

STANDARDS FOR ANIMAL FEEDS AND ESTABLISHMENTS RELATED TO PRODUCTION, STORAGE, AND MARKETING.

1. Requirements of Feed Business at the level of Primary Production

- 1.1. Feed business operators responsible for primary production shall ensure that operations are managed and carried out in such a way as to prevent, eliminate or minimize hazards with the potential to compromise feed safety, wherever possible taking account, where appropriate, of subsequent processing.
- 1.2. Feed business operators shall ensure, as far as possible, that primary products produced, prepared, cleaned, packed, stored and transported under their responsibility are protected against contamination and spoilage.
- 1.3. Feed business operators shall meet the obligations in paragraphs 5.1.1 and 5.1.2 by complying with the control of hazards in primary production, including:
 - (a) measures to control contamination arising from the air, soil, water, fertilizers, plant protection products, biocides, veterinary medicinal products and handling and disposal of waste, and
 - (b) measures relating to plant health, animal health and the environment that have implications for feed safety including programmes for the monitoring and control of zoonoses and zoonotic agents.
- 1.4. Feed business operators shall take adequate measures, as appropriate:
 - (a) to keep clean and, where necessary after cleaning, to disinfect in an appropriate manner facilities, equipment, containers, crates and vehicles used for producing, preparing, grading, packing, storing and transporting feed;
 - (b) to ensure, where necessary, hygienic production, transport and storage conditions for, and the cleanliness of feed;
 - (c) to use clean water whenever necessary to prevent contamination;
 - (d) to prevent, as far as possible, animals and pests from causing contamination;
 - (e) to store and handle wastes and hazardous substances, separately and securely, so as to prevent contamination;
 - (f) to ensure that packaging materials are not a source of contamination of feed;
 - (g) to take account of the results of any relevant analyses carried out on samples taken from primary products or other samples relevant to feed safety.
- 1.5. Feed business operators shall complete and retain records relating to measures put in place to control hazards in an appropriate manner and for an appropriate period, commensurate with the nature and size of the feed business. Feed business operators

must make relevant information contained in these records available to the competent authority.

- 1.6. Feed business operators must, in particular, keep records on:
 - (a) any use of plant protection products and biocides ;
 - (b) use of genetically modified seeds;
 - (c) any occurrence of pests or diseases that may affect the safety of primary products;
 - (d) the results of any analyses carried out on samples taken from primary products or other samples taken for diagnostic purposes that have importance for feed safety.
- 1.7. Other persons, such as veterinarians, agronomists and farm technicians, may assist the feed business operators with the keeping of records relevant to the activities they carry out in the farm.
- 1.8. Guides to good manufacturing practices shall include appropriate information on hazards arising in primary production and actions to control hazards, including relevant measures set out in national legislation such as:
 - (a) the control of contamination such as mycotoxins, heavy metals, radioactive material.;
 - (b) the use of water, organic waste and fertilizers;
 - (c) the correct and appropriate use of plant protection products and biocides and their traceability;
 - (d) the correct and appropriate use of veterinary medicinal products and feed additives and their traceability;
 - (e) the (preparation, storage and) traceability of feed materials;
 - (f) the proper disposal of dead animals, waste and litter;
 - (g) protective measures to prevent the introduction of contagious diseases transmissible to animals through feed and any obligation to notify the competent authority;
 - (h) procedures, practices and methods to ensure that feed is produced, prepared, packed, stored and transported under appropriate hygienic conditions, including effective cleaning and pest-control;
 - (i) measures relating to record-keeping.

2. Requirements for feed businesses other than at the level of primary production

- 2.1. Feed processing and storage facilities, equipment, containers, crates, vehicles and their immediate surroundings shall be kept clean, and effective pest control program shall be implemented.
- 2.2. The lay-out, design, construction and size of the facilities and equipment shall:
 - (a) permit adequate cleaning and/or disinfection
 - (b) be such as to minimize the risk of error and with a view to avoiding contamination, cross-contamination and any adverse effects generally on the safety and quality of the products. Machinery coming into contact with feed shall be dried following any wet cleaning process.
- 2.3. Facilities and equipment to be used for mixing and/or manufacturing operations shall undergo appropriate and regular checks, in accordance with written procedures pre-established by the manufacturer for the products.
 - (a) All scales and metering devices used in the manufacture of feeds shall be appropriate for the range of weights or volumes to be measured and tested for accuracy regularly.
 - (b) All mixers used in the manufacture of feeds shall be appropriate for the range of weights or volumes being mixed, and shall be capable of manufacturing suitable homogeneous mixtures and homogeneous dilutions.
- 2.4. Facilities must have adequate natural and/or artificial lighting.
- 2.5. Drainage facilities must be adequate for the purpose intended; they must be designed and constructed to avoid the risk of contamination of feeding stuffs.
- 2.6. Water used in feed manufacture shall be of potable quality for animals; the conduits for water shall be of an inert nature.
- 2.7. Sewage, waste and rainwater shall be disposed of in a manner which ensures that equipment and the safety and quality of feed is not affected. Spoilage and dust shall be controlled to prevent pest invasion.
- 2.8. Windows and other openings must, where necessary, be fitted with pest-proof netted screens. Doors must be close-fitting and pest-proof when closed.
- 2.9. Where necessary, ceilings and overhead fixtures must be designed, constructed and finished to prevent the accumulation of dirt and to reduce condensation, the growth of undesirable moulds and the shedding of particles that can affect the safety and quality of feed.

3. Personnel

- 3.1. Feed businesses must have sufficient staff possessing the skills and qualifications necessary for the manufacture of the products concerned. An organization chart setting out the qualifications (e.g. diplomas, professional experience) and responsibilities of the supervisory staff must be drawn up and made available to the competent authorities responsible for inspection. All the staff must be informed clearly in writing of their

duties, responsibilities and powers, especially when any change is made, in such a way as to obtain the desired product quality.

4. Production

- 4.1. A qualified person responsible for production must be designated.
- 4.2. Feed business operators must ensure that the different stages of production are carried out according to pre-established written procedures and instructions aimed at defining, checking and mastering the critical points in the manufacturing process.
- 4.3. Technical or organizational measures must be taken to avoid or minimize, as necessary, any cross-contamination and errors. There must be sufficient and appropriate means of carrying out checks in the course of manufacture.
- 4.4. The presence of prohibited feed materials, undesirable substances and prohibited substances and pathogens in relation to human health or animal health shall be monitored, and appropriate control strategies to minimize the risk shall be in place.
- 4.5. Waste and un-saleable materials should be isolated and identified. Any such materials containing hazardous levels of veterinary drugs, contaminants or other hazards shall be disposed of in an appropriate way and not used as a feed.

5. Quality control

- 5.1. A qualified person responsible for quality control must be designated.
- 5.2. Feed businesses must, as part of a quality assurance scheme, have access to a laboratory with adequate staff and equipment to guarantee and check, before the release of the products with a view to putting them into circulation, that they comply with the specifications defined by the manufacturer.
- 5.3. A quality control plan must be drawn up in writing and implemented, to include, in particular, checks on the critical points in the manufacturing process, sampling procedures and frequencies, methods of analysis and their frequency, compliance with the specifications –and the destination in the event of non-compliance - from processed materials to final products.
- 5.4. Samples of ingredients and of each batch of products placed on the market or of each specific portion of production (in the case of continuous production) must be taken in sufficient quantity using a procedure pre-established by the manufacturer and be retained in order to ensure traceability (on a regular basis in the case of manufacture solely for the manufacturer's own needs). The samples must be sealed and labeled for ease of identification; they must be stored under conditions which prevent any abnormal change in the composition of the sample or any adulteration. They must be kept at the disposal of the competent authorities for a period appropriate for the use to which the feed are placed in the market.

6. Storage and Transport

- 6.1. Processed feeds shall be separated from unprocessed feed materials and additives in order to avoid any cross-contamination of the processed feed, and proper packaging materials shall be used.
- 6.2. Feeds shall be stored and transported in suitable containers. They shall be stored in places designed, adapted and maintained in order to ensure good storage conditions, to which only persons authorized by the feed business operators have access.

- 6.3. Feeds shall be stored and transported in such a way as to be easily identifiable, to avoid any confusion or cross-contamination and to prevent deterioration.
- 6.4. Containers and equipment used for transport, storage, conveying, handling and weighing shall be kept clean. Cleaning programmes shall be introduced, and traces of detergents and disinfectants shall be minimized.
- 6.5. Any spoilage shall be minimized and kept under control to reduce pest invasion.
- 6.6. Temperatures shall be kept as low as possible to avoid condensation and spoilage.

7. Documentation

- 7.1. All feed businesses operators, including those who act solely as traders without ever holding the product in their facilities, shall keep in a register records with relevant data comprising purchase, production and sales for effective tracing from delivery or export to the final destination.
- 7.2. Feed business operators, except those who act solely as dealers without ever holding the product in their facilities, shall keep in a register the following documentation:

(a) Documentation relating to the manufacturing process and controls. Feed businesses must have a system of documentation designed to define and ensure mastery of the critical points in the manufacturing process and to establish and implement a quality control plan. They must keep the results of the relevant controls. This set of documents must be kept so that it is possible to trace the manufacturing history of each batch of products put into circulation and to establish responsibility if complaints arise.

(b) Documentation relating to traceability on:

(i) Additives:

- the nature and quantity of the additives produced, the respective dates of manufacture and, where appropriate, the number of the batch or of the specific portion of production, in the case of continuous manufacture;
- the nature and quantity of the additives delivered and, where appropriate, the number of the batch or of the specific portion of production, in the case of continuous manufacture;
- the nature of the products and the quantity produced, the respective dates of manufacture and, where appropriate, the number of the batch or of the specific portion of production, in the case of continuous manufacture;
- the name and address of the establishments or users (establishments or stock-breeders) to whom these products have been delivered, together with details of the nature and quantity of the products delivered and, where appropriate, the number of the batch or of the specific portion of production, in the case of continuous manufacture.

(ii) Premixtures:

- the name and address of the manufacturers or suppliers of additives, the nature and quantity of the additives used and, where appropriate, the number of the batch or of the specific portion of production, in the case of continuous manufacture;

- the date of manufacture of the premixture and the batch number where appropriate;
 - the name and address of the establishment to which the premixture is delivered, the delivery date, the nature and quantity of the premixture delivered, and the batch number where appropriate.
- (iii) Compound feeding stuff/feed materials:
- the name and address of premixture manufacturers or suppliers, the nature and quantity of the premixture used, with the batch number where appropriate;
 - the name and address of the suppliers of the feed materials and the delivery date;
 - the nature and quantity of feed materials or compound feeding stuffs manufactured, together with the date of manufacture, and the name and address of the buyer (e.g. stock-breeder, other feed businesses).

8. Complaints and Product Recall

- 8.1. Feed business operators shall implement a system for registering and processing complaints.
- 8.2. They shall be in a position to introduce, where this proves necessary, a system for the prompt recall of products in the distribution network. They shall define by means of written procedures the destination of any recalled products, and before such products are put back into circulation they must undergo a quality-control reassessment.

9. Good Animal Feeding Practice

9.1. Pasture grazing

The grazing of pastures and croplands should be managed in a way that minimizes the contamination of foods of animal origin by biological and chemical hazards. Where appropriate, an adequate rest period should be observed before allowing livestock to graze on pasture, crops and crop residues and between grazing rotations to minimize biological cross-contamination from manure, where such a potential problem exists, and to ensure that the withholding periods for agricultural chemical applications are observed.

9.2. Stable feeding and batch/intensive unit feeding

- 9.2.1 The animal production unit should be designed so that it can be easily cleaned. The animal production unit and feeding equipment should be cleaned thoroughly and regularly to prevent any build-up of biological hazards. Chemicals used for cleaning and sanitizing should be used according to instructions and stored away from feed and feeding areas.
- 9.2.2. A pest control system should be put in place to control the access of pests to the animal production unit with a view to minimizing the possibility of biological contamination of feed and bedding materials or animal units.

9.2.3. Buildings and feeding equipment should be kept clean. Systems should be put in place to regularly remove manure, waste material and other possible sources of biological contamination of feed. Feed and bedding material used in the animal production unit should be frequently changed and not allowed to become mouldy.

9.3. Feeding

9.3.1. Storage

Feed should be stored separately from chemicals. Storage areas and containers should be kept clean and dry and free from pests that may introduce biological contaminants. Storage areas and containers should be cleaned regularly to avoid unnecessary cross-contamination. Seed should be stored properly and in such a way that is not accessible to animals. Medicated feed, non-medicated feed and compound feeding stuffs intended for different categories or species of animals should be stored such as to reduce the risk of cross-feeding.

9.3.2. Distribution

The on-farm feed distribution system should ensure that the right feed is sent to the right destination. During distribution and feeding, feed should be handled in such a way as to ensure that biological contamination does not occur from contaminated storage areas and equipment. Non-medicated feeds should be handled separately from medicated feeds to prevent contamination. Feed transport vehicles and feeding equipment used to deliver and distribute medicated feed should be cleaned periodically.

9.3.3. Feed and water

Farmers should evaluate and minimize the risks of biological or chemical contamination of animals through drinking water, or thorough direct contact with aquatic animals. Feeding and watering equipment must be designed, constructed and placed such that contamination of feed and water is minimized. Watering systems should be cleaned and maintained regularly, where possible.

9.3.4. Personnel

Animals should be fed by staff possessing the requisite ability, knowledge and professional competence.

10. Standards of animal feeds of various species of animals and poultry are as follows:

Minimum and maximum Nutrient Requirement of Current Feed					
Nutrient	Cattle Conc.	Calf Starter	Creep Feed	Pig Starter	Pig grower
Dry Matter(Min) %	88	88	88	88	88
ME (Min) K. Cal	2500	3000	3100	3000	2900

CP (Min) %	18	18 - 20	21	19	16
TDN ((Min) %	70 - 72	70			
Crude fat (Max) %	5	5	5	5	5
Crude fibre (Max) %	10	10	5	5	6
Ash %	4				
Sand Silica (Max)%	10	10	6	6	6
Aflatoxin (Max) PPb		15	10	10	10
NFE %			63	56	56
Lysine %			0.95	0.79	0.7
Methione + Cystine %			0.56	0.51	0.45
Mineral Elements					
Calcium %	0.8	0.6	0.89 - 0.92	0.7 - 0.73	0.85- 0.87
Phosphorus %	0.7	0.47	0.86 - 0.7	0.79 - 0.81	0.69 - 0.71
Sodium %	0.2	1	0.1	0.1	0.1
Chlorine %	0.1	0.1	0.13	0.13	0.13
Vitamins per Kg Feed.					
Vitamin A (IU)	1450	1000	2200	1750	1300
Vitamin D (IU)	140	140	220	200	200
Vitamin E (IU)			11	11	11
Vitamin K (mg)	200	200	2	2	2

Nutrient	Pig finisher	Sow ration	Chick starter	Chick grower	Breeder ration
Dry Matter(Min) %	88	88	88	88	88
ME (Min) K. Cal	2800	3000	2800	2700	2700
CP (Min) %	14	16	20	16	16
TDN ((Min) %					
Crude fat (Max) %	5	5	5	5	5
Crude fibre (Max) %	6	7	5	5	6
Ash %					
Sand Silica (Max)%	6	6		6	6
Aflatoxin (Max) PPb	10	10	10	10	10
NFE %	56	60			
Lysine %	0.57	0.58	1	0.8	0.85
Methione + Cystine %	0.3	0.36	0.8	0.7	0.6

Mineral Elements					
Calcium %	0.65 - 0.82	0.89 - 0.91	0.9 - 1.1	0.9 - 1.1	3.3 - 3.5
Phosphorus %	0.55 - 0.66	0.7 - 0.74	0.68 - 0.7	0.58 - 0.6	0.68 - 0.7
Sodium %	0.1	0.2	0.15	0.15	0.12
Chlorine %	0.13	0.3	0.15	0.12	0.1
Vitamins per Kg Feed.					
Vitamin A (IU)	1300	2000	4000	3000	5000
Vitamin D (IU)	125	200	450	450	500
Vitamin E (IU)	11	10	7	2.5	7.5
Vitamin K (mg)	2	2	1	1	1

Nutrient	Pheasant starter	Pheasant rearer	Pheasant grower	Pheasant breeder	Sheep	Molasses
Dry Matter(Min) %	88	88	88	88	88	80
ME (Min) K. Cal	2590	2500	2490	2580	3000	
CP (Min) %	28	25	19.9	18	18	32
TDN ((Min) %						40%
Crude fat (Max) %	4.5	4.7	5.3	5.5		
Crude fibre (Max) %	6.4	6.9	6.5	5		
Ash %						
Sand Silica (Max)%	6	6	6	6	6	
Aflatoxin (Max) PPb	10	10	10	10	10	
NFE %						
Lysine %	1	0.7	0.75	0.7	0.85	
Methione + Cystine %	0.8	0.7	0.7	0.85	0.65	
Mineral Elements						
Calcium %	1.15	1	0.99	3	0.85	
Phosphorus %	1.2	0.01	1.03	0.97	0.65	
Sodium %	0.1	0.15	0.15	0.15	0.2	
Chlorine %	0.15	0.12	0.12	0.1	0.3	
Vitamins per Kg Feed.						
Vitamin A (IU)	6000	4000	3500	5000	1300	
Vitamin D (IU)	200	350	300	500	125	
Vitamin E (IU)	400	350	300	400	11	
Vitamin K (mg)	8	5	3	3	2	

ME = Metabolisable energy; CP = Crude protein; TDN = Total digestible Nutrient;
 PPb = Parts per billion; IU = International unit; K. Cal = Kilo calories; NFE =
 Nitrogen free extract.

Specification of Urea Molasses Block		
Ingredient	Specification	Parts
1. Cane Molasses	25% moisture	40
2. Wheat bran	Coarse type	22
3. Urea	46% Nitrogen	9
4. Till Cake	Ground & heated	12
	at 60-65 °C	
5. Iodized Salt		5
6. Cement		12
7. Water	Not more than 3 litres per 12 kg cement.	
Weight	2 kg per block	