National Department of Health: Environmental Health

health
Department:
Health
REPUBLIC OF SOUTH AFRICA

sa military health service
Department:
Defence
REPUBLIC OF SOUTH AFRICA

National Department of Health: Environmental Health

SCOPE

- Regulatory Framework
- Risk Profiling and Evaluation of Food Processing Facilities
- Guidance on Environmental Monitoring and Corrective Actions in at-risk Foods

National Department of Health: Environmental Health

CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA, NO 108 OF 1996

- **Section 24** of the Constitution states that everyone has a right to an environment that is not harmful to their health or well-being
- The Constitution allocates Municipal Health Services (MHS) as a Local Government function under **Section 156(1)(a) and Part B of Schedule 4**.
- **Chapter 3, Sections 40 and 41** in particular, relates to cooperative government & adherence to the principles of this sections by all spheres.
- Also relates to distinctiveness, interdependence and interrelation thereof.
- **Section 237** provides that all Constitutional obligations must be performed **diligently and without delay**.

National Department of Health: Environmental Health

NATIONAL HEALTH ACT, NO 61 OF 2003

National Health Amendment Act, No 12 of 2013

To amend the National Health Act, 2003, so as to provide for the establishment of the Office of Health Standards Compliance.

It is important to take note that the amendment Act talks to the Office of Standards Compliance (OHSC) and Environmental Health Simultaneously for different premises.

The OHSC deals with health facilities and EHPs deal with other premises, therefore Health Officers are EHPs and other designated officials and Inspectors are from the Office of Health Standards Compliance.

National Department of Health: Environmental Health

NATIONAL HEALTH ACT, NO 61 OF 2003

- **Section 1:** Definition of MHS, This Act defines what the Constitution referred to as Municipal Health Services.
- **Section 32 (1) of the National Health Act, No 61 of 2003 (as amended)**, identifies Municipal Health Services as the function of the District and Metropolitan Municipalities, it further allocates the responsibility of rendering Port Health as National Health function in National Health Amendment Act, No 12 of 2013.

National Department of Health: Environmental Health

“Municipal Health Services”, for the purposes of this Act, includes-

(a) water quality monitoring;

(b) food control;

(c) waste management;

(d) Health surveillance *of premises;*

(e) surveillance and prevention of communicable diseases, excluding immunisations;

(f) vector control;

(g) environmental pollution control;

(h) disposal of the dead; and

(i) chemical safety,

but **excludes** port health, malaria control and **control of hazardous substances**;

National Department of Health: Environmental Health

NATIONAL HEALTH ACT, NO 61 OF 2003

Chapter 5 - District Health System

- Provides for the Establishment of the District Health System with Health Districts aligned to Municipal Boundaries.
- Provides for the Establishment of District Health Councils chaired by Member of the Municipal Council in Section 31(2).
- Emphasize constitutional assignment of the MHS to the local sphere of Government through Section 32 of this Act.
- Provides among others for the development of DHP, District HR Plan in consideration of guidelines given by DG: Health, National & Provincial Policies and relevant IDP.

National Department of Health: Environmental Health

NATIONAL HEALTH ACT, NO 61 OF 2003

Appointment of EHPs as Health Officers

- **Chapter 10, Section 80(1)(c) of the National Health Act, as amended**, provides that the mayor of a metropolitan or district council may appoint any person in the employ of the council in question as a health officer for the municipality in question.
- **The National Health Amendment Act No 12 of 2013** on the other hand amends the **National Health Act** in **Section 5** by prescribing through amendment of Section 83(5) that only a Health Officer who is registered as an environmental health practitioner in terms of the Health Professions Act, No 56 of 1974, may exercise any of the powers conferred under this Section of the Health Act.
- Accountability/Equity of resource allocation.

National Department of Health: Environmental Health

NATIONAL HEALTH ACT, NO 61 OF 2003

80. Appointment of Health Officers and Inspectors

The Minister, Member of Executive Council (MECs) and Executive Mayors may designate any official in their employ as Health Officers.

A Health Officer must be issued with a designation Certificate, which must be in possession when performing official duties and be shown to the person affected by the Health Officer's actions.

A Health Officer has the powers of a Peace Office in terms of Section 1 of the Criminal Procedure Act, No 51 of 1977; this means that a Health Officer must be trained prior to designation or appointment as an Inspector.

National Department of Health: Environmental Health

NATIONAL HEALTH ACT, NO 61 OF 2003

82. Inspections

A Health Officer may enter any premises at any reasonable times to:

- **Inspect**
- **Question any person who may have information**
- **Require person in charge to produce for purposes of inspection or produce for obtaining copies**
- **Take samples of any substance or relevant photographs**

A Health Officer may be accompanied by anyone to assist in conducting the inspection.

National Department of Health: Environmental Health

NATIONAL HEALTH ACT, NO 61 OF 2003

82. Inspections

Compliance Notice may be issued where provisions of the Act were not met.

Taking of other substances not related to the inspection should be done in compliance with CPA and should be returned after use.

A compliance Notice is valid for a maximum period of 4 years, may be renewed prior to expiry.

National Department of Health: Environmental Health

HEALTH PROFESSIONS ACT, NO 56 OF 1974

- All health professionals required to register as provided for in Section 17 of the Act, should register to be able to practice.
- Only Environmental Health Practitioners registered with HPCSA and in good standing can be appointed by Mayor to serve a Municipality in Section 80 of the Health Act, refer to S5/83 of National Health Amendment Act, No 12 of 2013.
- Environmental Health Profession became a listed profession in terms of Regulation relating to the Performance of Community Service by Persons Registering in terms of the Health Professions Act, GN R69 of 2002.
- Minister relaxes the provision of the GN R69 in GN No 380 of 24 April 2017.

National Department of Health: Environmental Health

MUNICIPAL STRUCTURES ACT, NO 117 OF 1998

- According to the Municipal Structures Act No 177 of 1998, Section 84(1)(i), Municipal Health Services (MHS) are the responsibility of District Municipalities **(Category C)** and not Local Municipalities **(Category B)**.
- **Category C:** Municipalities can also enter into a service level agreement with Local Municipalities **(Category B)** if they are not in a position to deliver Municipal Health Services (MHS).
- **Category A:** Municipality is given the powers to render Municipal Health Services by section 83 of the Act, read with Section 156 and 229 as well as schedule 4 part B and Schedule 5 part B of the Constitution.
- Devolution: Section 84 and 85 of the Act, governs issues relating to division of functions and powers which has a bearing on devolution. Section 12 is used to communicate the decision by the relevant MEC.

National Department of Health: Environmental Health

MUNICIPAL SYSTEMS ACT, NO 32 OF 2000

- Section 76 of the Act, gives the Municipality an option to provide a municipal service in its area or part of its area through an internally or external mechanism.
- Section 77, deals with circumstances under which a service can be rendered internally or externally. Municipalities have the choice to outsource the service but remain accountable for it.
- Section 78, gives guidance on how to go about doing an assessment prior to the allocation of the service to any of the options the Municipality chose.

National Department of Health: Environmental Health

RISK PROFILING AND EVALUATION OF FOOD PROCESSING FACILITIES

- Risk Profiling for Food Handling Premises
- SOP
- Inspection Tool
- SOP
- Database

Guidance on Environmental Monitoring and Corrective Actions in at-risk Foods

The Association of Food, Beverage and Consumer Products Companies

Listeria monocytogenes is a bacterial pathogen that is widely distributed in nature.

Listeria monocytogenes is pyschrotrophic* and can tolerate high salt as well as a wide pH range. The organism has been isolated from many raw agricultural products, raw meat and poultry products, raw milk, and raw aquaculture products.

L. monocytogenes has been associated with a number of foodborne outbreaks in a variety of refrigerated food products, such as ready-to-eat (RTE) meat, dairy products, processed vegetables as well as fish and seafood.

* Capable of growth at low temperatures, including refrigeration temperatures.

Guidance on Environmental Monitoring and Corrective Actions in at-risk Foods

The presence of *L. monocytogenes* in RTE products is generally known to occur because;

1) there is no lethality step or an insufficient lethality step, so that incoming materials do not receive a process that would be sufficient to eliminate Listeria on outgoing products (eg fresh or fresh cut fruit and vegetables);

2) products are intended to undergo a listericidal* treatment but are processed incorrectly (eg an insufficient thermal process); or

3) the product is exposed to the processing environment, and has been contaminated or re-contaminated by from the processing environment. This guidance will focus on the latter point for refrigerated RTE foods that can support the growth of *L. monocytogenes*; for clarity, the term “at-risk foods” will be used throughout this document to describe these foods.

* The capacity to cause death or serious harm or damage.

Guidance on Environmental Monitoring and Corrective Actions in at-risk Foods

A number of the earliest Listeriosis outbreaks in the US (late 1990s, early 2000s) were associated with frankfurters, deli meats and other ready-to-eat (RTE) meat products.

A 2003 risk assessment conducted by the US Food and Drug Administration (FDA) and US Department of Agriculture Food Safety Inspection Service (USDA FSIS) identified deli meats as the food category most often associated with Listeriosis (as compared to other RTE foods such as soft cheeses, and smoked seafood).

Due to the early association of Listeriosis with RTE meat, the US meat industry was among the first to implement an industry wide program to address the presence on *Listeria spp*. in the processing environment and on product contact surfaces (PCS, also called food contact surface) as a verification tool to ensure that control programs were effective in preventing potential cross-contamination of finished products.

Guidance on Environmental Monitoring and Corrective Actions in at-risk Foods

Through collaborative efforts between food companies, industry associations, and regulatory agencies, industry was able to aggressively pursue a ‘seek and destroy’ approach to identify possible harbourage site(s) of the organism.

Recent data published by the Centers for Disease Control and Prevention (CDC) shows that there has been only one outbreak involving *L. monocytogenes* contamination of RTE meat (associated with hogs head cheese, 2010) since this approach has been implemented.

Although a number of factors have contributed to this outcome, such as formulating products to prevent the growth of *L monocytogenes*, part of this success is attributed to the allowance for taking corrective actions without holding/implicating/recalling product in reaction to an isolated occurrence of positive *Listeria spp.* on PCS.

Guidance on Environmental Monitoring and Corrective Actions in at-risk Foods

Product categories NOT typically considered to be at-risk foods generally include:

1. Shelf-stable products (eg canned, retorted, acidified, low water activity).

2. Perishable products that allow the growth of L. monocytogenes but have no or very limited exposure to the plant environment after a lethality step (for example, hot-filled or aseptically-filled product).

3. Perishable products with intrinsic characteristics or formulations that prevent the growth of L. monocytogenes (eg acidified refrigerated, listeriostatic/listeriocidal additives).

Product categories considered to be at-risk foods generally allow for the growth of *Listeria spp.* at some point prior to consumption and generally include:

1. Refrigerated, perishable foods that are exposed to the plant environment after the final lethality step.

2. Frozen foods exposed to the plant environment after the final lethality step and intended to be thawed for an extended time prior to consumption (eg deli sandwiches, baked goods, salad ingredients).

3. Foods produced with no lethality step (eg dips, spreads, salads, fresh produce).

Guidance on Environmental Monitoring and Corrective Actions in at-risk Foods

MONITORING FOR *LISTERIA SPP*.

Listeria spp. is a broad indicator, which when detected, provide a signal that conditions favourable for *L. monocytogenes* growth or survival, could exist.

The purpose of the monitoring program is to find where *L. monocytogenes* could potentially grow or survive.

Using a broad indicator group, such as *Listeria spp.* increases the chances of finding these niches and re-acting in an effective manner.

Guidance on Environmental Monitoring and Corrective Actions in at-risk Foods

DESIGNING THE ROUTINE MONITORING PROGRAM

The objective of the routine monitoring program is to detect niches in order to initiate corrective actions before *L. monocytogenes* can contaminate product contact surfaces (PCS) or product.

The routine monitoring program will typically focus on surfaces in the processing area(s) where at-risk product is exposed to the environment.

Sampling locations are typically designated into zones based on the proximity to the food (Table 1).

The number of samples collected will differ by zone, the risk to exposed product and the complexity of the production system.

The majority of the sampling locations are typically focused in Zones 2 and 3 to obtain early indication of Listeria spp. presence in harbourage sites or transfer points.

Guidance on Environmental Monitoring and Corrective Actions in at-risk Foods

Sampling Zone	Definition	Examples of Sample Sites
Zone 1	Product contact surface (PCS) in RTE areas	Conveyor belts and scrapers, tables, holding vats and tanks, utensils, gloves and aprons, pumps, valves, slicers, dicers, filling/packaging machines, transport racks, trays, scales, brine chillers, peeler tables, hoppers, overhead structures prone to condensation formation over product contact surfaces
Zone 2	Non-PCS in RTE areas with close proximity to product or PCS	Exterior of food contact equipment, control panels, lubrication points, sides of weigh scales, other areas where potential risk of contamination exists through human or equipment interaction
Zone 3	Non-PCS outside of Zone 1 or Zone 2, but still within the RTE processing area	Floors, walls, refrigeration units, drains, floor mats, doors, floor scrubbers, forklifts, traffic pathways into process area, overhead piping, wash stations, floor cleaning tools
Zone 4	Non-PCS outside RTE processing areas	Production area offices, locker rooms, restrooms, cafeteria, hallways, trash areas, maintenance shops, warehouses, corridors of production areas

Guidance on Environmental Monitoring and Corrective Actions in at-risk Foods

DESIGNING THE ROUTINE MONITORING PROGRAM

In most circumstances a LEMP should not extend into raw processing areas (eg ingredients, raw meat and fish, and unpasteurised dairy products) as it is assumed these areas are likely contaminated.

Some facilities may not have truly defined raw and RTE areas, in this case the all production room with exposed at-risk may be included (eg fresh cut produce, salad assembly).

In the risk evaluation, thorough consideration should be given to the process flow and nature and intended use of the product.

The sampling of interfaces, transition areas or barriers between raw areas and at-risk product areas is recommended to verify the effectiveness of preventive controls at maintaining separation.

Guidance on Environmental Monitoring and Corrective Actions in at-risk Foods

DESIGNING THE ROUTINE MONITORING PROGRAM

Some examples include the curing area in raw milk cheese production or the floor in front of a single door oven.

Sample site locations should be changed on a periodic basis and the LEMP should be designed to foster aggressive investigation.

Sampling site locations and frequencies may be adapted to verify hygiene following specific events such as start-up following a shutdown, maintenance, or other events that could affect the environment or equipment hygiene.

Guidance on Environmental Monitoring and Corrective Actions in at-risk Foods

SAMPLING PROCEDURES AND GENERAL GUIDANCE

Environmental samples should be taken with the intent of finding *Listeria spp.*, if it is present. Sampling should be done aggressively by covering a large surface and targeting sites that are most likely to be contaminated. Detailed procedures for collecting environmental samples are discussed in various references, for example the Compendium of Methods for the Microbiological Examination of Foods (12) and others (FSIS).

Guidance on Environmental Monitoring and Corrective Actions in at-risk Foods

SAMPLING PROCEDURES AND GENERAL GUIDANCE

1. Swabbing procedures must be conducted aseptically by trained plant personnel using hygienic handling practices (hand sanitizing, wearing gloves, etc). In general, sampling should proceed from the "cleanest" areas to the "dirtiest" areas to avoid cross-contamination of the facility (ie PCS sites should be sampled first, followed by non-PCS). A separate sponge or swab should be used per each distinct site.

a. Up to five separate sponges may be combined into one sample ("compositing"). Typically this is done by using a separate sponge for each site, and then placing up to five sponges into one sample bag for analysis at the laboratory. This should only be done in a mature program where positives are rare, as this may delay or confuse corrective action.

b. PCS samples should not be composited with non-PCS samples.

c. Compositing of samples should not be performed during an investigation.

Guidance on Environmental Monitoring and Corrective Actions in at-risk Foods

SAMPLING PROCEDURES AND GENERAL GUIDANCE

2. Sterile sponges are effective for sampling large areas for Listeria spp. testing. Swabs may be used for small or difficult to access areas. The sampling device should be moistened with an appropriate buffer solution. The choice of buffer should be made in consultation with a technical expert, such as the test-kit provider or a microbiologist, for example a buffer containing a neutralizing agent should be used if sanitizer residues are present and may interfere with the test methodology.

a. When sampling large flat surfaces sponge an area as large as reasonably possible (eg 12 x 12 inches of 30 x 30cm).

b. When sampling irregular or hard to access surfaces sample the entire area as indicated by the surface description. Some disassembly may be necessary for sampling.

Guidance on Environmental Monitoring and Corrective Actions in at-risk Foods

SAMPLING PROCEDURES AND GENERAL GUIDANCE

3. When sampling small areas (eg head screws, small water collection points, screw holes, threaded surfaces or interior corners of equipment) use of a swab may be appropriate. Swab the entire area as indicated by the surface description.

4. Other methods such as sampling of rinsate* may also be utilized for difficult to reach areas. Water, containing low concentrations of contaminants, resulting from the cleaning of containers etc.

* Water, containing low concentrations of contaminants, resulting from the cleaning of containers etc.

Guidance on Environmental Monitoring and Corrective Actions in at-risk Foods

SAMPLE HANDLING

1. Procedures should be in place to avoid cross-contamination during sampling and handling, as well as to protect sample integrity.

2. After sampling, immediately return the samples to the laboratory and refrigerate (do not freeze) to maintain sample integrity until they are tested internally or shipped to an external testing laboratory.

3. During isolated situations when Listeria spp. swab samples are taken and it is not possible for the laboratory to start testing the next day, the samples should be placed immediately in the refrigerator. Samples should then be shipped with freezer packs and sent out at the next available shipping time on the next business day.

Guidance on Environmental Monitoring and Corrective Actions in at-risk Foods

TESTING METHODS

Samples taken as part of a LEMP may include samples from PCS and non-PCS. It is recommended that all environmental samples be tested for *Listeria spp.*

EVALUATION OF RESULTS

1. Data should be reviewed by a qualified individual as soon as practical after receipt from the laboratory.

2. Positive results should lead to investigation and corrective actions.

3. A map of the plant is recommended to indicate where the sample sites are located and to map positive results.

4. The food safety team should monitor and review the LEMP data on a regular basis, looking for trends or patterns. The frequency and depth of review will depend on the facility.

National Department of Health: Environmental Health

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Questions & Answers