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Recommendations for the Development of a Biosecurity Plan in the EU Compound Feed Industry

Version 1.0 - 20 June 2019

**FEDERATION EUROPEENNE DES FABRICANTS D'ALIMENTS
COMPOSES POUR ANIMAUX**

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Preamble

Outbreaks of pathogenic diseases are not new but internationalization of trade and personnel mobility contributes to facilitate dissemination of pathogens sometimes over long distances. **Minimising the risk of incidental dissemination of pathogens is everybody's business:** farmers, agro-supply industry, grain collectors and farm visitors (advisors, service providers, etc).

Biosecurity is defined as « *a set of preventive measures designed to reduce the risk of transmission of infectious diseases in crops and livestock, quarantined pests, invasive alien species, and living modified organisms* » (Koblentz, 2010). As far as feed compounder is concerned, this means controlling his feed ingredient supply chain for the microbiological risk and ensuring that his activities (manufacturing, storage, transport) do not contribute to the dissemination of pathogens from feed mill to farm, from farm to farm and from farm to feed mill.

Pathogens may be disseminated through different pathways, i.e. **primarily through contacts with sick wild animals or with humans or via fomites** such as trucks, packaging material, clothes etc. Oral transmission of pathogens (e.g. Salmonella, viruses) via feeding or drinking was also demonstrated.

EU Feed hygiene legislation (Regulation (EC) No 1831/2003) sets a solid baseline to manage the risk of dissemination of **any pathogen** via feed: guides to good practice have been developed at EU and national level to help operators implementing prerequisite programmes and HACCP-based procedures for the control of hazards in feed. Additional provisions are required to address the risk of dissemination of pathogens via other vectors than feed (i.e. vehicle, personnel).

The nature of the measures to be taken depends on a number of parameters specific to the individual feed company e.g. its geographic location, the type of feed produced (species), the origin and nature of feed ingredients used, etc. This means that **a biosecurity plan is to be drafted by each company based on its own risk assessment.**

A number of measures shall be considered as prerequisite, irrespective of the type of pathogen or the prevalence of zoonoses. Additional provisions shall be foreseen in case of high risk linked to specific zoonoses and disease transfer risk, taking also into account specific national (legal) measures where relevant.

Certain diseases triggered by pathogens are also relevant for human. Biosecurity measures are meant to minimize also the risk for personnel.

The purpose of this document is to:

- Set recommendations for the drafting of a biosecurity plan, composed of prerequisites and additional measures foreseen in case a specific zoonose or disease transfer risk is relevant;
- Draw attention to parameters specific to pathogens to be considered in feed hygiene related HACCP plans for feed safety management;
- Provide recommendation for the management of the risk of transmission of pathogens through other vectors than feed (vehicles, fomites, humans).

The focus of this document is on biosecurity measures for the operations of **sourcing of feed ingredients, transport, storage, manufacturing and delivery of final feed to farms**. It also covers **visits to farms** of feed company personnel.

These recommendations are meant **primarily for operators based in countries where there is no detailed professional/legal guidance yet** for the drafting and implementation of biosecurity plans at feed mill levels. They must be considered in the light of national guidance and /or legal requirements where relevant.



OVERVIEW OF KEY PRINCIPLES FOR DRAFTING A BIOSECURITY PLAN IN THE EU COMPOUND FEED INDUSTRY

Principle 1: Each feed manufacturer should draft a biosecurity plan, implement it and keep it updated.

This plan should:

- Be science based and drafted by a team including veterinarian expertise;
- Cover the operations from feed ingredients intake until delivery to the farm and farm visitors;
- Comply with legal requirements related to biosecurity defined under European and national law where relevant;
- Foresee effective training and be subject to frequent auditing (internal or external as appropriate);
- Be reviewed, maintained and adapted to new practices or processes for new foreign animal diseases;
- Include minimum generic requirements regarding interactions with farms (prerequisites), as well as additional requirements in case of specific zoonoses or disease transfer risk, depending on location of farms, virulence of the pathogenic agent and the type of animal species kept;
- Consider also the risk for personnel.

Chapter 1 provides some recommendations on how to draft a biosecurity plan.

Principle 2: Legal requirements laid down in the feed hygiene regulation shall be strictly implemented to prevent feed from being a carrier of pathogens

This means:

- Purchase of ingredients from clearly identified sources (certification against feed safety systems is a plus);
- Risk assessment identifying risk factors for the presence of pathogens, taking into account:
 - o The prevalence of specific zoonoses in the country/region of origin of the goods;
 - o The susceptibility of the feed ingredient to be exposed to and carry the pathogen;
 - o Existence of mitigation procedure (e.g. treatment eliminating the pathogen);
 - o The virulence of the pathogen and its relevance for human health.
- Operational HACCP plan;
- Effective monitoring plan (subject to availability of methods of analysis to detect the presence of the pathogenic agent);
- Contingency measures in case of detection of contaminated feed ingredient;

Chapter 2 provides recommendations and references documents for proper implementation of feed hygiene requirements



Principle 3: Measures should be in place to prevent introduction of pathogens in the feed mill other than via feed ingredients.

These measures should:

- Aim at Controlling pest/rodents and keeping the plants and surrounding clean;
- Establish hygiene requirements for staff and visitors and their vehicles;
- Establish hygiene requirements for delivery trucks.

Chapter 3 provides additional recommendations.

Principle 4: Any transport and delivery of feed / farm visits should follow-clear rules aimed at controlling the introduction of pathogens in the farm and dissemination of pathogens from farm to farm.

This supposes:

- Restricting visits of barns by company employees;
- Complying with on-farm biosecurity plan where exists;
- Avoiding trucks or drivers in the clean zone of the farm;
- Using unloading equipment of the farm as far as possible;
- Establishing rules for the use of protection clothes, cleaning and disinfection of vehicles, taking back goods from the farm (pellets, surplus of feed, etc.); these rules should be adapted to the action levels as defined in chapter 1;
- Keeping detailed diary of deliveries to each individual farm.

Chapter 4 provides recommendations on feed transport and deliveries of feed, cleaning of vehicles and farm visits.

Annex: List of useful references

Chapter 1

General recommendations for drafting a biosecurity plan

It is recommended that a biosafety plan is established by each individual compound feed manufacturer. This biosafety plan must be consistent with official European and national disease control measures, taking into account the zoning in case a zoonose or disease transfer risk is present in wild animals and/or domestic animals.

It is recommended to develop the biosecurity plan as an extension of the Feed Safety Management System established to control feed safety in accordance with feed hygiene and follow a similar approach in terms of governance, risk analysis, training, maintenance etc, in particular:

- The Management (from CEO to the operational management) must be committed to the implementation of the biosecurity plan, which has to be documented.
- The Management must:
 - Ensure that biosecurity is part of the business goals of the company;
 - Define the scope of the biosecurity plan by clearly identifying production sites, operations and staff concerned;
 - Review the biosecurity plan at defined intervals of not more than 12 months and when significant changes to plant or products occur, to ensure its suitability and effectiveness of (changes and improvements).
- An organisation chart should be established and kept permanently updated. The chart should specify the respective staff responsibilities in relation to biosecurity.
- It is recommended that the Feed Safety Manager is also responsible for the management of the biosecurity plan.
- All staff should be suitably experienced, trained and qualified and must be regularly informed about issues with an impact on biosecurity, in particular when the alert level is raised as a consequence of emergence of an outbreak close to the plant or its customers and requires implementation of additional procedures.
- Expertise in management of microbiological risks should be sought. If not available “in-house”, this expertise should be outsourced.
- Education tools (infographics) and signage should be used to secure adequate transmission of instructions.

Practical guidance on governance of a feed safety management system can be found in Guides to Good Hygiene Practice, in particular in the European Feed Manufacturers Guide (EFMC) and national Codes or Feed Safety Assurance Schemes (see Annex).

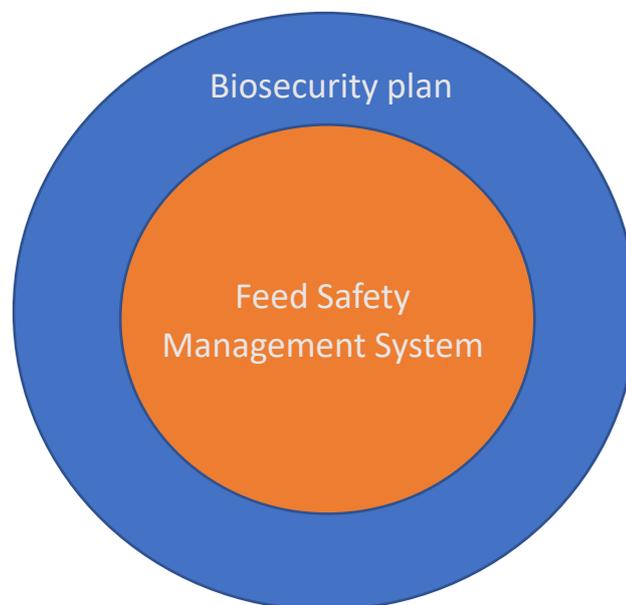
It is recommended that the biosecurity plan is designed in two parts:

- A permanent set of rules to be implemented irrespective of the existence of an outbreak in or close to areas where the plant and/or delivered farms are located;
- Additional set of rules to be implemented in case the feed mill and /or the delivered farms are located in a regulated zone in relation to an outbreak of relevance for the feed mill (i.e. concerning species present in farms where the company delivers feed).

It is advised to define **different set of rules corresponding to different alert levels and depending on the zone** the feed mill and delivered farms are located in. It is recommended to define at least three alert levels.

The following parameters should be taken into account when defining the alert levels:

- Whether the pathogen is prevalent in the country/region where the feed mills and/or delivered farms are located or in neighbouring country/region;
- Whether the feed mill/delivered farms are located in regulated zones (protection or surveillance zones) as defined by national law;
- Whether the pathogens affects farms or concerns wild animals only;
- The virulence of the pathogen;
- Whether the feed mill produces feed for species sensitive to the pathogen and whether it delivers feed to farms where animals sensitive to the disease are kept.



Chapter 2

Feed hygiene provisions relevant for biosecurity and risk assessment methodology

The EU Feed Hygiene Regulation (EC) No 1831/2005 lays down requirements for the establishment by feed business operators other than primary producers of feed of a feed safety management system meant in particular to control chemical, microbiological (including virus) and physical hazards contamination of feed.

The key features are:

- Obligation for Feed Business operators exerting activities other than primary production of feed to implement HACCP plan (article 6);
- Specific requirements for the production, storage, transport and delivery of feed “Annex II of Feed Hygiene Regulation R1831/2005.

Sector guides to good hygiene practice exist at European and national level to help feed business operators implementing these requirements. This includes in particular the implementation of Prerequisites Procedures regarding the design of buildings, personnel hygiene, cleaning of equipment, pest management, etc., as well as the establishment of a risk based management system, involving the design of a risk based monitoring plan. As far as the compound feed industry is concerned, the European Feed Manufacturers Guide (EFMC) was endorsed as the European reference by EU authorities and provides detailed specifications concerning in particular the implementation of HACCP. These specifications have also been integrated in a number of national and international Guides to good practice or Feed Safety Assurance Schemes (see Annex).

Peer reviewed scientific literature regarding the management of the microbiological safety of feed is extensive for certain pathogens like Salmonella but more limited concerning e. g. viruses. It is recommended for the purpose of risk ranking to take into account:

- The origin of the feed ingredients, in particular whether it originates from a region/country with active pathogenic disease transmission and whether the supplier adheres to a feed safety assurance scheme;
- The exposure of the feed ingredients to potential contamination;
- The extent to which the feed ingredients were subject to risk mitigation measures such as quarantine, heat or chemical treatment, etc.

Chapter 3

Specific additional biosecurity measures at feed mill

The Feed Hygiene Regulation establishes a number of biosecurity requirements meant to minimise the risk of intake of feed-borne pathogens. It also includes some requirements related to minimizing the risk of introduction of pathogens in the plant site via other carriers than feed.

When designing prerequisites programmes, it is recommended to bring attention to the following points:

Staff / visitors / truck driver:

- Dedicated parking areas signed for visitors and staff;
- Check-in for visitors and contractors and record of arrival / departure time; Procedures against unwanted visitors;
- A personnel hygiene policy to reduce the likelihood of spreading animal disease (e.g. cleanliness of footwear of employees and visitors / truck drivers, wash stations for hands and boots at entry points);
- Driver movement and cleaning protocols, with documented training for personnel when moving from the receiving area to other areas within the feed plant;
- Signage of restricted areas for personnel;
- Training of employees to comply with biosecurity plan and to recognize and report suspicious individuals or abnormal activities, security breaches, and suspicious ingredients or devices.

Reception pit:

- Cover over the dump pit, removed only when the truck is ready to unload;
- Cleanliness of reception area (no accumulation of debris, dust and feed); spilled ingredients or debris not swept into the pit ;
- Reception pit secured against pest or water entry;

Vehicles:

- Delivery vehicles entering into the facility only if there are no visible contamination hazards (e.g. mud or manure, or previous product residues); this includes farmer owned vehicles that are picking up feed or delivering grain;
- Training of employees on proper inspection techniques and how to determine when delivery vehicles and ingredients should be rejected; this may involve questions to transporter on whether the truck is also used to haul feed or feed ingredients from or onto farms.

Returns:

- Surplus feed, used skids, pallets, totes or bags that have been stored on farm should preferably not be brought back into the feed mill; an inspection / risk assessment as appropriate should be required before accepting any such return.





In case of high alert levels as defined along the recommendation in chapter 1, in particular in case of prevalence of a virulent pathogenic agent in the region where the feed mill is based and/or where the feed ingredients are sourced from such region, the following additional precautions may be considered:

- Disinfection of tyres and wheel arches of trucks from contaminated countries/regions before entering the feed mill area;
- Disinfection performed using biocides fit for purpose and in accordance with national provisions related to environment protection;
- Protection of feed mill area from intrusion of wild animals susceptible of carrying the pathogen (e.g. fences against wild boars);
- Hunters and other people with an activity in forests should change clothes and footwear and should not bring any hunting device in the plant or on farms;
- In case of pathogens virulent for human, monitoring staff for signs of symptoms of relevant disease.

Chapter 4

Transport and deliveries of feed / farm visits

When designing prerequisites programmes, it is recommended to bring attention to the following points:

Cleaning / disinfection of vehicles

- Defining a cleaning and disinfection plan for vehicles (including feed blower pipe) used to deliver feed to farms based on a risk analysis taking into account:
 - The type of species present on the delivery farms
 - The type of livestock production system (indoor, outdoor)
 - Season (migration period, weather impacting on truck cleanness)
- Type of cleaning (simple cleaning or disinfection) and frequency.
- Documentation and record of cleaning / disinfection operations;
- Biocides fit for purpose and used in accordance with national provisions related to environment protection. It may be performed in specialized disinfection stations or via disinfection mat as appropriate.

Transport

- The journey is carried out in accordance with the applicable legislation (e.g. direct, 1:1, maximum one risk operation per journey as appropriate) ;
- Health challenged herd or flock delivered last if multiple farm sites are visited the same day;
- Adequate equipment in trucks, in particular cleaning/disinfection equipment, protection equipment for the driver (smooth sole boots, disposable overalls, gloves and overshoes, dust bags, etc.).

Delivery

- The truck driver shall comply, where appropriate, with the biosecurity plan defined by the farmer, in particular as regards the driving plan and input/output management plan; trucks should never operate or halt in areas where animals are kept;
- Detailed register of deliveries (name of driver, identity of farms, location in protection/surveillance zones, arrival and departure time, type of feed delivered, cleaning operation performed);
- Ideally, the farm will own its own feed blower pipe which is designated to that farm and remains on farm ;
- Used disposable protection equipment and dust bags should be left on the farm in designated containers, where available.

Personnel

- The truck driver should stay away from areas where animals are kept;
- Visits of barns by company employees shall be reduce to the minimum and comply at least with the biosecurity plan of the farm.
- People should not be allowed to enter into a livestock holding sensitive to a pathogen within a predefined period of time following contacts with feral or domestic animals carrying potentially this pathogen (e.g. people should not be allowed to enter into a pig farm within the 48 hours following contacts with wild boars or domestic pigs potentially contaminated with ASFv).



Annex

Useful references

Sources of information as regards status of certain countries with regards to prevalence of different diseases:

- OIE: The OIE requires notification of certain diseases and holds a database with country disease status for a number of viruses (<http://www.oie.int/animal-health-in-the-world/official-disease-status/>). This does not include Avian Influenza and African Swine Fever.
- DG SANTE: DG SANTE website provides also information on prevalence of certain viruses in the EU and certain third countries: https://ec.europa.eu/food/animals/animal-diseases/control-measures_en

EFSA scientific opinions on:

- [Microbiological risk assessment in feedingstuffs for food-producing animals](#)
- the risk of transmission of ASF through several matrices, including feed (to be published in July 2019).

List of guidance for biosecurity measures linked to feed manufacturing, feed deliveries and farm visits in:

- Belgium: [biosafety protocol](#) for African swine fever (Belgian Feed Association) – EN/FR/NL
- France: [Biosecrilité](#) dans le transport des aliments (SNIA/Coop de France Nutrition Animale / AFCA-CIAL) - FR
- UK: [Movements on to and off livestock farms](#) (Agricultural Industries Confederation) - EN
- The Netherlands: [Hygiëneprotocol](#) voor het reinigen en ontsmetten van transportmiddelen voor het vervoer van diervoeder / Hygiëneprotocol vervoer diervoeders (Federatie Nederlandse Diervoederketen / Transport en Logistiek Nederland) – NL
- The Netherlands: [Hygiëneprotocol](#) bezoekers pluimveebedrijven (AviNed) - NL
- Denmark: [Code of Practice](#) And General Operating Standards For Poultry Feed Processing and Transportation (Annex 11) (Danish Poultry Council / Danish Egg Association / Danish Poultry Meat Association / DAKOFO) – DK)
- Canada: [National Biosecurity Guide](#) for Livestock and Poultry Feed Producers (Animal Nutrition Association of Canada) – EN
- USA: [Guidance for developing biosecurity practice](#) for feed and ingredients manufacturing (American Feed Industry Association) - EN

European and national guides to good hygiene practice for the manufacturer of premixtures and compound feed

- European Feed Manufacturers' Guide ([EFMC](#))
- National guides to good hygiene practice (see links in annex 3 of [EFMC](#))