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AFMA TRANSPORT PROTOCOL

AUDIT PROCEDURES

INTRODUCTION

The AFMA Board of Directors has mandated Afri Compliance as an independent service provider to audit transporters of raw materials in terms of their compliance to the AFMA Transport Protocol.

Afri Compliance has subsequently, in conjunction with AFMA, formulated the guidelines according to which the audit will be done.

The AFMA Transport Protocol contains the minimum requirements for an effective transporter to ensure the safe feed safe food chain, including procedures to ensure good corporate governance.

The target group for this service is all road transporters transporting raw materials for the animal feed manufacturing industry, either directly to feed manufacturing facilities or the storage facilities for later transport to animal feeds manufacturing facilities.

The monitoring / auditing of this system will be done by Afri Compliance to include upstream companies such as companies transporting to silos and other bulk storage facilities that receive raw materials by road for later use in the animal feed industry.

PROCEDURE TO BE DEVELOPED BY THE TRANSPORT SERVICE PROVIDER

All procedures must be documented and all these documents will be part of the transporters “GMP TRANSPORT PROTOCOL - FILE”. The procedure will indicate the following information:

1.1 Step by step work instruction.
1.2 Reference of worksheets to be used and completed.
1.3 Frequency on which procedures need to be carried out.
1.4 Responsibilities of employees or drivers.
1.5 Products and equipment to be used.
1.6 Standards which must be defined.
1.7 Preventative measures and corrective action procedures if a non-conformance is found.

PROCEDURES TO AVOID CONTAMINATION OF RAW MATERIALS OR FEED INGREDIENTS IF UNDESIRABLE SUBSTANCES HAVE BEEN TRANSPORTED

Procedures to be followed based on the guidelines below:

- For bulk transport, the previous loads must be recorded by the driver in a consignment note held in the vehicle and a cleaning procedure must be established, complying with the requirements and supplementary standards for cleaning and disinfection of the vehicles
- The general requirement is that the load compartment must be clean and dry, free of residues and odours from previous loads. The driver must visually check this before each consignment of raw materials.
- The cleaning and disinfection actions for each bulk load must be noted and initialled in the consignment note by the driver and the responsible person at the cleaning facility. The result of the cleaning and disinfection actions must be checked visually and recorded in the consignment note, along with the preceding loads and the cleaning and disinfection actions.

PROCEDURES TO AVOID LOAD CONTAMINATION

- Transportation shall be such that basic quality can be maintained with regard to hygiene.

  This must be ensured particularly when types of goods other than raw materials, finished feed and premixes, with different microbiological quality are transported. A procedure must be established in which it is stated how this will be controlled.
- The outside of the truck, including the chassis, must be free of visible traces of previous cargoes, prior to the transport of raw materials, finished feed and premixes.
- Bulk compartments which have held contaminated consignments (contaminated with undesirable substances/products and/or pathogenic organisms) must be cleaned in such a way that it is not possible for subsequent consignment to become contaminated.

  A procedure for this must be established for this eventuality and must be available.

- After a load has been loaded, it must be secured from outside influences like rain and bird droppings.
- Loads must be covered by a clean tarpaulin and tied down if not transported in a taut liner type vehicle or a closed container.
- Ensure that tarpaulins and/or containers are 100% effective in keeping out potential contaminants. Tarpaulins must not have holes or tears in them and containers must not be damaged in any way.

PROCEDURES FOR CLEANING AND DISINFECTING OF VEHICLES PRIOR TO LOADING

- Before loading bulk compartments, the product category of preceding loads must be determined. There must be compliance with requirements for cleaning and disinfection as well as sequence of consignments.

- Four main categories of preceding loads are distinguished:
  - **PROHIBITED –** Very high risk material (Prohibited for transport of animal feed industry).
  - **HIGH RISK** – Microbiologically contaminated material.
  - **MEDIUM RISK** – Material with physical and or chemical risk.
  - **LOW RISK** – Neutral materials

- Transporters must be able to demonstrate that no very high risk loads from category 1 (**PROHIBITED**) have been transported in a compartment in the past. Following the transport of a prohibited load, no raw materials and premixes may be transported.

- Disinfection must always take place following the transportation of products from category 2 (**HIGH RISK**), prior to the next consignments.

- In other cases, it must be verified whether, since the previous wet cleaning, products from category 3 (**MEDIUM RISK**) have been transported. If this is the case, cleaning with water must take place.

- Prior to every animal feed material consignment, a visual check must be carried out as to whether the load compartment is clean, which means completely emptied and free of material residue and odour from previous loads, and dry or dried to ensure that the next load will be dry.

- Cleaning and disinfection must take place as per one of the following procedures:
  - Dry Cleaning **(CLEANING REGIME A)**

    In the case of transport of dry "neutral" (**LOW RISK**) substances only, dry cleaning may be sufficient and beneficial both practically and microbiologically. Dry cleaning involves the vehicle being cleaned after unloading by vacuum, blowing or sweeping. Vacuuming is preferred as it does not spread the dirt. Places that are difficult to reach should, if necessary, be brushed or otherwise cleaned by hand. If the result is unsatisfactory after dry cleaning, wet cleaning will have to follow.

  - Cleaning with water **(CLEANING REGIME B)**

    Cleaning with water is necessary after transport of, for instance, damp or sticky substances or possible harmful chemicals. With open vehicles it is best to use a high pressure hose, with a flat nozzle with at least 25 bar pressure, or higher of necessary. If chemicals need to be removed (e.g. chemical fertilizers) warm water should be used at a temperature of at least 60°C, to dissolve the chemicals more easily. Areas that are difficult to reach should, if necessary be cleaned separately with additional means such as brushing.

    It is important that the water is thoroughly drained. Depending on the nature of the next load, drying can take place either by leaving the vehicle to dry with adequate ventilation or by a hot air blower.

    The general cleaning regime is as follows:

    - Remove as much residues from the previous load as possible by dry cleaning.

- Pre-rinse with cold water, or warm water if necessary, and clean difficult places by hand.
- High pressure cleaning with warm water (at least 60°C).
- Dry by ventilation or hot air blower.

- Cleaning with water and cleaning agent **(CLEANING REGIME C)**

  For loads containing protein or grease, it is necessary to use a cleaning agent. High water temperature is needed. The maximum temperature should not exceed temperatures above 60°C as it will cause protein to coagulate and therefore stick to the surfaces. To facilitate the removal of protein and greases, it is advisable to use a medium to strong alkaline cleaning agent, using the dosage prescribed by the manufacturer. In open systems, it is best to use a foaming degreasing agent. In the case of tank cleaning with spray balls, no foaming agent may be used. It is better to use a Cleaning in Place (CIP) agent for spray balls at a high temperature. In specific cases, such as the removal of calcareous substances, an acid cleaning is preferable.

  The general cleaning regime is as follows:

  - Remove as much residues from the previous load as possible by dry cleaning.
  - Pre-rinse with warm water (maximum 60°C) and clean difficult places by hand.
  - Apply foam or gel cleaning agent in the case of open vehicles or rinse with CIP cleaning agent at 80°C in case of tanker cleaning.
  - Rinse with warm water approximately 60°C
  - If necessary, dry by ventilation or hot air blower.

- Disinfection (**CLEANING REGIME D**)
  - If disinfection is necessary form a microbiological point of view, this can, in most cases, only be carried out effectively after cleaning with water and a cleaning agent as indicated in cleaning regime C. The dry form of disinfection may only be applied if its efficacy has been

established. Only SABS approved disinfectants may be used in the indicated dosage.

- For feed material transport vehicles, use of a disinfectant approved for the food industry is the only alternative

- Disinfection immediately or after one of the previous cleaning regimes (A, B or C). Disinfection is only necessary of preceding loads are microbiologically unacceptable (detectable signs of decay), or if it is known that they carry micro-organisms that cause disease, such as salmonella.

PROCEDURES FOR PRE-LOADING INSPECTION OF VEHICLES

After each cleaning regime, a visual inspection must be carried out. The result of this inspection must be recorded in the logbook, together with the record of the transported loads and the applied intervening cleaning regimes, with the cleaning and disinfectants used.

LOGGING OF DATA

A business undertaking the bulk transport of raw materials, finished feed and premixes must have the necessary approved documents in place to show that the cleaning between successive bulk consignments has been successful.

The document shall be in triplicate. One shall remain with the business undertaking the transport, one copy with the supplier of the raw materials, finished feed and premixes and one copy with the client receiving the raw materials, finished feed and premixes.

DRIVER AND LOADER HYGIENE AND TRAINING

Drivers and loaders must be trained in order for them to understand the basic principles of bio security, biological contamination and personal hygiene. Records of training must be kept and may be required for audit purposes.

VEHCILE FITNESS

The transport company will ensure that the vehicles are roadworthy at all times and that a competency certificate is available.

PROCEDURE FOR INSPECTION AND TESTING

- **INSPECTION AFTER EACH CLEANING**

After each cleaning regime a visual inspection must be carried out. The result of this inspection must be recorded in the logbook, together with the record of the transported loads and the applied intervening cleaning regimes, including the cleaning and disinfectants used,

A procedure for a visual inspection must be drawn up. Areas for inspection must include at least:

- Footboards, pedals, boots
- Grain chute/discharge openings
- Rubbers around the doors
- Under side and upper side of the tarpaulin
- Load compartment corners
- Mudguards and chassis
- Seams of walking floor vehicles
- Tailgate and flaps of walking floor vehicles

- **INSPECTION AFTER ANIMAL MEAL HAS BEEN TRANSPORTED**

After cleaning loads containing animal meal, an inspection must be carried out in order to check for residues of components of animal origin in animal feed according to the microscopic screening methods laid down in the EG Guideline. Furthermore, additional checks must be carried out in order to assess the effectiveness of the cleaning and/or disinfection method used.

- **INSPECTION AFTER ANY BIOLOGICAL PRODUCT HAS BEEN TRANSPORTED**

Adenosine Tri Phosphate (ATP) measurements can be used to assess cleaning. ATP is present in all animal and vegetable cells and can thus be used as an indicator for the extent of biological contamination left on surfaces.

In order to verify the effectiveness of a particular disinfection technique in use, agar stamps can be used, which can determine the numbers of surviving micro-organisms.

For checks on chemical residues and pesticides, more advanced measurements methods, such as HPLC and Mass Spectrometry (MS) can be used, with a frequency determined in conjunction with the companies receiving the feed raw material.