

**STUDY GUIDE:**  
**ABATTOIR HYGIENE**

In Collaboration with the Directorate Veterinary Services  
National Department of Agriculture

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### MODULES

#### ABATTOIR HYGIENE

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- Module 6: Sanitation
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## **PROJECTS**

### **Project no. 1**

Critically discuss the following, explaining the correct method of operation. Describe corrective actions to be taken in cases of non-compliance – give examples.

- Receiving and offloading of animals at the abattoir
- Vehicle inspection
- Procedures for handling dead animals.
- Ante mortem procedures and use of ante mortem findings in post mortem inspections
- Structure of lairages
- Humane handling of animals e.g.: food, water, bedding, cleanliness and behaviour of lairage staff

### **Project no. 2**

Why is it important to separate clean and dirty areas, functions and products? Give examples.

### **Project no. 3**

Discuss general structural requirements to eliminate contamination

### **Project no. 4**

Draw up a basic sanitation program for your project abattoir and provide corrective actions for the program in use.

### **Project no. 5**

Assist in routine hygiene monitoring by means of the HAS form and write a report on your findings (shortcomings as well as positive aspects) giving comments and recommendations (corrective actions) where applicable. Submit the HAS form as well.

### **Project no. 6**

Draw an organogram of management in a high throughput abattoir. Indicate where meat inspection and quality control fits in.

### **Project no. 7**

Draw up a thermo control program for your project abattoir. Make a list of all temperatures that must be monitored in the abattoir including:

- Water temperature (hot /cold)
- Room temperatures (chiller/freezer)
- Product temperature (chilled/frozen)

Describe the methods used.

**ABATTOIR HYGIENE  
MODULE 1**

**MICROBIOLOGY**

**OBJECTIVE**

To introduce learners to the science of microbiology relating to abattoirs

**Study aim**

At the end of this theme you must be able to:

**1. INTRODUCTION, TYPES OF ORGANISMS, IMPORTANCE OF BACTERIA AND ELEMENTARY BACTERIOLOGY**

- Describe the size, shapes and habits of bacteria
- Name the requirements for bacterial growth
- Shortly name the 4 phases of the growth cycle.

**2. GROUPS OF BACTERIA, BACTERIAL SPORES, BACTERIA ISOLATED FROM MEAT**

- Name some food-borne pathogens
- Briefly discuss spoilage bacteria and give an example
- Name some bacteria isolated from poultry.

**3. SPOILAGE BACTERIA**

- Name one spoilage bacteria
- Explain the importance of spoilage bacteria in the meat industry
- Explain the importance of chilling of meat in relation to meat spoilage.

**4. FOODBORNE DISEASES**

- Define food borne diseases
- Name the agents of food borne diseases
- Discuss events necessary for food - borne illness to occur.

**5. FOOD POISONING**

- Define food poisoning and name symptoms
- Distinguish between the main types of food poisoning
- Discuss preventative measures for food poisoning

**6. BACTERIA MOST FREQUENTLY ASSOCIATED WITH FOOD-BORNE DISEASES**

- Name 5 of the most common pathogens causing food borne illness.
- Discuss the source, mechanism, foods involved, symptoms and preventative measures for the food poisoning organisms mentioned in the manual

## **ABATTOIR HYGIENE MODULE 2**

### **GENERAL ABATTOIR LAYOUT AND CONSTRUCTION**

#### **OBJECTIVE**

To acquaint candidates with the structural requirements, the product flow and the use of water in an abattoir

#### **Study aims**

At the end of this theme you must be able to:

##### **1. INTRODUCTION**

- What is the definition of an abattoir in the Regulations under the Meat Safety Act.

##### **2. LAYOUT, CLEAN AND DIRTY PRODUCTS AND AREAS**

- Distinguish between “dirty” and “clean” areas of an abattoir
- Distinguish between clean and dirty products – give examples

##### **3. BUILDING AN ABATTOIR, REQUIREMENTS FOR PREMISES, FACTORS AFFECTING ABATTOIR WORK AREAS, FACILITIES FOR STAFF**

- Explain the factors to be considered when building an abattoir
- Discuss the requirements for premises
- Discuss the factors affecting abattoir work areas
- Discuss the requirements for “facilities for staff”

##### **4. USE OF WATER IN THE ABATTOIR**

- Discuss the legal aspects regarding the use of water in abattoirs
- Discuss the guidelines for the testing of water in abattoirs (what tests and how often).

##### **5. DISPOSAL OF ABATTOIR EFFLUENT AND SEPTIC TANK SYSTEMS**

- Briefly discuss the regulatory requirements for the disposal of abattoir effluent
- Discuss the functions of the components of septic tank systems

**ABATTOIR HYGIENE  
MODULE 3**

**PERSONAL HYGIENE**

**OBJECTIVE**

To inform the candidate about the importance of personal hygiene

**Study aims**

At the end of this theme you must be able to:

**1. INTRODUCTION**

- Explain why food handlers must be healthy
- Explain why food handlers must wear clean protective clothes

**2. HEALTH REQUIREMENTS FOR WORKERS**

- Discuss the legal requirements regarding the health and hygiene of workers
- Distinguish between pre-employment medical examination and daily fitness checks

**3. SOME PRACTICAL WAYS TO IMPROVE PERSONAL HYGIENE AND NEATNESS**

- Name some practical ways to improve personal hygiene and neatness in the abattoir

**4. PROTECTIVE CLOTHING**

- Explain the importance of protective clothing and the responsibility of the workers towards it
- Name the different components of protective clothing.

**5. PERSONAL EQUIPMENT**

- Discuss the personal equipment used in an abattoir
- Name 4 uses for knives.

**6. CLEANING OF HAND EQUIPMENT**

- Explain how hand equipment must be cleaned
- Explain the meaning of employment medical examination
- Explain the difference between pre-employment medical examination and daily fitness checks
- Explain when additional medical examination is required
- Explain the importance of personal hygiene and hygiene of personal equipment
- Give at least 5 examples of when workers must wash their hands in an abattoir
- Discuss what must be done in case of an injury
- Discuss the requirements for the washing of hands
- Name a few undesirable hygienic practices workers tend to do in an abattoir
- Pre-slaughter inspections regarding the personal hygiene of workers are carried out daily. What things should be noted?

**ABATTOIR HYGIENE  
MODULE 4**

**HANDLING OF WASTE & CONDEMNED MATERIAL**

**OBJECTIVE**

To give the candidate an understanding of the handling of waste & condemned/ inedible material and the disposal thereof

**Study aims**

At the end of this theme you must be able to:

**1. LEGAL ASPECTS REGARDING CONDEMNED MATERIAL**

- Draw a diagram to indicate which types of waste and by products can derive from an abattoir
- Describe handling condemned material in the abattoir
- Describe the different methods of disposal of condemned material
- Discuss the requirements for sterilising plants including the unclean and clean areas
- Describe the requirements for vehicles transporting condemned material
- List the 4 points that must be indicated in writing when removing specimens from an abattoir
- Discuss requirements for the personnel working in the dirty area of a sterilisation plant
- Discuss the requirements that the facilities for condemned/ detained material should comply with
- Discuss the marking of condemned material and containers
- Discuss the requirements that the “unclean” and “clean” areas of a sterilizing plant should comply with

**2. METHOD OF PREPARING ANIMAL FEED AND CONDEMNED MEAT FOR APPROVAL FOR ANIMAL FEED**

- Describe which materials can be used to recover for the manufacture of animal feed

**3. RENDERING AND THE COLLECTION OF RENDERING BLOOD.**

- Describe the principles of collection of rendering blood
- Describe the principles of rendering and the different methods of rendering

**4. FLOW DIAGRAM OF STERILISATION PLANT**

- Draw a flow diagram to indicate the different process steps at a sterilisation plant

**5. DISPOSAL OF ABATTOIR EFFLUENT AND SEPTIC TANK SYSTEMS**

- Briefly discuss the regulatory requirements for the disposal of abattoir effluent
- Discuss the functions of the components of septic tank systems

**ABATTOIR HYGIENE  
MODULE 5**

**PEST CONTROL**

**OBJECTIVE**

To acquaint candidates with the practice of pest control in an abattoir

**Study aims:**

At the end of this theme you must be able to:

- Describe preventing of pests through design
- Describe preventing pest entry to the food facility
- Describe preventing pests through good sanitation
- Describe preventing pests through good housekeeping
- Describe storage practice
- Describe thresholds
- Describe self assessment or auditing programs
- Describe bird management procedures
- Describe recognizing rat and mouse signs
- Describe rodent management procedures
- Recognize cockroach infestations
- Recognize stored product pests
- Describe domestic fly control programs
- Understand occasional pests



**ABATTOIR HYGIENE  
MODULE 6**

**SANITATION**

**OBJECTIVE**

To acquaint candidates with the practice of cleaning and sanitizing an abattoir

**Study aims**

At the end of this theme you must be able to:

**1. DEFINITIONS**

1.1 Define/ explain the following:

- Sanitation
- Disinfection
- Detergents
- Disinfectants/ Sanitizers

**2. REQUIREMENTS FOR CLEANING AND DISINFECTING THE ABATTOIR AND EQUIPMENT**

- Discuss the requirements for cleaning and disinfecting the abattoir and equipment

**3. SOURCES OF CONTAMINATION**

Name and discuss sources of contamination

**4. THE PRACTICE OF CLEANING AND DISINFECTION**

- Discuss the 7 basic steps of cleaning and disinfecting
- Explain the importance of slaughtering “clean” animals/birds
- Distinguish between detergents and disinfectants/ sanitizers
- Explain the importance of the pre-slaughter sanitation inspection and bacteriological monitoring

**ABATTOIR HYGIENE  
MODULE 7**

**MEAT QUALITY AND SAFETY**

**OBJECTIVE**

To make students aware of the need for quality control, record keeping as well as the importance of HACCP, HAS and HMS

**Study aim**

At the end of this theme you must be able to:

**1. DEFINITIONS**

- Define:
  - Quality
  - Quality assurance (QA)
  - Good manufacturing practice (GMP)
  - HACCP
  - CCP

**2. THE NEED FOR QUALITY SYSTEMS, HACCP AS A FOOD SAFETY MANAGEMENT SYSTEM, QUALITY SYSTEMS AS PRE-REQUISITES FOR HACCP**

- Explain the need for quality systems
- Discuss HACCP as a food safety management system
- Name the quality systems needed as pre-requisites for HACCP
- Name the 7 principles of HACCP
- Name the 12 stages of HACCP

**3. HYGIENE MANAGEMENT SYSTEMS (HMS)**

- Discuss the management responsibilities in terms of Hygiene Management Systems
- Name and discuss the Hygiene Control Programs that must form part of the Hygiene Management System

**4. KEEPING OF RECORDS**

- Briefly discuss the keeping of records

**5. HAS**

- Explain what HAS is
- Name the 10 areas covered by the HAS
- Do a Hygiene assessment at your abattoir using the HAS forms provided
- Discuss water monitoring as a prerequisite for HACCP
- Explain which steps correspond to the different principles
- Explain how a CCP is determined
- Distinguish between QA and GMP
- Draw examples of check registers