NIGERIAN CODE OF PRACTICE NCP XXX

Code of hygienic practice for processing and packaging of Melon and ground Melon Seeds (Egusi).

ICS

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STANDARDS ORGANISATION OF NIGERIA

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Foreword

Melon seed (*Citrullus colocynthis*) popularly referred to as "egusi" is one of the important oil-seed crops widely grown and consumed in tropical Africa. It is an important food crop in Nigeria and is consumed by every tribe. It is a readily available food that supplies nutrients to the consumers. Melon seed is also an export product for economic increase.

The Code of Hygienic Practice for Processing and Packaging of melon and ground melon seeds is developed by the technical committee on melon seeds to guide processors, exporters and retailers to ensure that melon seeds produced are safe for human consumption.

In elaborating this code of practice, references made to research institutes, National and International standards are hereby acknowledged.

1 Scope.

This code of hygienic practice specifies the guideline for processing and packaging of ground melon seeds. It excludes planting and harvesting of melon seed.

2 Normative Reference

The following referenced documents are indispensible for the application of this document. For dated references, only the edition cited applies.

I. CODEX STAN 1-1985: Codex Alimentarius Commission for the labeling of prepackaged foods.

II. CAC/RCP 1-1969, Rev 4-2003 Codex Alimentarus Commission/Recommended Code of Practice-General Principle Of Food Hygiene

III. NIS 306: 2008: Standard for Portable Water

3.0 TERMINOLOGY

For the purpose of this code, the following definitions shall apply:-

3.1 **Batch**: A definite quantity of a commodity produced essentially under the same condition.

3.2 **Farmer's stock melon seed:** In-shell melon seed as they come from the farm, after separation from fruit.

3.3 **In-shell melon seed:** Seeds still inside the protective covering or shell

3.4 **Shelled melon seed:** Seeds without a covering or shell.

3.5 **Label:** It includes any tag, brand, mark, pictorial or other descriptive scripts, written, printed, marked, embossed or impressed on, or attached to the container.

3.6 **Lot:** A definitive quantity of a commodity produced essentially under the same conditions

3.7 **Melon seed (egusi):** A seed rich in fat and protein.

Note:Egusi when ground into powder is the main ingredient in the Nigerian egusi soup recipe.

4 Hygiene Requirements in Processing Melon seeds

4.1.1 Purchasing of farmer's stock

The personnel in the factory should monitor the quality of melon seed lots offered to him. The general appearance of the melon seeds should be observed during the process of

unloading. Special precautions should be taken to reject seeds showing signs of insect damage or mould growth.

4.1.2. Receiving and inspection

Farmer's stock melon should be inspected on arrival. It is advisable to know the origin and history of each lot of melon seed. The transport vehicle shall be examined for cleanliness, insect infestation, dampness or unusual odours.

4.1.2.1 Melon seeds if not used immediately shall be stored in a warehouse; the warehouse should be cleaned thoroughly at all times.

4.1.2.2 Melon seeds should be stored in an enclosed warehouse to prevent entrance of rodents or birds or which may have leaks in the roof or walls that can allow the rain to enter.

4.1.2.3 The warehouse should be checked frequently for leaks or infestation. It should be well ventilated.

4.1.3 Unloading equipment and area

Unloading equipment such as an unloading hopper, conveyor belt, bucket elevator, and dirt removing equipment should be so designed as to prevent accumulation of dirt.

4.1.4 Cleaning

The maximum possible amount of foreign material, loose shell and loose kernels should be removed. Sand screens and aspirators can be used to achieve this.

4.1.5 Shelling

All foreign material should be removed from the shelled melon seeds. The shelled melon seeds should be continuously inspected to determine whether the factory equipment is performing properly.

4.1.6 Grinding

The melon seed is ground into flour, care should be taken to prevent cross contamination. The ground seeds should be allowed to cool before packaging to prevent moisture accumulation due to heat from grinding the melon seed.

5 Environmental Hygiene

In addition to relevant provisions in the Recommended International Code of Practice -General Principles of Food Hygiene, (CAC/RCP 1-1969, Rev.2003), the following shall apply

5.1 Floors shall be made of waterproof, non-absorbent, washable, non-slip and non-toxic materials, without crevices, and shall be easy to clean and disinfect. Adequate drainage should be provided.

5.2 Walls shall be of washable and non toxic materials, light colored and should be easy to clean and disinfect.

5.3 Windows and other openings shall be constructed so as to enhance ventilation and to avoid accumulation of dirt; windows and other openings shall be fitted with screens .Such screens shall be easily moveable for cleaning.

5.4 Doors shall have smooth surface and where appropriate, be self-closing and close fitted.

5.5 All overhead structures and fittings shall be installed in such a manner as to avoid contamination directly or indirectly of food and raw materials. The design of these structures shall also be such as to prevent accumulation of dirt.

5.7 Offices, cloakrooms, toilets, and areas where animals are kept shall be completely separated from and shall not open directly on to product handling areas.

5.8 Materials such as wood, which cannot be easily cleaned and disinfected, shall be avoided, unless where its use would not be a source of contamination.

5.9 Dry clean-up procedures should be utilized to avoid wet spots in which micro-organisms can propagate and contaminate contacted melon seeds. Even though water may not be used directly on equipment, spray and elevated humidity from continuous use can increase moisture in organic matter trapped in crevices in equipment, such as conveyors, to the point where micro-organisms can proliferate.

6 **Sanitary Facilities**

6.1 **Water supply**

6.1.1 As a general principle only potable water shall be used in food handling (see NIS 306:2008).

6.1.2 There shall be supply of potable water under adequate pressure and suitable temperature.

6.1.3 Water in direct contact with product contact surfaces shall not contain substances, which may be hazardous to health or may contaminate the product.

6.1.4 Non-potable water used for steam production, refrigeration, fire control and other similar purposes not connected with product shall be carried in completely separate lines identifiable, preferably by colour, and with no cross-connection with or back-siphonage into system carrying potable water.

6.2 **Waste disposal**

6.2.1 Adequate, suitable and conveniently located changing facilities and toilets shall be provided in the factory. There shall be an efficient waste disposal system, which shall always be maintained in good condition. Disposal of waste shall be in such a way as to prevent contamination of food.

6.2 All unwanted substances shall be thrown into the waste bin and disposed off at the end of each production. The use of bin liners is strongly recommended.

7 Cleaning of the factory

7.1.1 The factory shall be swept and shall be washed with a neutral general-purpose detergent solution.

7.1.2 All drains shall also be kept clean at all time.

7.1.3 Toilets shall be so designed as to ensure hygienic removal of waste matter. These areas shall be well lit, ventilated and where appropriate heated or cool and shall not open directly on to product handling areas.

7.1.4 Hand-washing facilities with warm or hot and cold water, a suitable hand- cleaning preparation and with suitable hygienic means of drying hands shall be provided adjacent to

toilets and in such a position that the employee must pass them when returning to the processing area.

8 Sanitary Maintenance of Equipment.

8.1 **Grinder**

The grinder shall be dismantled and washed thoroughly after use with a neutral general-purpose detergent solution.

8.2 **Shelling machine**

The machine should be made of stainless material. The sheller shall be cleaned using a thin layer of food grade grease as this prevents rusting of the metal. The sheller should be washed down with warm water and an all-purpose detergent and it is wiped dry immediately.

8.3 **Utensils**

Trays and other utensils shall be of stainless material.

9 Personnel Hygiene and Health Requirements

9.1 The manager of the factory should arrange for adequate training of all food handlers in hygienic handling of food and in personal hygiene.

9.2 Persons who come into contact with food in the course of their work should have a medical examination prior to their employment.

9.3 The management of the factory should ensure that no person known or suspected to be suffering from a disease or with infected wounds, skin infections, sores or with diarrhoea, is permitted to work in any food handling area. Any person so affected should immediately report to the management.

9.4 Any person who has a cut or wound should not continue to handle food or food contact surfaces until the injury is completely protected by a waterproof covering which is conspicuous in colour. Adequate first-aid facilities should be provided for this purpose.

9.5 Hands should always be washed before commencing work, immediately after using the toilet, after handling contaminated material and whenever else necessary.

9.6 Every person in a food handling area should maintain a high degree of personal cleanliness while on duty, and should at all times wear suitable protective clothing including head covering and footwear, all of which articles should be cleanable unless designed to be disposed of after each use. Personnel should not wear jewlery when in food handling area.

9.7 Any behaviour which could result in contamination of food, such as eating or use of tobacco should be prohibited in food handling areas.

9.8 Responsibility for ensuring compliance by all personnel should be specifically allocated to competent supervisory personnel.

10 Lighting

Adequate natural or artificial lighting should be provided throughout the factory.

Light bulbs and fixtures suspended over food materials in any stage of production should be of a safety type and protected to prevent contamination of food in case of breakage.

11 Ventilation

Adequate ventilation should be provided to prevent excessive heat, steam condensation and dust and to remove contaminated air. The direction of the air flow should never be from a dirty area to a clean area. Ventilation openings should be provided with a screen. Screens should be easily removable for cleaning.

12 **Packaging**

12.1 Ground melon seed shall be packaged for sale in containers which will safeguard the hygienic and nutritional qualities of the product.

12.2 Packaging material shall be made of substances which are safe and suitable for their intended use.

12.3 All packaging materials shall be stored in a clean and hygienic condition.

12.4 Careless handling of containers shall be avoided to prevent the possibility of contamination of the ground melon seeds.

12.5.1 Labeling

In addition to the requirement in CODEX STAN 1-1985, each package shall be legibly and indelibly marked with the following:

12.5.2 Product name

12.5.3 Nutritional information

12.5.4 Net weight of content

12.5.5 Name and Location address of factory

12.5.6 Best before date, Production date and Batch number

12.5.7MANCAP NIS Logo (if obtained)

12.5.8 Country of Origin

12.6.1 **Processing and production records**

Processing batches shall be uniquely identified. Traceability records shall be well documented. These records shall be retained for a period that exceeds the shelf life of the product, but unless a specific need exist they need not be kept for more than two years.

12.6.2 **Lot identification**

Each container shall be indelibly labelled to identify the producing factory and the lot.

12.6.3 **Preservation of Product**

Packaged ground melon should be stored at a moisture level low enough so that the product can be held under normal storage conditions. In some cases, finished products can be packed in gas tight containers under nitrogen or vacuum to protect quality and retard possible mould growth.

12.7.1 **Storage**

12.7.2 Ground melon seeds shall be stored in such a way as to preclude the contamination or proliferation of microorganisms and protect against deterioration of the product or damage to the packaging materials.

12.7.3 Ground melon seeds as well as packaging materials including cartons shall be stacked on pallets to prevent contamination.

12.7.4 Ground melon seeds shall be adequately cooled before they are packaged and stored to protect against the deterioration of the product by microorganisms.

12.7.5 The following provisions shall apply where ground melon seeds are placed in cooling room:

12.7.5.1 Entry shall be restricted to personnel necessary to carry out operations efficiently.

12.7.5.2 Doors shall not be left open for extended periods and shall be closed immediately after use.

12.7.5.3 Ground melon seeds as well as containers holding ground melon seeds products shall not be stacked directly on the floor.

12.7.5.4 No cooling room shall be loaded beyond its designed capacity.

12.7.5.5 Where cooling equipment is not manned, automatic temperature recorders shall be installed. If no automatic device is installed, temperatures shall be read at regular intervals and the reading recorded in a log book.

12.7.5.6 Area with new concrete floors or walls should not be used for storage until it is absolutely certain that the new concrete is well-dried and free of excess water. For the first year it is safest to use an approved plastic cover spread over the entire new concrete floor as a moisture barrier prior to use for melon seeds.

13 Transport of End Product

13.1 Means of transport of containers shall comply with the following conditions:

13.1.1 All internal finishes shall be made of corrosion-resistant material be smooth, impervious and easy to clean and disinfect. Joints and doors shall be sealed so as to prevent the entry of pests and other source of contamination.

13.1.2 Vehicles intended for the transportation of ground melon seeds shall be equipped in such a manner that the ground melon seeds do not come into contact with the floor.

13.1.3 Ground melon seeds shall be placed in a clean means of transport. If necessary it shall be cleaned and disinfected before loading.

14 End Product Criteria

Shall conform to the requirements of NIS XXX Dried Melon seeds or NIS XXX Ground Melon

As appropriate.

Note:
Application of the Hazard Analysis Critical Control Point (HACCP) concept shall be adopted in order to ensure that the requirement of this code is followed and its purpose achieved (CAC/RCP 1-1969, Rev 4.2003; refer specifically to pages 21-31).