

GUIDELINES FOR FOOD STORAGE WAREHOUSES

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SCOPE AND OBJECTIVE

These guidelines are intended to be used by food business operators that own or manage food warehouses which operates by selling food in wholesale or retail, where foods are stored prior to reaching the next stage of the food distribution chain. Since food is often stored and transport in bulk and large quantities it is important that standards and guidelines are set to ensure that the quality and safety of such large quantities of food is maintained.

The objective of these guidelines is to ensure the application of the food safety and quality standards set by the Food Safety and Quality Authority of The Gambia. These guidelines will help to ensure good food handling practices (food warehouse control) in order to minimise the risk of food spoilage that can happen during the storage of food in the warehouses.

INTRODUCTION

Food warehouses are an invaluable link between the farm, the processing plant, the retailer, and the consumers. It is important to recognize the existence of potential food safety risks in all the stages of production, transportation, storage and processing of food. One of the stages of highest vulnerability is during the pre/ or post processing storage and the threats to food safety in this stage are based on a number of factors. These factors include: the warehouse's structural layout, the nature of the products being stored, zoning of the products in the warehouse, the number and complexity of the food handlings within the store, and the manner in which products are displayed. It should also be noted that from a food safety management perspective, and in all instances, the standards and guidelines set by the Food Safety and Quality Authority of The Gambia should be consulted and adhered to.

DEFINITIONS

- ❖ **Food:** Any substance used for food or drink for man or other animals
- ❖ **Warehouse:** for the purpose of this document, warehouse means an enclosure that's used or will be use for the temporal storage of food.
- ❖ **The Authority:** the Food safety and Quality Authority of The Gambia
- ❖ **Operators:** any person working in a Food Storage Warehouse.
- ❖ **Equipment:** storage cases, tables, counters, shelving, pallets, refrigerators, freezers, lifts, packaging equipment, and any other items used in the operation of a Food Storage Warehouse for packaging, handling, displaying, or storing food for sale.
- ❖ **Easily cleanable:** means readily accessible and of such material and finishing that it cause no difficulty in cleaning.
- ❖ **Hazardous substance:** is a substance or mixture of substances which is/are toxic, corrosive, an irritant, flammable, or which generates pressure through heat, decomposition or other means.
- ❖ **Perishable food:** means any food of such type or in such condition or physical state that may easily get spoil or otherwise become unfit for human consumption.

- ❖ **Potentially hazardous food:** means any perishable food which consists in whole or in part of milk or milk products, eggs, meat, poultry, fish, shellfish, or other ingredients capable of supporting rapid and progressive growth of infections or toxigenic microorganisms.
- ❖ **Safe temperatures:** as applied to potentially hazardous food, mean air temperatures of 7 degrees C. or below and 60 degrees C. or above for cold and hot foods respectively.
- ❖ **Sanitize:** An effective treatment to physically cleanse surfaces of equipment, walls, refrigerators and utensils by a process which has been approved by the competent authorities as being effective in destroying microorganisms including pathogens.
- ❖ **Arrangement/zoning:** is the partitioning and distribution of stored food within the warehouse depending on the types of products.

THE WAREHOUSE SITING EXTERIOR AND PHYSICAL GROUNDS

Food warehouses should be located away from inadequately drained areas and excessively dusty roads, yards, or parking lots which may constitute a source of contamination to food products by providing a breeding place for insects, microorganisms, or other vermin. In this regard it is recommended to see the standards set by the Department of Physical Planning and Housing of The Gambia.

The grounds around a food storage warehouse under the control of the operator or owner should be free from the following conditions:

- Improperly stored equipment, litter, waste, refuse, uncut weeds, or grass within the immediate vicinity of the warehouse, which may constitute an attractant, breeding place, or harbourage for rodents, insects, or other vermin.
- Inadequate and open garbage bins, containers, or cans used for disposal which may allow pilferage and/or which may be an attraction for insects, rodents, or other animals.

WAREHOUSE CONSTRUCTION DESIGN AND PHYSICAL LAYOUT

Food storage warehouse buildings should be suitable in size, construction, and design to facilitate maintenance, free and an uninterrupted mobility and sanitary operations of a food storage warehouse. The design and construction of the facilities should also:

- Prevent the entrance of insects, birds, rodents, dogs, cats, and other pests.
- Permit the screening of all openings like doors windows and all other openings against insects and birds etc.
- Allow the sealing of all service connection through the exterior walls of the establishment including water, gas, electrical and refrigerator connection to prevent the entrance of insects, rodents, and birds.
- Permits sufficient lightening and ventilation to prevent any undue condensation of water vapour or objectionable odours.
- Have their floors constructed of easily cleanable and reasonably smooth material. They must be kept clean and in good repair.
- Have the Walls and ceilings reasonably free of dirt, dust, cobwebs and crack-free.
- Have floor drains with traps or screens to prevent the entrance of rodents and insects through drainage lines.

To further safeguard the safety and quality of warehouse stored foods, the operator should implement the four main principles of food warehouse management known as the McKenna's four principles for Food storage warehouses these principles are detailed in the following pages

1. PERSONAL HYGIENE AND TRAINING

All operators of food warehouses must wash their hands with company's supplied soaps (preferably liquid soap) in sinks or containers equipped with hygienic drying system (or clean dry cloths) .There should also be a well detailed training program for operators on topics ranging from food safety personal hygiene, quality awareness, incident and crisis management and traceability. Below is a detailed training program guide for food warehouse operators.

TRAINING PROGRAM FOR FOOD WAREHOUSE OPERATORS

A detailed description of the actions to be taken by the establishment to realize the objective of food safety. The program should consider the training needs of the operators of the warehouse and these necessities should be revised periodically to ensure the operators are well informed in the areas of food safety. The following must be considered in the program:

- ❖ General and specific knowledge for any workplace in areas of hygiene and food safety
- ❖ Personal hygiene: body hygiene, hand washing, clean dress code, periodical medical examination and health certification
- ❖ Health status: symptoms, injuries or health conditions that may influence the safety of the food and the preventive measures to be undertaken (gloves, nose covers)
- ❖ Hygienic Habits and Conducts: the operator from the first instances should know what is expected of him or her in terms of his or her personal habits and conducts. Example respect of no-smoking zones, no spitting etc.
- ❖ Hygienic work practice: the operator should have knowledge of the hygienic work practices involving his or her work in the warehouse and should be able to strictly apply these practices in the warehouse operation (cold chain storage, sanitization, handling of equipment and waste management)
 - a) Basic knowledge about the Hazard Analysis and Critical Control Points and the pre-requisite plans
 - b) Knowledge on the sanitary requirements and conditions set by the authority concerning the activities to be carried out

During the planning and elaboration of the training program the following points should be detailed and recorded:

- The personnel responsible for conducting the training
- The training needs for each and every operator
- The training methodology
- Description of topics the training is to cover
- The group of individuals who should take the training
- Duration of the training program

2. PEST CONTROL

Pest infestation compromises the safety and quality of foods in warehouses. It can impact the safety of food products via the transmission of zoonotic diseases (e.g. leptospirosis from rodent urine or droppings). In order to minimize the risks of contamination by pest infestation a pest control program must be put in place to ensure the prevention and elimination of pests such as rodents' insects, birds, ants, cockroaches and other undesirable animals. In developing a pest control program, the following should serve as a guide:

PEST CONTROL PROGRAM FOR FOOD WAREHOUSES

The actions to be taken in controlling the infestation of pests in the warehouse should be well detailed in the pest control program. During the design and development of the plan it is important to have in mind the factors and conditions that attract pests:

- Physical and structural conditions of the warehouse
- Hideouts
- Accessibility
- Environmental conditions
- Temperature and humidity
- Availability of food and water for the pest

THE PEST CONTROL PROGRAM SHOULD INCLUDE:

Description of the hygienic, biological, physical and/or mechanical measures to use against the infestation of pest in the warehouse indicating:

- ❖ Types of pest
- ❖ Control area
- ❖ Indication of the positions of the equipment (traps etc.) being use for pest control

Examples:

Hygienic measures: always maintain the doors of the warehouse closed, disposing off waste daily.

Physical measures: meshing and/or sealing of all the openings in the walls of the warehouse

Mechanical means: traps adhesives etc.

Biological measure: traps with bates

VERIFICATION ACTIVITIES:

These activities should be put in place to assure the operator that the activities mentioned in the program are effectively functioning and rendering the desired results

OBJECTIVE OF THE VERIFICATION ACTIVITY	EXAMPLE OF VERIFICATION ACTIVITIES
The actions described in the program should be attained in a systematic way	<ul style="list-style-type: none"> ✓ Visual control of the physical barriers, the structural and hygienic condition of the warehouse ✓ Verify the functionality of equipment in place (traps, adhesives etc.)
Are the activities carried out efficiently	<ul style="list-style-type: none"> ✓ Regular and periodic visual examination of the installations' corners, walk paths conduits etc. to detect the presence of undesired animals (rats, insects etc.) or any indication of their presence (foot marks urines faeces etc.)

DOCUMENTATION

From the verification results of the detected incidents to the corrective actions

CONTROL OF THE MAINTENANCE OF THE PHYSICAL AND MECHANICAL ELEMENTS OF PEST CONTROL		
TESTING PROCEDURES	WHAT IS TO BE TESTED	The state of maintenance and functionality of the physical barriers (masks screens door closures) and mechanical elements (traps etc.)
	MESH	Intact without any hole
	DRAIN COVERS	are in their places
	DOORS	close completely
	ELECTRICAL APPARATUS	Functioning normal
	TRAPS	are intact
	HOW IS IT VERIFIED	Visually
	WHERE IS TO BE VERIFIED	On the places where the physical barriers are placed
FREQUENCY	When is the verification to be done	Weekly
RESPONSIBILITY	Who is assign to perform the verification	The operator of the warehouse he will also carry out the corrective actions
THE DOCUMENTATION SYSTEM	How is it documented	The warehouse operator should take note of all the maintenance status of the all

the physical and mechanical elements like traps etc.

CHECKLIST FOR PEST CONTROL PARAMETERS

PEST AND OTHER UNDESIRABLE ANIMAL CONTROL PLAN

WAREHOUSE DETAILS.....

DOCUMENTATION AND FUNCTIONALITY OF THE PHYSICAL AND MECHANICAL ELEMENTS FOR THE CONTROL OF PEST

DATE	Control results					Incident description	Corrective actions	Authorized signature
	Mesh		doors	Drain covers				
	c	I						
C-correct, I- incorrect								

3. SANITATION PLAN

The warehouse facility must be properly cleaned and kept tidy at all times. All cleaning and housekeeping within the warehouse must be thoroughly documented, in a well detailed cleaning and sanitation plan and these records are to be available when deem necessary. A typical sanitation plan should contain:

- ❖ A sanitation and disinfection program
- ❖ Checking and verification activities
- ❖ Documentation

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SANITATION AND DISINFECTION PROGRAM

Description of all the activities that the warehouse operator carries out during the cleaning and disinfection of all surfaces, installations, and equipment(s) connected areas, putting special emphasis on the following:

- ❖ What is to be cleaned and or disinfected
- ❖ Identification of the Surfaces installations equipment that is to be clean and or disinfected indicating the location of each
- ❖ How is the cleaning and or sanitation done

- ❖ Description of the cleaning and disinfection procedure: the flow chart of the cleaning process, cleaning products being used, the concentration of the cleaning reagent being used (as recommended by the Authority).
- ❖ Sanitation and cleaning methods used: automatically or manually types of equipment
- ❖ Time and temperature or other parameters of interest in food safety
- ❖ When is the sanitation and disinfestation done
- ❖ Time and frequency with which cleaning and disinfection is done
- ❖ Who is responsible for the sanitation and disinfection?

TESTING AND VERIFICATION ACTIVITIES

OBJECTIVES OF THE TESTING AND VERIFICATION ACTIVITIES	EXAMPLES OF TESTING AND VERIFICATION ACTIVITIES
The outcome of the action to be the predetermined	<ul style="list-style-type: none"> ✓ Perform a visual verification of the cleaning and disinfection activities to Make sure the process compile with what is pre-established and with the required frequency ✓ A control use of the disinfectant and its concentration
That the performed activities are efficient	<ul style="list-style-type: none"> ✓ Perform a periodic microbiological test of the surfaces that being disinfected ✓ Perform a periodic microbiological analysis of the foods stored in the warehouse ✓ Perform microbiological analysis of the water being use for disinfection

DOCUMENTATION

A complete documentation of the verifications and their results should be kept, this is important and helpful in evaluating the results of the sanitation and disinfection plan

Documentation can be in the form of:

- I. Visual inspection sheets.
- II. Verification lists.
- III. Microbiological and o physiochemical test results.

EXAMPLE OF AN EQUIPMENT SANITATION INSPECTION SHEET

	What is to be verified	Equipment sanitation operation: absence of visible dirt
VERIFICATION PROCEDURE	How is it to be verified	Visual inspection
	Where is it to be verified	The surfaces of the equipment in the warehouse.
FREQUENCY	How often it is done	Before the entrance of new lot.
	Who does it	The operator should be trained to do the inspection and verification as well carry out the corrective measures when necessary.
DOCUMENTATION SYSTEM	How is the documentation done	The warehouse operator should fill an inspection and verification sheet of the sanitation and disinfection sheet of all the installation before the reception of a new lot in the warehouse.

4. LOT TRACEABILITY PLAN

Every food storage facility must have a system in place for tracing lot, date and codes of products to ensure a "first in, first out" (FIFO) method and first expired, first out of inventory rotation. The implementation of the FIFO method allows easy rotation of the food in the warehouse and discouraging the overstay of products in the warehouse. For a complete and detailed guideline on traceability and recall procedures refer to the Food Safety and Quality Authority of the Gambia's Guidelines on traceability for food establishments.

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WAREHOUSE INSPECTION CHECKLIST

NAME OF COMPANY ADDRESS CONTACT	DATE OF INSPECTION		
INSPECTION DESCRIPTION	Y S	N O	CORRECTIVE ACTION
LOCATION SITE & SURROUNDING			
Are premises located away from environmentally polluted areas?			
Surrounding (e.g. drainage, ground etc.) is clean & properly maintained.			
If building is surrounded by vegetation, is it well tended?			
Are the premises free from storage of waste & unused items?			
Is there any sign of pest infestation?			
STRUCTURE, DESIGN & MAINTENANCE			

Are walls, ceilings & doors durable, impervious, smooth, and clean?			
Is there flaking of paint?			
Are floors smooth, clean, durable, no holes, free from litter & stagnation of water?			
Is there damage or flaking of paint at joint between wall & floor?			
Is there an effective loading & unloading system?			
Are Overhead fixtures that are designed to prevent dirt & condensation accumulation clean?			
Is there adequate ventilation to prevent unacceptable accumulation of heat, condensation or odours?			
Are all openings to the exterior have tight-fitting doors, windows & effective screens?			
Is lighting adequate & in good working condition?			
Are lighting fixtures (inclusive used in electric fly-killing devices) located in areas where there are open products are protected?			
STORAGE FACILITIES & PRACTICES			
Is there an appropriate shelving/racking system which are clean & in good conditions?			

If wooden shelving is used, is it maintained smooth & easily cleanable?			
Are food items stored off the floor, away from the roof & away from wall?			
Is there a proper stock rotation (First in First Out) system?			
Are food items stored at appropriate temperatures with proper temperature monitoring & recording? (cold storage)			
Is temperature monitoring devices in good conditions & calibrated periodically?			
Are calibration records available? (cold storage)			
Are food items stored separately from non-food items?			
Is there an appropriate segregation of cooked/ ready-to-be-consumed products from raw products?			
Are chemicals, detergents & other cleaning materials stored in designated areas away from food items?			
Is relevant Material and Safety Data Sheets (MSDS) available?			
Are all non-conforming/damaged products clearly identified & separated in designated area for appropriate disposition?			

Is there storage of food items in food storage prohibited areas such as locker rooms, toilets, garbage rooms, mechanical rooms, open exterior area etc.?			
Is there any gasoline/diesel driven forklift?			
To employees practice eating, smoking, spitting or any unhygienic practices in food storage areas?			
PEST CONTROL			
Are there signs of pest infestation?			
Is pest extermination carried out by external pest controller/trained staff?			
Is toxic rodent baits used in food storage area?			
Are insect-expelled type of fly-killing device is used at open product areas?			
WASTE DISPOSAL			
Are adequate and appropriate refuse containers provided?			
Is all waste removed at regular interval to minimise contamination?			
Are containers used for waste are clearly identified, covered, leak-proof			

STAFF FACILITIES			
Are toilets adequately segregated and do not open directly into food storage area?			
Are toilets provided with hand-washing facilities comprising of water taps, liquid soap & appropriate hand drying facilities?			
Are toilets clean & kept closed?			
Are toilet facilities in good working order?			
FOOD ITEMS IDENTIFICATION & TRACEABILITY			
Are all food items properly labelled?			
Is there any effective traceability system and recall capability?			
DISPATCH & TRANSPORT			
Are food vehicles internally lined with appropriate material & provided with suitable facilities?			
Frozen/chilled food items are transported at proper temperatures with transportation temperature being monitored & recorded?			

Are vehicles covered, clean, free from pest infestation & other contaminants?			
Are separate food vehicles used for unpacked/high risk raw food items & packed finished products or vice versa?			
TRAINING PROGRAMS			
Is good warehouse practices/food handling training provided to relevant staff?			
DOCUMENTATIONS AND RECORDS			
Are proper documentation & Records kept?			
Are cleaning Schedule & records kept?			
Are calibration records for temperature monitoring/measuring equipment? (in the case of cold storage)			
Is storage temperature monitoring and records kept?			
Is pest control documented and records maintained?			
Are cleaning of food vehicles and maintenance records/container inspection records kept?			

DOCUMENT VERIFIED BY

INSPECTOR(S)

NAME

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NAME

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SIGNATURE.....

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