranking risks to animal and public health from potentially hazardous biological, chemical and physical contaminants in animal feed. The risk-ranking exercise will rank feed risks overall and also for specific feeds and/or feed ingredients (product-related risks), manufacturing processes (process-related risks), and types of facilities--feed manufacturers, transporters and on-farm mixers (facility-related risks). The AFSS Team will use this risk information to develop a risk-based approach for 1) determining which feed contaminants present the greatest risks to animal and human health and 2) deciding how such risks can be prevented or controlled.
2. If the AFSS Team decides that limits for additional feed contaminants need to be established as action levels, tolerances, regulatory limits or guidance, analytical methods for detecting those contaminants in feed matrices will need to be developed and validated. The FDA will need official regulatory methods. Industry and government could use rapid, inexpensive and reliable test kits for monitoring of feed and feed ingredients.

3. Some of the feed hazards identified by the AFSS Team are those that may arise from deliberate contamination of feed and feed ingredients, such as bioterrorist acts. While the authority for ensuring feed safety rests principally with the FDA and the states, the USDA has the responsibility for controlling livestock diseases, even those that can be transmitted through contaminated feed, such as foot and mouth disease, classical swine fever and swine vesicular disease. USDA has traditionally accomplished this control through the regulation of garbage feeding and disease surveillance. However, the AFSS can help USDA improve methods of preventing, coordinating responses to, and investigating terrorist incidents involving the deliberate contamination of feed or feed ingredients with an exotic animal disease.

### **Component # 3 – Process Control for the Production of Feed Ingredients and Mixed Feed**

**Objective:** To ensure the safe manufacture, packaging, storage, distribution or use of all feed ingredients and mixed feed.

**Scope:** Firms and individuals involved in manufacturing, packaging, storage, distribution or use of feed ingredients and mixed feed, including on-farm operations.

**Description:** Process control is a systematic approach designed to ensure feed safety through the identification and use of appropriate manufacturing, packaging, storage, distribution and/or use controls for feed ingredients and mixed feed. Feed process control entails measures that seek to prevent, eliminate or reduce to an acceptable level risks to animals and humans. Established verification procedures in a feed process control system are used to confirm that products are safe and comply with regulatory requirements. The Federal Food, Drug, and Cosmetic Act provides the statutory authority to regulate the manufacture, packaging, storage, and use of animal drugs, including Type A medicated articles and medicated animal feed to assure conformity with current good manufacturing practices (cGMPs). Regulations that mandate and specify medicated feed and Type A medicated article cGMPs are located in Title 21 of the Code of Federal Regulations (21 CFR 225 and 226, respectively). Complete citations of the regulations are listed below.

The FDA has utilized the following approaches to establish process controls in other product areas: Hazard Analysis and Critical Control Points (HACCP), Standard Operating Procedures (SOPs), Sanitation Standard Operating Procedures (SSOPs) and other resources pertaining to production, manufacturing, packaging, storage, distribution or use of various commodities. The AFSS Team is reviewing these approaches to determine their applicability to feed ingredients and mixed feed regulatory oversight.

#### **Operations/Manufacturing Process Listings:**

1. Medicated Feed cGMPs (21CFR 225)
2. Type A Medicated Article cGMPs (21 CFR 226)
3. AAFCO Feed Manufacturing Guidance (2004 OP pg 201) and Proposed Regulations (in progress)
4. Low acid canned food regulations (21 CFR 500.23)

5. Codex Code of Practice for Good Animal Feeding  
[http://www.codexalimentarius.net/web/codex/codex27\\_en.htm](http://www.codexalimentarius.net/web/codex/codex27_en.htm)
6. HACCP; (seafood 21 CFR 123 and juice 21 CFR 120)
7. SSOP (21 CFR 120.6 and 123.11)

### **Identified Gaps in Process Controls for the Production of Feed Ingredients and Mixed Feed**

1. Currently, the FDA has regulations that govern the controls used in the manufacturing, packaging, storage, and use of medicated animal feed. However, to have a comprehensive Animal Feed Safety System, a broader regulatory approach may be required to address feed safety concerns associated with the manufacture, packaging, storage, distribution or use of non-medicated feed ingredients and mixed feed. The AFSS Team intends to consider the information gleaned from the public meetings and from responses to materials placed in the AFSS docket in its development of process control approach(es).

### **Component #4 – Regulatory Oversight**

**Objective:** Develop a framework for use in prioritizing and allocating inspection and enforcement resources to minimize risks to animal and human health.

**Scope:** The process should apply to FDA’s feed regulatory program activities (e.g., label review, education, inspections, enforcement and information sharing) and to similar state actions conducted using FDA authority.

**Description:** The primary purpose of an inspection is to determine a firm’s or product’s degree of compliance with applicable regulations. Surveillance inspections are conducted to determine whether a firm is substantially in compliance with the regulations and operating “under control.” Compliance inspections are conducted to evaluate a firm’s compliance with the provisions of the regulations and to document inspectional observations supporting possible enforcement action. Because the majority of inspections of feed manufacturing and distribution establishments that fall under the jurisdiction of FDA are done by state agencies using federal or state authority, a strong working relationship with state counterparts should be a significant component of the FDA’s Animal Feed Safety System. A scientific- and risk-based approach should be utilized to improve the agency’s ability to prioritize and allocate inspection resources by targeting firms, facilities, products and processes that have been identified as posing the greatest risks to animal or human health.

FDA has a variety of enforcement options available. Regulatory enforcement often focuses on voluntary compliance with the law and regulations. When voluntary compliance and education are unsuccessful, the agency has other enforcement options, such as, untitled letters, warning letters, informal hearings/meetings, mediation, civil penalties, administrative hearings, injunctions, and criminal prosecutions.

**Inspection and Enforcement Descriptions:** Inspections (FD&C Act Subchapter 701;

1. IOM Subchapter 501 [http://www.fda.gov/ora/inspect\\_ref/iom/contents/ch5\\_toc.html](http://www.fda.gov/ora/inspect_ref/iom/contents/ch5_toc.html);  
(AAFCO Model Bill)

2. Enforcement (FD&C Act Subchapter 704-706; IOM Chapter 7  
[http://www.fda.gov/ora/inspect\\_ref/iom/contents/ch7\\_toc.html](http://www.fda.gov/ora/inspect_ref/iom/contents/ch7_toc.html)
3. Federal-State Cooperation (IOM Chapter 3  
[http://www.fda.gov/ora/inspect\\_ref/iom/contents/ch3\\_toc.html](http://www.fda.gov/ora/inspect_ref/iom/contents/ch3_toc.html); Regulatory Procedures Manual  
<http://intranet.ora.fda.gov/qms/drafts/rpm-master.htm>
4. Audits conducted by FDA of state inspections [http://www.fda.gov/ora/inspect\\_ref/fmd/fmd76-Appendix.htm](http://www.fda.gov/ora/inspect_ref/fmd/fmd76-Appendix.htm)

**Inspection and Enforcement Listings:**

1. Administrative actions refer to 21 CFR, particularly parts 12, 511, 514, and 571  
<http://www.access.gpo.gov/cgi-bin/cfrassemble.cgi?title=200321>
2. FDA and AAFCO Enforcement Guidelines (CVM Policy and Procedure Guide 1240.3600)
3. Federal and State Audits (A guideline is being developed)
4. First-party inspections (Voluntary Self-Inspection Program – CPG Draft; expected to be published in 2005)
5. Inspection priorities (BSE Compliance Plan 7371.009)  
<http://www.fda.gov/cvm/index/cpg/7371-009.doc>

**Identified Gaps:**

1. The agency has established priorities for inspections under the BSE inspection program based on a combination of risk factors. CVM is currently developing a risk-based inspectional approach for other feed-related inspections, which is not expected to be completed until FY 2006. The AFSS Team expects to rely on this approach for animal feed and feed ingredients.
2. Regulatory oversight has focused principally on the commercial medicated feed industry even though there has been a major shift to more on-farm production of all types of feed. Some on-farm operations are making more feed than most commercial feed companies. Vehicles that are used to transport feed are also not receiving much inspectional scrutiny. This can be a significant cross-contamination issue. The AFSS Team is developing a more comprehensive regulatory approach that will cover all segments of the animal feeding industry including transporters, mixer-feeders, and livestock producers.
3. Ensuring the competency and proficiency of FDA field and state inspectors, compliance officers and program personnel regarding animal feed regulations, policies and program directives is essential. The AFSS Team will be seeking input from all stakeholders on means for having the most knowledgeable feed inspection force possible. Traditional and novel approaches for providing initial and reinforcement training will be solicited.