

# Department of Agriculture, Forestry and Fisheries

## National Directorate: Animal Health

Notice No. VPN/.../2009/02

To: STATE VETERINARY OFFICERS

**SUBJECT: GUIDELINES FOR AN EFFECTIVE TRACEABILITY SYSTEM FOR THE USE OF MAMMALIAN BLOOD PRODUCTS FROM SOUTH AFRICAN STERILISATION PLANTS THAT IS DESTINED FOR FEEDING OF NON-RUMINANT ANIMALS**

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# PART 1

## GUIDELINES RELATING TO THE USE OF MAMMALIAN BLOOD MEAL IN ANIMAL FEEDS

### **PURPOSE**

The main objective of the guidelines is to provide for a procedure to obtain the relevant exemptions under the Animal Diseases Act, 198 (Act No. 35 of 1984) and the Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies act, 1947 (Act No. 36 of 1947).

These guidelines are drafted for the purposes of:

1. Providing evidence that the mammalian blood products distributed for non-ruminant feeds are not posing any risk of introducing harmful pathogens (in particular BSE prions) into the feed and food chain.
2. Providing for independent inspection and auditing mechanisms and providing easy access to data in the event of an audit being carried out by an inspection team from an independent auditor, the Department of Agriculture, Forestry and Fisheries (DFFA) or from overseas (EC) delegations.
3. The data and supporting documents shall supply evidence that adequate quality and procedural control systems are in place in order to confirm compliance.
4. Providing evidence that the raw material (blood) was collected in an acceptable manner to prevent contamination with nervous tissue.
5. Providing evidence that all efforts were made to prevent contamination of the finished product.
6. Provide evidence that the final product is distributed only for the feeding on non-ruminant animals.
7. Enabling the inspectors to trace back and track forward to confirm compliance with the traceability system.

## PART II

### GUIDELINES RELATING TO THE USE OF MAMMALIAN BLOOD MEAL IN ANIMAL FEEDS

#### **APPLICABLE ACTS**

- Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No.36 of 1947)
- Animal Diseases Act, 1984 (Act No.35 of 1984)
- Meat Safety Act, 2000 (Act No.40 of 2000)

#### **Other Documentation**

- TSE Regulation 999/01 of the EC
- Animal By-Products Regulation No 1774/02 of the EC
- Commission Regulation on blood No 1292/2005 of the EC
- OIE: Terrestrial Animal Health Code Chapter 2.3.13 of 2007

## PART III

### GUIDELINES RELATING TO THE USE OF MAMMALIAN BLOOD MEAL IN ANIMAL FEEDS

#### **KEY ISSUES PERTAINING TO TRACEABILITY:**

The following key issues and procedures form the basis of achieving compliancy, and could be used during Traceability audits. The responsible persons for each activity shall be identified to ensure that the duties are carried out efficiently and with full accountability.

#### **1. ORIGIN OF RAW MATERIALS - ABATTOIRS**

Raw material shall be sourced only from approved Abattoirs that are officially registered with the Department of Agriculture, Forestry and Fisheries. Approved abattoirs shall comply with the requirements for the Meat Safety Act 40 of 2000.

**The registration and approval status of the establishments/abattoir ensure that:**

- 1.1 Slaughter and Hygiene Guidelines forming part of the approval status are instituted and strictly adhered to.
- 1.2 All animals presented for slaughter are from farms that are not under veterinary restriction for animal health reasons.
- 1.3 All animals presented for slaughter will undergo ante-mortem inspection and are found healthy:
  - 1.3.1 In the case of a physically injured animal, Downer cow syndrome, an animal showing nervous symptoms, or suspected diseased animals; these animals will be isolated and examined by a competent person (veterinarian) and a decision made regarding the outcome, e.g. slaughter for human consumption (at the end of the day's slaughter) or condemnation and destruction;
  - 1.3.2 brain samples will be taken and submitted for examination (BSE);
  - 1.3.3 dead-on-arrival animals are destroyed, after collection of brain samples; **Blood from these dead-on-arrival animals is not collected for use, but discarded and destroyed;** and
  - 1.3.5 normal procedures pertaining to destruction and hygienic cleaning of the "quarantine area" and handling and disposal of waste water/material are used as stipulated in the Meat Hygiene Regulations; This ensures that the blood collected for further processing is not contaminated with "un-safe" blood.
- 1.4 The correct slaughter, hygiene, processing procedures, etc in terms of the Meat safety Act, 2000 are followed.
- 1.5 Proper recording and numbering of all received and slaughtered animals shall identify the place of origin of the animal and the carcass, to trace the carcass to the farm of origin, prior to slaughter.

- 1.6 Dedicated slaughter lines are in place for different species in the case of a multi-species abattoir; but blood collected at these abattoirs will assume ruminant identity.
- 1.7 Documents to be presented during an audit:
  - 1.7.1 Approval/registration certificate of the abattoir, or the approval number (ZA number) which could be verified by the Department of Agriculture, Forestry and Fisheries.
  - 1.7.2 A recording system whereby the carcasses can be traced back to the farm of origin, to verify health status of the area.
  - 1.7.3 Slaughter numbers per day, which will enable the inspector to confirm the volume of blood produced per day. This figure can be used to correlate and verify that the volume of blood received at the processing facility is within the production limits of the abattoir; this will also confirm to the inspector that blood received at the processing plant were from approved facilities only.
  - 1.7.4 Delivery Note from the dispatching abattoir for blood.

**A. Stunning Method**

OIE recommendations Chapter 2.3.13.1, Article 2.3.13.1.1.h states as follows:

“When authorizing import or transit of the following *commodities* and any products made from these *commodities* and containing no other tissues from cattle, *Veterinary Authorities* should not require any *BSE* related conditions, regardless of the *BSE* risk status of the cattle population of the *exporting country, zone or compartment*.

Article 2.3.13.1.1.h - Blood and blood by-products, from cattle which were not subjected to a stunning process, prior to slaughter, with a device injecting compressed air or gas into the cranial cavity, or to a pithing process.”

- A.1 The stunning method used at all abattoirs in South Africa is the captive bolt pistol. The bolt is propelled by compressed air or an explosive device. In the event of leakage of air in device used in SA, air is escaping past the plunger and the bolt will not operate. Any device which compels air into the brain is not used in South Africa and no pithing takes place either.
- A.2 Confirmatory evidence pertaining to the stunning method is required during an inspection.

## **B. Blood Collection**

After stunning, the blood vessels (and oesophagus and trachea) are severed (from ear to ear) but not the spinal cord and bleeding takes place in the bleeding area.

- B.1 Blood is collected in a dedicated trough, and accumulated in a tank. It is then pneumatically conveyed or pumped into a processing system (in case of a rendering facility located at the abattoir), or into a sealed, leak-proof vehicle, transporting it to a rendering plant.
- B.2. Blood is kept at ambient temperature and delivered at completion of the slaughter session.
- B.3. Blood from animals described in par 1.3.3 which were not found fit for slaughter will not be used for further processing.
- B.4. Documents to be presented: Delivery note from the abattoir and confirmation of receipt/compliance certificate at the rendering facility.

**NOTE:** Average raw blood yield from:

Adult cow: 14kg

Sheep & Goat: 1.3kg

Pig: 3kg

Final dried product is 18 – 20% of the raw blood

## **C. Transport to Sterilization Plant**

Transport from the abattoir to the rendering plant takes place in sealed, leak-proof vehicles at ambient temperature upon completion of the slaughter session. The consignment is delivered to the Rendering plant under cover of a Delivery Note from the Abattoir.

Refer to Annexure 1

## **2. STERILISATION / RENDERING PLANT**

### **A. Processing and Production**

- A.1 The Rendering plant shall be registered and approved in terms of the Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act 36 of 1947.
- A.2 The process for rendering of blood shall be approved by the Registrar of the Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act 36 of 1947.

The following different methods could be used in the rendering of blood (Coagulation takes place upon exposure to heat), viz:

- i) Batch dryer: Fed into cooker, heated to 120° - 130°C.  
Final product: meal/powder: < 10% moisture.
- ii) Disk dryer: Fed through a system of heated disks. Processed at 130° - 140°C.

Final product: meal/powder: <10% moisture.

- iii) Ring dryer: Air (120° C) is circulated through a ring via suction, followed by coagulated blood.

Final product: meal/powder: <10% moisture.

- iv) Spray dryer (flash dry – high temperature, short period): Blood is atomized and sprayed into a heated chamber, by which moisture is driven off and solids are collected in the form of meal/powder. Temperature exposure: 120°C.

Final product: meal/powder: <10% moisture.

- v) Sun dried. Not followed at rendering plants.

- A.3 The structures, equipment, procedures, recording devices, control measures, etc, installed at the rendering plant, shall allow for efficient production of the final product, and also ensure prevention of cross flow and contamination of the final product.
- A.4 The final product shall be bagged in a secure area where contamination is prevented; and be labeled to stipulate the type of product, the species of animal derived from, the date of production, batch number and manufacturing plant. Samples shall be taken at this point by DAFF to demonstrate regulatory compliance and effective procedures.
- A.5 A recording system whereby the final product, as per label information, shall be in place to trace and confirm the complete procedure, process and origin (of farm/abattoir/rendering plant).
- A.6 Storage of the final product shall be in a controlled area to avoid contamination and spoilage.

Refer to Annexures 2(a) & 2(b)

## **B. Placing on the market of final product (Blood meal):**

- B.1 All products shall be registered in terms of Act 36/47.
- B.2 Adequate recording systems shall be in place at the abattoir, rendering plant and distributor to ensure that the purchaser is identified and traceable, in the event of recall.
- B.3 Documents to be made available during inspection:
  - i) Raw material receipts – to be correlated with the production figures of the final products produced.
  - ii) Sales Register.
  - iii) Delivery Notes.
- B.4 Document numbering:
  - i) All documents shall have sequential numbering to allow documentary evidence to be linked in order to establish full traceability of the final product through a complete road map, to the origin.
  - ii) All documents shall be kept for a minimum period of 3 years

Refer to Annexure 2 C

## PART IV

### GUIDELINES RELATING TO THE USE OF MAMMALIAN BLOOD MEAL IN ANIMAL FEEDS

#### FEED MANUFACTURERS

The following records should be maintained by the Feed Manufacturer when using Mammalian Blood meal in the manufacture of animal feed for non-ruminant animals:

1. Record of product receipts plus storage thereof if applicable:

- Source of product
- When / date received
- Quantity of product
- Product specifications (bovine, porcine, etc)
- Additional information/state of product
- Records of transport

Refer to Annexure 3 (a)

2. Record of processing:

- All raw materials must be registered with Act 36 of 1947
- Dedicated facilities / dedicated lines for non-ruminant animal feeds
- Registration details of raw materials
- Registration details of final product and custom mixers in terms of Act 36 of 1947
- Daily records of raw materials used and type of final product for which it was used, such that it can be reconciled with receipt and storage information
- Quantities of final product manufactured and inclusion levels of raw material
- Date of production
- Batch number of final product
- Packaging details (bags or bulk)
- Details of storage
- Transport of final product in bulk by dedicated trucks

Refer to Annexure 3 (b)

3. Labeling:

- Product name, class registration number, product composition, mass, warning **(Should not be fed to ruminant animals)**, feeding recommendations, registration holder details, postal address, telephone, batch number, expiry date; and date of manufacture.

4. Sales records:

The sales records shall capture the following information:

- Details of the purchaser (Name, physical address, and other contact details, purpose of use).
- Product details (type of product, packaging type, quantities ordered and date, quantities delivered and date).
- Mode of transport of the product and transport details.

Refer to Annexure 3 (c) & (d)