

FAN MEAT SCHEME STANDARDS FOR EXPORT ABATTOIRS



1. FOREWORD

The Farm Assured Namibian Meat (FAN Meat) Scheme was developed in a collaborative effort between the Meat Board of Namibia (MBN) and the Directorate of Veterinary Services (DVS) following and Industry decision for the safeguarding of Namibian meat markets.

The need for livestock traceability and farm assurance in Namibia arose from an outbreak of Bovine Spongiform Encephalopathy (BSE) or Mad Cow Disease in humans in the United Kingdom from 1986 to 2001. The Namibian Livestock and Meat Industry and DVS acted pre-emptively through the development of an extensive livestock identification and traceability system (NamLITS) which is utilized by the FAN Meat scheme to provide assurance regarding the safety, wholesomeness and quality of Namibian meat.

The FAN Meat Scheme Logo was published on 29 September 1999, Government Notice number 195, Gazette number 2193. The cabinet during the same sitting pronounced the FAN Meat Scheme as a National Scheme. The Meat Board is the mandated administrator of the FAN Meat Scheme.

The FAN Meat Scheme was developed to include all Namibians and the rules and standards of the scheme are based on National Legislation combined with Good Agricultural Practice and Animal Welfare principles.

The FAN Meat value chain includes Producers at farm level, and non-producers, which are: Livestock Feed Manufacturers, Agents and auctioneers, Transporters and Export Abattoirs (and Feedlots in the near future).

The Farm Assured Namibian Meat Scheme Logo symbolizes assurance for safety, wholesomeness, quality and traceability of Namibian export meat. Meat produced under this scheme, is:

- Naturally produced in extensive free range conditions OR grain fed;
- Hormone free;
- Antibiotic residue free;
- Carries Negligible risk for Mad Cow Disease;
- Originates from animals which were humanely treated; and
- Traceable from abattoir to the farm of origin.

This document sets out the standards for export abattoirs under the FAN Meat scheme.

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3. DEFINITIONS

FAN MEAT FREE RANGE / PASTURE RAISED Means all livestock are raised under extensive conditions with continuous and unrestricted access to pastures that are suitable as fodder for their entire life. Short term confinement is restricted to times of inclement weather, veterinary treatment or giving birth. Feed supplements can be given to ensure all nutritional and production needs are met. Concentrates may be given at a maximum of 1% of bodyweight to prevent substitution of pasture.

Meat derived from free range / pasture raised livestock have a specific taste and colour expectation and have positive health benefits in terms of low fat content, higher protein content, a higher Omega 3 polyunsaturated fatty acid content and carries a positive image in terms of animal welfare and environmental impact.

In the case of drought conditions and where an adequate amount or quality natural pasture is not available, suitable fodder and feed supplements should be provided to ensure all nutritional and production needs are met. A full feed containing concentrates at a maximum of 1% bodyweight may be given. This includes the feeding of "boskos" as a complete feed, where bush biomass should constitute the main ingredient of the feed and added concentrates within the limits of this standard.

A period of rounding off of livestock prior to slaughter in kraals without unrestricted access to pastures constitutes feedlotting and will disqualify livestock as free range / pasture raised. Feeding concentrates in excess of 1% bodyweight during rounding off, even with unrestricted access to pasture will be regarded as substitution of pasture, and will disqualify livestock as free range / pasture raised.

FAN MEAT GRAIN FED Means livestock are kept in an area for fattening and are fed a nutritionally balanced ration of a high energy content, meaning concentrates are fed in excess of 1% bodyweight, for a minimum period of 40 days.

Meat derived from grain fed livestock have a specific taste and colour expectation, with higher levels of intramuscular fat.

In order to be marketable as **FAN MEAT GRAIN FED** the area in which livestock are kept for fattening should be approved by FAN Meat. Livestock raised under extensive conditions with continuous and unrestricted access to pasture, but receiving feed containing concentrates in excess of 1% bodyweight will also qualify as FAN Meat Grain Fed.

HORMONE FREE Means free from any growth promoter as defined and listed as a prohibited or controlled substance in the Prevention of Undesirable Residue in Meat Act (Act 21 of 1991) and its Regulations, notices and amendments. Livestock never received any remedy in any form for the purpose of growth or fattening. In the case of controlled substances protocols for application as well as prescribed withdrawal periods were adhered to.

Further, prohibited substances in food producing animals as per the Prevention of Undesirable Residue in Meat Act includes the active ingredients phenylbutazone, clenbutarol and chloramphenicol in any form.

ANTIBIOTIC RESIDUE FREE Means antibiotics (antimicrobials) are only used when prescribed by a veterinarian registered to practice in Namibia and only in accordance with veterinarian and manufacturer instructions. Antibiotics are not used preventatively or for the purposes of growth or fattening. Livestock are only presented for slaughter after the prescribed withdrawal period for meat.

HUMANE TREATMENT Means livestock are reared, kept, transported, handled and slaughtered in accordance with the five freedoms which form the basic principles for animal welfare and applies to all links in the FAN Meat value chain.

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4. STANDARDS FOR DESIGN AND MAINTENANCE OF FACILITY AND EQUIPMENT

4.1. General

Premises must be of such design, construction and finish and must be so equipped, in such condition and so located that they can be used at all times for the purpose for which they were designed, equipped and appointed –

- (a) without creating a health hazard; and
- (b) in such a manner that meat –
 - (i) can be handled hygienically on these premises or with equipment on the premises; and
 - (ii) can be protected by the best available method against contamination or spoilage by poisons, offensive gasses, vapors, odors, smoke, soot deposits, dust, moisture, insects or other vectors or by other physical, chemical or biological contamination or pollution.

4.2. Premises

- (a) All areas on the premises must be rendered dust and mud free;
- (b) Provision must be made for storm water drainage;
- (c) The abattoir must be equipped with an enclosed drainage system for the disposal of effluent and sewerage; and
- (d) Vehicle loading and off-loading areas for dispatching and receiving of meat must be curbed, paved, drained and roofed.

4.3. Cross flow

The premises and buildings must be designed to ensure that –

- (a) There is a logical flow in the slaughter process from stunning to bleeding, skinning, evisceration, dressing and finally chilling;
- (b) clean and dirty areas and functions are separated;
- (c) no cross flow between clean and dirty areas and functions occurs;
- (d) inedible or condemned material can easily be removed on a continuous basis from areas where edible material is handled;
- (e) detained meat can be kept and examined without contaminating passed meat; and
- (f) The flow of personnel does not allow “clean” area workers to enter or cross “dirty” areas and vice versa.

4.4. Requirements for interior of building and rooms

In the abattoir where meat and animal products are handled and in toilets, change rooms and dining facilities –

- (a) all rooms must be of such sizes as not to compromise hygiene;
- (b) floors and stairways must be –
 - (i) smooth, impervious, resistant to wear and corrosion and not slippery; and
 - (ii) free of cracks and open joints;
- (c) floor drainage design and construction –
 - (i) must ensure that floors are sloped at a gradient of not less than 1:60 towards drainage points or channels;
 - (ii) must ensure that channels drain from clean to dirty areas;

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- (iii) must be such that drainage channels are smooth, impervious, washable and provided with grates or covers; and
- (iv) must provide all drain inlets with solid traps as well as mechanisms to prevent access of vermin and obnoxious odors into the abattoir;
- (d) interior wall surfaces, partitions and pillars must be –
 - (i) smooth, impervious, washable and light colored;
 - (ii) rounded at floor to wall, as well as wall to wall junctions with a minimum radius of 50 mm;
 - (iii) rounded on top in case of walls and partitions which are not ceiling height;
- (e) interior roof structures or ceilings, must be smooth, impervious, light colored and washable;
- (f) doors and doorframes must be smooth, impervious, vermin proof, light colored and corrosion resistant;
- (g) personnel entrances must have self-closing doors and be provided with hand wash-basins, boot wash and apron wash facilities and apron hooks;
- (h) hatches, where provided, must have an inclined bottom edge sloping towards the dirtier side, and self-closing flaps must be provided when applicable;
- (i) chutes must –
 - (i) be smooth, light colored and corrosion resistant;
 - (ii) open at least 300 mm above the floor;
 - (iii) be sanitizable along its entire length; and
 - (iv) be separate for meat, inedible material and condemned material, respectively, and clearly marked as such.
- (j) windows –
 - (i) must have light colored, corrosion resistant frames and must be glazed;
 - (ii) must be fitted with fly screens when used for ventilation;
 - (iii) must have window sills that slope at 45°; and
 - (iv) may not be opened if it interconnects clean and dirty areas;
- (k) ventilation
 - (i) All working areas must be well ventilated;
 - (ii) Airflow systems should be designed to create a positive airflow from clean to dirty areas;
 - (iii) All refrigerated rooms must be kept free of excessive moisture;
 - (iv) Fresh air intakes must be located in an area not prone to contamination sources such as odors, dust, or smoke;
 - (v) Air intakes must be equipped with effective filters, which prevent the entry of insects or dust;
 - (vi) In refrigerated workrooms, mechanical or electrical ventilation must keep walls and ceilings free of condensation;
 - (vii) All equipment that produces heat, steam, vapor, smoke or odor must be properly vented;
 - (viii) High-temperature edible and inedible rendering equipment, driers and evaporators must be equipped with condensers.
- (l) lighting
 - (i) All working areas must have artificial or natural lighting at an intensity of at least
 - 540 Lux where meat is inspected; and
 - 220 Lux in work areas;
 - (ii) all light fittings must be equipped with covers or splinter protectors;
- (m) all electrical fittings must be waterproof; and
- (n) all wall mounted equipment, structures and fittings must have a clearance of at least 50 mm from the wall.

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4.5. Requirements for equipment

- (a) Equipment –
 - (i) must be corrosion resistant and non-toxic and may not taint or stain meat;
 - (ii) must have surfaces which are smooth, impervious and free of holes, cracks and sharp corners, and must be sterilizable; and
 - (iii) may not contaminate meat with lubricants.
- (b) containers used to hold meat must comply with (a) above and if the sides and bottoms are constructed with openings they must be designed so that meat cannot protrude through the openings or make contact with the floor;
- (c) A preventive maintenance program shall be in place .The preventive maintenance program shall include all devices used to monitor and/or control food safety hazards. Corrective maintenance shall be carried out in a manner that production is not at risk of contamination.

4.6. Sterilizers

- (a) Sterilizers must be readily accessible and must be placed on dressing platforms and within three meters of workstations, adjacent to hand wash-basins in rooms and areas where –
 - (i) animals are slaughtered;
 - (ii) carcasses, meat and offal are detained;
 - (iii) condemned material is handled; or
 - (iv) meat is otherwise handled;
- (b) Sterilizers must be corrosion resistant and capable of sterilizing hand utensils and equipment, such as cutters and saws, at a minimum water temperature of 82°C during slaughter; and
- (c) Sterilizers must have an inlet, overflow and outlet and must drain through a down pipe directly into a closed drainage system or into an open channel, but such drainage water may not flow over the floor across areas where traffic occurs.
- (d) Any other method of sterilization must be approved by the Health Inspector and / or Competent Authority.

4.7. Hand wash-basins

Hand wash-basins must be readily accessible and be –

- (a) placed on dressing platforms and within three meters of workstations in rooms and areas where
 - (i) animals are slaughtered;
 - (ii) carcasses, meat and offal are detained;
 - (iii) condemned material is handled; or
 - (iv) meat is otherwise handled;
- (b) corrosion resistant;
- (c) provided with taps that are not hand or elbow operated;
- (d) supplied with warm running water 42° C +/- 3°C; ~~at not less than 40 °C~~;
- (e) provided with an inlet, overflow and outlet and must drain through a down pipe directly into a closed drainage system or into an open channel, but such drainage water may not flow over the floor across areas where traffic occurs; and
- (f) fitted with a dispenser for liquid germicidal soap as well as hand drying facilities, unless the drying of hands is not necessary in the area where the basin is situated.

4.8. Apron-on wash -cabinets

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Apron-on wash-cabinets must be installed near work stations and be constructed so as to contain splashing from personnel washing their aprons while wearing it and must drain directly into a drainage system.

4.9. Requirements for toilets and change rooms

- (a) Toilets and urinals must be situated in a separate room with separate entrances from the change rooms;
- (b) All toilets must be provided with toilet paper holders and toilet paper, hand wash-basins, soap dispensers with germicidal liquid soap and hand drying facilities;
- (c) Change rooms and toilets may not have direct access into an area or room where meat is handled;
- (d) Workers must be provided with clothing lockers in which to store private clothes separately from protective clothing, ensuring that private clothes and clean protective work clothes do not make contact; and
- (e) Workers must be provided with separate fly proof facilities in which to keep food.

4.10. Water supply

- (a) Water must be under pressure, and must conform to the definition of and testing guidelines for Potable Water as defined and described by the Competent Authority respectively.
- (b) Water points must be provided with –
 - (i) cold water;
 - (ii) water at 42°C +/- 3°C and equipped with hose pipes for sanitizing all areas of the abattoir; and
 - (iii) hose reels to store hoses away from the floor unless vertical (drop) hoses are provided.

4.11. Containers for inedible, condemned and refuse material

- (a) Sufficient theft and leak proof containers with tight fitting lids must be provided to keep and transport condemned material and they must be clearly marked "CONDEMNED";
- (b) Containers must be provided to collect and hold inedible material until disposal;
- (c) Facilities to collect and hold blood prior to disposal must be provided;
- (d) Refuse containers must be provided for the collection of general refuse at sufficient points on the premises;
- (e) Areas where waste or refuse containers are kept prior to removal must be impervious, curbed and drained and the containers must be enclosed or fitted with tight fitting lids.

4.12. Storage facility for packing materials, ingredients and non-food chemicals.

- (a) Facilities used to store ingredients; packaging and spare equipment shall provide protection from dust, condensation, drains, waste and other sources of contamination.
- (b) All material and product shall be stored off the ground and with sufficient space between the material and the walls to allow for inspection and pest control activities to be carried out.
- (c) The storage area shall be designed to allow maintenance and cleaning, prevent contamination and minimize deterioration.
- (d) A separate secure (locked or otherwise access controlled) storage area shall be provided for cleaning materials, chemicals and other hazardous substances that are not intended for inclusion into product.

4.13. Offloading ramps

Offloading ramps, movable or stationary –

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- (a) must be so constructed to avoid injury of animals during offloading and provide a stable area to facilitate the free movement of animals;
- (b) may not have open spaces between the offloading ramp and the vehicle;
- (c) must be at the same height of the vehicle for which it is used;
- (d) must have guide rails;
- (e) must have permanent non-slippery floor at a slope of not more than 20°;
- (f) may not have sharp protruding edges or any other features that may cause injury; and
- (g) must have adequate artificial lighting if animals are offloaded at night.

4.14. *Lairages and holding pens*

Lairages and holding pens –

- (a) may not be closer than six meters from, and not be situated higher than, the abattoir;
- (b) must be constructed of cleanable, non-absorbent and durable material;
- (c) must be so constructed and maintained to avoid injury of animals;
- (d) must have sides not less than 1.8 m in height for cattle and horses and one meter for sheep, goats and pigs;
- (e) must have permanent floors that are curbed and drained;
- (f) must be so constructed to render the floors and drain covers non-slippery;
- (g) must be fitted with gates which are a minimum of 800 mm wide for sheep, goats, calves and pigs and 1800 mm for cattle and horses;
- (h) must be roofed where pigs and sheep or goats are kept;
- (i) must be equipped with cold water sprayers for pigs;
- (j) must be fitted with water troughs at a height of 900 mm for cattle and horses and 300 mm for sheep, goats or pigs or water nipples for pigs;
- (k) must have well drained manure slabs for kraal manure prior to removal except if manure is removed directly into a vehicle;
- (l) must be provided with wash points, hoses and reels; and
- (m) those used to isolate suspect animals must in addition to above have solid walls and gate and must not drain across other pens or pose any other contamination risk.

4.15. *Feeding animals*

Where animals are fed in a lairage or pen –

- (a) a hay rack or food trough which may be removable must be provided;
- (b) hay racks must be free from the floor; and
- (c) feed must be kept in a storeroom that is vermin proof, specifically provided for this purpose if feed is to be stored on the premises.

4.16. *Lairage capacity*

- (a) The number of animals per lairage or pen must be limited so as to allow a minimum floor space of:
 - (i) 1.75m² per cow or horse;
 - (ii) 0.75m² per heavy pig or calf; and
 - (iii) 0.50m² per smaller pig, sheep or goat.
- (b) Lairages must be provided with permanent notices indicating the capacity per species of each pen.

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4.17. *Lairage passages*

Passages in lairages and pens –

- (a) must have permanent floors that are curbed and drained in a manner conducive to free movement of animals;
- (b) must be so constructed to render the floors and drain covers non-slippery;
- (c) may not be less than 1.8 m wide for cattle, horses and at least 1.0 m wide for sheep, goats and pigs; and
- (d) must be well maintained and kept free of loose objects.

4.18. *Crushes or races*

- (a) Crushes or races must be well maintained and kept free of loose objects;
- (b) Must be so constructed to render the floors and drain covers non-slippery;
- (c) Crushes for herding animals between lairages and the stunning area must have an inner width of not more than 0.9 m;
- (d) Crushes must be designed so that the stunning pen is not visible from the crush or lairages, and;
- (e) The section of the crush or race that leads directly into the stunning box must have solid sides.

4.19. *Stunning, hoisting and bleeding*

- (a) For humane restraining of all species immediately prior to stunning there must be provided –
 - (i) a stunning box, approved by health inspector, to restrain cattle and horses;
 - (ii) a restraining pen of 2m x 2m or, preferably, a crowding pen provided with a hinged gate to facilitate floor space reduction for sheep, goats and pigs;
 - (iii) a restraining pen or stunning box must be provided for large, difficult boars and sows; and
 - (iv) any other means of restraining approved by the Official Veterinary Inspector .
- (b) For stunning of animals there must be provided –
 - (i) a silenced captive bolt stunner;
 - (ii) an electrical stunning apparatus; or
 - (iii) any other stunning apparatus approved by the health inspector or official veterinarian.
- (c) The operational parameters for stunning must be displayed on the stunning apparatus or in the stunning area.
- (d) Equipment must be provided to shackle and hoist stunned animals into position, for bleeding.
- (e) Facilities for collecting and storing of blood in closed containers prior to removal and disposal must be provided.
- (f) The minimum clearance for rails and equipment in bleeding areas –
 - (i) for cattle bleeding, from rail to floor in the case of a crawl beam is 4.8 m and a fixed rail is 4.4m; and
 - (ii) for sheep bleeding, from rail to floor is 2.3 m.

4.20. *Dressing and evisceration facilities*

- (a) The minimum clearance for rails and equipment in dressing areas –
 - (i) for cattle dressing, from rail to floor is 3.4 m; and
 - (ii) for sheep dressing, from rail to floor is 2.2m.
- (b) The clearance between equipment and dressing rails must in all cases be such that carcasses do not touch equipment and is at least 1000 mm from walls.

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- (c) Rails with hooks fixed to a wall must be 400 mm from the wall, and meat hanging from such hooks may not touch the floor or wall.
- (d) Rails must be at least 700 mm from columns, pillars or the side of a doorway through which carcasses must pass.
- (e) Separate bleeding and dressing areas must be provided in an abattoir if more than one species of animal is slaughtered at the same time.
- (f) Dehairing of pigs, including finishing and pre-evisceration wash may only be done in the pig dehairing area.

4.21. *Meat inspection facilities*

- (a) Containers, racks and platforms and any other equipment required for meat inspection must be provided, and
- (b) Marked, leak proof and lockable containers or other means to handle and hold condemned and inedible material prior to removal must be provided.

4.22. *Chillers*

- (a) Chillers must be provided to hold at least the daily slaughter throughput-
 - (i) Of carcasses and red offal, unless the red offal is removed from the abattoir on a continuous basis but within four hours after an animal has been eviscerated, and if separate dispatch facilities have been provided for red offal, and
 - (ii) of washed rough offal, unless washed red offal is removed from the abattoir on a continuous basis but within four hours after an animal has been eviscerated.
- (b) The minimum clearance for rails in chillers and freezers –
 - (i) for cattle or sheep or goats on cradles with extension rods, is 1000 mm from the wall and 900 mm between overhead carcass rails; and
 - (ii) for sheep, goats and pigs, if hung separately, is 330 mm from the wall and between overhead carcass rails.
- (c) Spacing of units on the line should be such as to ensure airflow between carcasses or sides with a minimum of 660 mm length of rail per unit;
- (d) A thermo control program must be implemented in terms of which –
 - (i) A plan indicating the layout of all chillers, freezers and processing rooms;
 - (ii) Each room must be equipped with a recording thermograph or equivalent means of monitoring and recording must be used, that indicates the temperature measurements in the room on a continuous basis;
 - (iii) The graphs or data must provide the actual time, temperature and correct date;
 - (iv) Annual calibration and certification to this effect must be available;
 - (v) Records in respect of regular testing of digital thermographs and meters against a certified thermometer by the owner must be available;
 - (vi) If a centralized computer system is used for this purpose, all the relevant temperatures must be recorded on an ongoing basis at least every 30 minutes;
 - (vii) The temperature status of every room must be checked at least every 12 hours to ensure maintenance of temperature control and all deviations must be accounted for;
 - (viii) Checks by the owner must be recorded on temperature control records;
 - (ix) Any deviations from the required temperature must receive immediate corrective action;

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- (x) The hygiene manager must be notified immediately in every case where a temperature breakdown has occurred; and
- (xi) The hygiene manager must indicate daily control checks by way of signature on the records.

- (e) Temperature for meat cutting rooms must be $\leq 12^{\circ}\text{C}$;
- (f) Temperatures of chillers must be 1°C unless Veterinary maturation is required, in which case the requirements as set by the Competent Authority must be followed;
- (g) Meat inside a chiller must have a core temperature of $\leq 7^{\circ}\text{C}$ after 24 hours; and
- (h) Freezer temperatures must be $\leq -16^{\circ}\text{C}$.

4.23. *Dispatch areas*

Dispatch areas must be equipped for –

- (a) quartering, marshalling and loading of carcasses;
- (b) collection and transport, avoiding cross or contra flow, of used roller-hooks to the sanitation facility; and
- (c) sterilization of saws and other cutting utensils.

4.24. *Loading and transport in general*

- (a) A vehicle used for the transport of meat must comply with the requirements set in the Requirements for Food Premises under the Health Act -
 - (i) Trucks must be pre-chilled to 0°C before loading carcasses;
 - (ii) Trucks to be clean, free of taints or smells and operate at 0°C ;
 - (iii) Loading area temperature: max 10°C ; and
 - (iv) Deep muscle temperature of carcasses transported by truck to be 5°C maximum.
- (b) Rough offal may not be loaded in the same loading space as carcasses, portions or red offal, unless such rough offal is kept in clean, waterproof containers with tight fitting lids, complying with standards for such equipment.
- (c) No meat that is packed in cartons may be loaded in the same loading space as exposed meat.
- (d) Chilled red meat carcasses, sides and quarters must be suspended without touching the floor.
- (e) No unwrapped meat may be loaded directly onto the floor.
- (f) Where required by the provincial executive officer, the driver of a vehicle transporting meat must provide the name, address and contact details of the owner of the vehicle.
- (g) Meat returned to an abattoir or cold storage facility may be received only after re-inspection by the registered inspector, and may only be sorted and salvaged for human consumption under conditions determined by the registered inspector.

5. STANDARDS FOR SANITATION

- 5.1. A cleaning and sanitizing procedure for the premises, equipment, containers and vehicles shall be documented and implemented. Programs shall be monitored for continuing suitability and effectiveness.
- 5.2. A detailed post production sanitation program must be in place containing –
 - (a) a list of all areas and rooms to be cleaned;
 - (b) the frequency of cleaning and sanitation,

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- (c) step by step cleaning procedures for each area, room or equipment including ablution facilities, meat transport vehicles and Lairages;
- (d) technical sheets of chemicals used must be provided with reference to use in meat plants, active ingredients, dilution rates and applications;
- (e) cleaning tools and equipment to be clearly distinguishable for the different areas are of hygienic design and made of impervious material that will not present a potential source of contamination.
- (f) results, including microbiological monitoring, to be obtained as the objective of the sanitation program; and
- (g) job descriptions and a training program for all cleaners.

5.3. Programs must be in place for continuous cleaning during:

- (a) Operations;
- (b) Breaks; and
- (c) shift changes

5.4. Sanitation must commence immediately after production for the day or after shift has ended, but no sanitation may commence in any area before all edible meat and animal products have been removed to prevent contamination.

5.5. A new shift may not commence before all areas, rooms and equipment have been cleaned and disinfected and an effective pre-production monitoring program must be in place to ensure cleanliness of all facilities before production commences.

5.6. Chillers must be sanitized before a fresh load of meat is loaded.

5.7. Chillers may not be sanitized if it contains meat.

5.8. Freezers must be defrosted and thoroughly sanitized at least once a year or more often if required so by a registered inspector.

6. STANDARDS FOR PERSONNEL HYGIENE AND TRAINING

6.1. *Visitors entering an abattoir*

All persons entering an abattoir including management, visitors and maintenance personnel must be issued, by the owner, with clean suitable protective clothing.

6.2. *Medical records of employees*

- (a) Before employment at an abattoir or its cutting plant, medical certification must confirm that a person is:
 - (i) healthy and physically able to work as a meat handler; and
 - (ii) not a carrier of, or suffering from, a communicable disease.
- (b) All medical records pertaining to medical examinations and daily fitness checks must be available on record.

6.3. *Health checks*

The owner must ensure that all personnel:

- (a) Are examined daily, before starting work, for adverse health conditions such as suppurating abscesses, sores, cuts and abrasions which may pose a food safety risk, and persons so affected

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may not work with edible products unless such conditions are covered with a firmly secured waterproof dressing so that the risk of contamination is excluded; and

- (b) Who were ill for three days or longer, present medical certificates to indicate that they are now fit to handle foodstuffs.

6.4. *Protective clothing*

- (a) Protective clothing must be light colored, clean, in good repair and must include safety hats, hair nets, beard nets, head and shoulder capes, white gumboots and safety boots compliant with hygiene requirements and waterproof aprons as required by the work situation;
- (b) At the start of each working day or shift, the owner must provide personnel with clean protective clothing;
- (c) The owner must ensure that such clean protective clothing is stored and handled so that it does not make contact with private clothes;
- (d) Private clothes must be kept in a locker that is reserved for that purpose only;
- (e) Protective clothing must be changed or cleaned when it becomes contaminated by obnoxious matter or becomes dirty;
- (f) The workers in the clean and dirty areas must wear distinctive protective clothing, respectively;
- (g) Protective clothing must completely cover all personal clothing; and
- (h) Protective clothing shall not be worn outside the facility.

6.5. *Injuries*

- (a) All cuts and minor injuries must be covered with a durable waterproof dressing, surgical gloves or rubber finger guards;
- (b) Personnel may change into protective clothing only in appropriate change rooms and items of protective clothing left in the abattoir working areas may only be placed or hung in areas designated for these items;
- (c) Personnel may not sit or lie on the ground in their protective clothing during rest periods and may never wear protective clothing outside the premises;
- (d) The abattoir owner must provide laundry facilities or make use of a laundry service and personnel must not be allowed to take protective clothing home to be washed; and
- (e) Personnel must immediately report any injury to the owner.

6.6. *Showering and washing of hands*

Personnel who handle foodstuffs must –

- (a) shower before assuming duties; and
- (b) wash hands and forearms with a liquid germicidal soap and running water immediately after they become soiled or after having used a toilet or when entering a working area.

6.7. *Prohibitions*

- (a) Jewelry, including traditional objects, may not be worn in an area where edible products are handled;
- (b) Fingernails must be short, clean and free of nail varnish;
- (c) Eating, drinking or using or handling tobacco is not allowed in any area where meat is handled;
- (d) Drugs, liquor or any intoxicating substance may not be brought into any part of the premises and a drugged or intoxicated person may not be allowed to enter any part of a meat handling plant; and

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- (e) Personnel must refrain from any actions that can lead to contamination.

6.8. *Training*

- (a) Instructions for washing hands shall be displayed at hand wash facilities.
- (b) All personnel must be trained in hygiene procedures and personal hygiene matters by the owner and training records must be kept for a period of 5 years.

7. PEST CONTROL PROGRAM

7.1. *General requirements*

To avoid creating an environment conducive to pest activity, the abattoir shall implement hygiene, cleaning, incoming material inspections and monitoring procedures.

7.2. *Pest Control program*

- (a) The abattoir must nominate a person to manage pest control activities and deal with appointed, certified pest control operators;
- (b) A pest management program must be documented. This program shall identify target pests, address plans, methods, schedules, control procedures and, where necessary, training requirements;
- (c) The program shall include a list of chemicals which are approved for use in specified areas of the establishment.

7.3. *Preventing access*

- (a) Buildings shall be maintained in good repair. Holes, drains and other potential pest access points shall be sealed;
- (b) External doors, windows or ventilation openings shall be designed to minimize the potential for entry of pests.

7.4. *Harborage and infestations*

- (a) Storage practices shall be designed to minimize the availability of food and water to pests;
- (b) Material found to be infested shall be handled in such a way as to prevent contamination of other materials, products or the establishment;
- (c) Potential pest harborage e.g. burrows, undergrowth, stored items, shall be removed; and
- (d) Where outside space is used for storage, stored items shall be protected from weather or pest damage e.g. bird droppings.

7.5. *Monitoring and detection*

- (a) The pest monitoring program shall include the placing of detectors and traps in key locations to identify pest activity;
- (b) A map of detectors and traps shall be maintained;

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- (c) Detectors and traps shall be designed and located so as to prevent potential contamination of materials, product or facilities;
- (d) Detectors and traps shall be of robust, tamper-resistant construction and shall be appropriate for the target pest; and
- (e) The detectors and traps shall be inspected at a frequency intended to identify new pest activity and the results of inspections shall be analyzed to identify trends. Records of detection and corrective actions shall be maintained and shall be readily available.

7.6. *Eradication*

- (a) Eradication measures shall be put in place immediately after evidence of infestation is reported;
- (b) Pesticides used and application shall be restricted to trained operatives and shall be controlled to avoid product safety hazards; and
- (c) Records of pesticide use shall be maintained to show the type, quantity and concentrations used, where, when and how applied and the target pest.

8. WATER QUALITY PROGRAM

8.1. *Management of reticulation system (i.e. reticulation management plan)*

- (a) The water reticulation system within the premises must be designed, installed and operated in such a manner that prevents:
 - (i) cross connections between potable and non-potable water;
 - (ii) stagnant water (i.e. no dead ends and unused pipes); and
 - (iii) back flow that may cause contamination of the water supply.
- (b) A water reticulation plan must be available to outline the system;
- (c) Water pipes, storage tanks and other parts of the reticulation system must be maintained in good condition; and
- (d) The reticulation system must be flushed (i.e. taps are opened at point-of-use to allow a significant flow of water to occur) when water is not used for an extended period, and after any repairs to the system, to ensure that stagnant water, rust, scale or other material is flushed out of the system.

8.2. *Water supply*

- (a) Water must be at a suitable temperature, under pressure, and must conform to the definition of and testing guidelines for Potable Water as defined and described by the Competent Authority respectively;
- (b) Water must be provided in all areas where required (for processing product, for cleaning rooms and equipment, utensils, and packaging materials, for employee sanitary facilities etc.);
- (c) If an establishment uses a municipal water supply, it must make available to DVS or Meat Board of Namibia upon request, a water report, issued under the relevant State or local authority or agency, certifying or attesting to the potability of the water supply; and

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(d) If an establishment uses a private well for its water supply, it must make available to DVS, upon request, documentation certifying the potability of the water supply that has been renewed at least semi-annually.

8.3. *Reused water*

- (a) Water and ice, may be reused for the same purpose, provided that they are maintained free of pathogenic organisms and fecal coliform organisms and that other physical, chemical, and microbiological contamination have been reduced to prevent adulteration of product; reused water that has come into contact with raw product may not be used on ready-to-eat product;
- (b) Reconditioned water that has never contained human waste and that has been treated by an onsite advanced wastewater treatment facility may be used on raw product, except in product formulation, and throughout the facility in edible and inedible production areas, provided that measures are taken to ensure that this water is potable;
- (c) Product, facilities, equipment, and utensils coming in contact with this water must undergo a separate final rinse with non-reconditioned water that is potable;
- (d) Any water that has never contained human waste and that is free of pathogenic organisms may be used in edible and inedible product areas, provided it does not contact edible product. For example, such reuse water may be used to move heavy solids, to flush the bottom of open evisceration troughs, or to wash ante-mortem areas, livestock pens, trucks, poultry cages, picker aprons, picking room floors, and similar areas within the establishment; and
- (e) Water that does not conform to the definition of and the testing guidelines for Potable water as defined and described by the Competent Authority may not be used in areas where edible product is handled or prepared or in any manner that would allow it to adulterate edible product or create insanitary conditions.

8.4. *Additional requirements for water from an independent supply with additional treatment:*

- (a) In addition to the requirements given above under water supply, a water management plan must be documented and implemented for water from an independent supply (e.g. council or town supply) that is further treated by the operator.
- (b) The water management plan must include:
 - (i) information on any additional treatments (including type of treatment; parameters; procedures for control, monitoring/testing; acceptable limits);
 - (ii) a water sampling and testing program for monitoring the effectiveness of the specific water treatment applied; and
 - (iii) corrective action procedures when the water source is found to be unsatisfactory based on the results of any test done.

8.5. *Water use*

- (a) There must be available for sanitation purposes –
 - (i) potable water;
 - (ii) hot water at a minimum temperature of 82 degrees Celsius in sterilizers for disinfecting hand used equipment;
 - (iii) water at 42 degrees Celsius \pm 3°C at hand wash basins for washing of hands; and

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- (iv) water at 42 degrees Celsius ± 3°C for general cleaning purposes.
- (b) The owner must supply all the necessary equipment needed for sanitation.
- (c) Water points must be provided with –
 - (i) cold water;
 - (ii) water at not less than 42 degrees Celsius ± 3°C and equipped with hose pipes for sanitizing all areas of the abattoir; and
 - (iii) hose reels to store hoses away from the floor unless vertical (drop) hoses are provided.

8.6. *Ice*

- (a) The use of ice as a coolant in an abattoir is subject to prior approval of the system by the health inspector.
- (b) Ice, incorporated in any system or equipment, which is utilized for the chilling of meat must be made from potable water.
- (c) Equipment or systems incorporating ice as coolant for meat must be designed and operated in such a manner that water melting off the ice will not adversely affect the product or adjacent areas.

8.7. *Steam and boiler chemicals*

- (a) Steam used in an abattoir shall be made of potable water.
- (b) Boiler chemicals, if used, shall be either:
 - (i) Approved food additives which meet relevant additive specifications, or
 - (ii) Additives which have been approved by the relevant regulatory authority as safe for use in water intended for human consumption.

9. WASTE AND EFFLUENT CONTROL

9.1. *General*

Documented procedures shall be in place to ensure that waste materials are identified, collected, removed and disposed of in a manner which prevents contamination of products or production areas.

9.2. *Containers for waste*

Containers for waste and inedible or hazardous substances shall be:

- (a) Clearly identified for the intended purpose;
- (b) Located in a designated area;
- (c) Constructed of impervious material which can be readily cleaned and sanitized;
- (d) Closed when not in immediate use; and
- (e) Designed to be effectively emptied.

9.3. *Waste management and removal:*

- (a) Provision shall be made for the segregation, storage and removal of waste;
- (b) Accumulation of waste shall not be allowed in product handling or storage areas; and

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- (c) Removal frequencies from processing areas shall be managed to avoid accumulation with a minimum of daily removal.
 - (i) Rubbish, offal, and processing wastes must be conveyed, stored, and disposed of in a way that will prevent insect and rodent breeding or harborage, foul odors, or food contamination.
 - (ii) All waste solids and waters must be handled and disposed of in compliance with all municipal and national health requirements.
- (d) Labeled materials, products or printed packaging designated as waste shall be disfigured or destroyed to ensure that trademarks cannot be re-used. Removal and destruction shall be carried out by approved disposal contractors. The organization shall retain records of the destruction.

9.4. *Sewage disposal*

- (a) An adequate sewage system or other acceptable means must be provided for disposing domestic sewage and processing (industrial) waste water;
- (b) Industrial sewage must be disposed into a sewage system separate from all other drainage lines or disposed of through other means sufficient to prevent backup of sewage into product areas; and
- (c) Drain man holes should not be located in the production area.

9.5. *Handling of condemned material*

- (a) Carcasses, portions thereof or any edible products in an abattoir, which cannot be passed for human or animal consumption, must be –
 - (i) portioned and placed in a theft proof container which has been clearly marked "CONDEMNED", in letters not less than 10 cm high, or conspicuously marked with a stamp bearing the word "CONDEMNED", using green ink;
 - (ii) kept in a holding area or a room or dedicated chiller provided for the purpose, except if removed on a continuous basis; and
 - (iii) removed from the abattoir at the end of the working day or be secured in a dedicated chiller or freezer at an air temperature of not more than minus 2 °C.
- (b) No person may remove a carcass, part thereof or any edible product which has been detained or condemned from an abattoir, except with the permission of a registered meat inspector and subject to such conditions as he or she may impose.
- (c) The abattoir owner is responsible for complying with the legal requirements or conditions relating to the safeguarding and disposal of any carcass, part thereof or any edible product which cannot be passed for human or animal consumption.

9.6. *Disposal of condemned material*

Any condemned material must be disposed of by –

- (a) total incineration; or
- (b) denaturing and burial of condemned material at a secure site, approved by DVS and local government, by -
 - (i) slashing and then spraying with, or immersion in, an obnoxious colorant approved for the purpose; and
 - (ii) burial and immediate covering to a depth of at least 60 cm and not less than 100 m from the abattoir, providing such material may not deleteriously affect the hygiene of the abattoir; or

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- (c) Processing at a registered sterilization plant

10. ANIMAL WELFARE, HUMANE TREATMENT OF ANIMALS AND SLAUGHTER PROCESS

10.1. Requirements for vehicles

- (a) To transport animals for slaughter at an abattoir –
 - (i) The floors of the vehicle must be solid without openings between different decks that could cause contamination of animals on a lower deck; and
 - (ii) The floors of the vehicle must be non-absorbent and slip free;
 - (iii) Sides and partitions may not be lower than 1 800 mm for cattle and 750 mm for smaller animals;
 - (iv) Shade must be provided for pigs in transit;
 - (v) Ventilation in the vehicle must be ensured; and
 - (vi) The loading space may not have sharp angles, corners, protrusions or holes that may injure animals or have loose objects stored between animals.
- (b) Minimum required floor space per animal on a vehicle is –
 - (i) 1.4 sq. m per adult bovine or equine;
 - (ii) 0.3 sq. m per small calf;
 - (iii) 0.4 sq. m per sheep or goat;
 - (iv) 0.3 sq. m per porker;
 - (v) 0.4 sq. m per baconer; and
 - (vi) 0.8 sq. m per adult other pig.
- (c) There must be partitions on the vehicle to separate –
 - (i) bulls and cows or heifers;
 - (ii) adult and young animals, except for mother animals and their offspring;
 - (iii) different species;
 - (iv) fractious and normal animals; and
 - (v) injured or blind and normal animals.
- (d) Vehicle Hygiene -

The owner of a vehicle must ensure that the vehicle used to transport animals to an abattoir is kept in a clean and hygienic condition.

10.2. Offloading

- (a) Animals arriving at an abattoir must be offloaded immediately by trained personnel.
- (b) Animals must be offloaded in a calm manner to avoid excitement, fear, stress and injury.
- (c) No electrical prodding of pigs and calves is allowed.
- (d) Electrical prodders may only be used for short periods and only if the animal has space to move.
- (e) Animals may not be picked up by their heads, fleece, skin, ears, tails, horns or legs neither may animals be forced to jump from different levels or over gaps during offloading.

10.3. Rest Periods

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Animals must rest overnight in lairages before slaughtering. If this is not possible, they may be slaughtered on the day of arrival provided that they have had a rest period of not less than 1 hour.

10.4. *Lairaging*

- (a) Animals awaiting slaughter must be held in lairages and pens.
- (b) Lairages must be cleaned after each batch of animals has been removed.
- (c) Clean drinking water must be available at all times for animals awaiting slaughter.
- (d) Animals may not be kept in a lairage or pen for longer than 72 hours, but in the case of calves and pigs for not longer than 48 hours.
- (e) The above (d) does not apply to Judas goats for which must be provided –
 - (i) specific roofed pens with suitable bedding sited away from the slaughter area;
 - (ii) sufficient and suitable feed on a daily basis; and
 - (iii) veterinary treatment as required.
- (f) Judas goats mentioned above must not be allowed to breed and castrated males must preferably be used.
- (g) Animals kept in lairages and pens for longer than 24 hours in the case of mono-gastric animals or longer than 48 hours in the case of ruminants, must be fed.
- (h) Unweaned pigs and calves under the age of three months and un-weaned lambs under two months awaiting slaughter for a period of 12 hours or more must be fed with grain in the case of pigs, and with milk or milk substitute in the case of calves, lambs and kids with the understanding that such milk must be fed with a bottle or other method appropriate for such animals.
- (i) Where animals are fed in a lairage or pen, feed may only be placed in a hay rack, trough or other suitable container.
- (j) The following animals may not be penned together:
 - (i) bulls and cows or heifers;
 - (ii) any young animals and adults (except for mother animals and their offspring)
 - (iii) animals of different species;
 - (iv) fractious and normal animals; and
 - (v) cattle with long and short horns.
- (k) Animals that gave birth in vehicles or in lairages must be kept in isolation pens together with their young pending a decision of the veterinarian which will include having the young removed from the abattoir or destroyed, subject to quarantine situations, and with the understanding that animals that have given birth may not be slaughtered within three days.

10.5. *Herding*

- (a) Animals in lairages, pens, passages and crushes must be handled calmly and humanely, without hitting or shouting.
- (b) Prodders must be battery operated and may not be used when animals are already moving forward.

10.6. *Emergency slaughter*

- (a) Animals injured during transportation, off-loading or lairaging must be slaughtered without delay to prevent further suffering of the animal.
- (b) Animals which are injured and cannot walk must be shot and bled where they are situated, on the vehicle or in the lairage and transported to the emergency slaughter area.

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10.7. Isolation

Animals suspected of suffering from a condition that may render the meat unsafe for human and animal consumption must be isolated in a separate area and a crush-pen must be provided for further examination by a veterinarian, for approval prior to slaughter.

10.8. Stunning

At an abattoir animals must be rendered unconscious by a method of stunning before doing the bleeding incision by-

- (a) captive bolt method, subject to the conditions that –
 - (i) the abattoir owner must ensure that the captive bolt pistol is silenced, in a good state of repair and that it is used according to the methods approved by the national executive officer; and
 - (ii) the correct grade of cartridge for the type of animal must be used to ensure maximum bolt speed and penetration of the skull;
 - (iii) a record is kept for the success rate of stunning and a procedure is in place to verify and rectify any problems occurring, be it of human or technical nature, or by
- (b) electrical method, subject to the condition that –
 - (i) the abattoir owner must ensure that the electrical stunning apparatus is in a good state of repair and is used according to the manufacturer's instructions for use;
 - (ii) the terminals must be applied to the head of the animal in such a manner that the current passes through the brain; and
 - (iii) provision must be made for meters to monitor time, voltage and amperage used during stunning to assure that the manufacturers recommendations are adhered to; or by
- (c) any other method approved by the competent authority.

The rate of stunning must be controlled, recorded and be determined by the rate of bleeding and dressing:

- (a) Lambs/Sheep to be shackled, hoisted and neck bled or stuck without undue delay. Maximum time from stun to bleed within 15 seconds; and
- (b) Cattle to be shackled, hoisted and neck bled or stuck without undue delay. Maximum time from stun to bleed within 60 seconds.

11. MEAT INSPECTION

The inspection of meat and slaughter animals for the purpose of declaring meat fit for human consumption must be done by local authorities and / or the Competent Authority to the requirements of:

- The Public Health Act 36 of 1919 and all health regulations in accordance with the said Act; and
- General.Health.Regulations.GN.121.of.14/10/1969

12. TRACEABILITY

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All procedures throughout production must be in line with the National and FAN Meat Traceability requirements and should allow for the trace back of carcasses and meat to farm of origin. Traceability should meet requirements of the Competent Authority at all times.

13. STANDARDS FOR CARCASS CLASSIFICATION

Classification is the visual appraisal of a carcass, describing the characteristics thereof.

Classification is performed by qualified staff of the Meat Board of Namibia Staff, trained in standards and specifications as per:

- (a) The Meat Industry Act, 1981 (Act 1 of 1981) under Section 24 of the Act, Regulations regarding the classification and marking of meat intended for sale in Namibia: Bovine animals, sheep, goats and pigs; and
- (b) Meat Board of Namibia Meat Export Policy Conditions: Meat Classification and Marking System to be complied with by applicants for export permits.

14. ANTE MORTEM MEAT INSPECTIONS

Ante –mortem inspections are done by registered, qualified Veterinarians and Inspectors from the Directorate of Veterinary Services. Inspection is done according to Legal and Veterinary Standards to establish whether the animal for slaughter will render meat which is safe for human consumption.

15. HACCP

A food safety management system must be documented, implemented and maintained

16. MARKETING AND THE USE OF THE FAN MEAT LOGO

Use of the FAN Meat logo is only permitted following successful application by a registered member of the FAN Meat Scheme for the use of such logo. Product marketed under the FAN Meat logo must conform to the rules and relevant standards of the scheme. The FAN Meat Scheme and Logo may be used in the marketing of the product, but only in such a manner which communicates a clear message to the consumer regarding the safety and wholesomeness of the product.

Product originating from free range or grain fed livestock must be sorted accordingly and clearly and correctly marked or labelled so as to conform to market requirements and consumer expectations.

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