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EAST AFRICAN STANDARD

Egg washing machines — Specification

EAST AFRICAN COMMUNITY

Draft for comments only — Not to be cited as East African Standard

Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in East Africa. It is envisaged that through harmonized standardization, trade barriers which are encountered when goods and services are exchanged within the Community will be removed.

In order to meet the above objectives, the EAC Partner States have enacted an East African Standardization, Quality Assurance, Metrology and Test Act, 2006 (EAC SQMT Act, 2006) to make provisions for ensuring standardization, quality assurance, metrology and testing of products produced or originating in a third country and traded in the Community in order to facilitate industrial development and trade as well as helping to protect the health and safety of society and the environment in the Community.

East African Standards are formulated in accordance with the procedures established by the East African Standards Committee. The East African Standards Committee is established under the provisions of Article 4 of the EAC SQMT Act, 2006. The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the procedures of the Community.

Article 15(1) of the EAC SQMT Act, 2006 provides that "Within six months of the declaration of an East African Standard, the Partner States shall adopt, without deviation from the approved text of the standard, the East African Standard as a national standard and withdraw any existing national standard with similar scope and purpose".

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

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Introduction

It is estimated that with the present egg production practice, about 30 percent of eggs become soiled or show dirty spots on the surface of the shell. These spots are vulnerable centres for growth and multiplication of micro-organisms which lead to spoilage of eggs during storage, and transportation and might create public health hazards also. Cleaning of such eggs manually by buffing each egg or by wiping with wet cloth is generally tedious, time consuming and ineffective. Mechanical aids for cleaning eggs are, therefore, becoming increasingly popular. Since fragile nature of shell limits the abrasion technique in large scale operation, hence mechanical aids using detergent solution for egg cleaning are mostly preferred. In this standard, attempt has been made to specify the essential requirements of such machines for guidance in their production. This standard also provides guidelines for washing the eggs (see Annex A).

In the preparation of this East African Standard, the following sources were consulted extensively:

IS 6696:1972(R2000), *Specification for Egg Washing Machines*

Codex Alimentarius website: http://www.codexalimentarius.net/mrls/vetdrugs/jsp/vetd_q-e.jsp

USDA Foreign Agricultural Service website: <http://www.mrlatabase.com>

USDA Agricultural Marketing Service website: <http://www.ams.usda.gov/AMSV1.0/Standards>

European Union: http://ec.europa.eu/enterprise/sectors/pharmaceuticals/veterinary-use/maximum-residue-limits/index_en.htm

Assistance derived from these sources is hereby acknowledged.

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Egg washing machines — Specification

1 Scope

This East African Standard specifies the requirements for egg washing machine using detergent solution for cleaning shell eggs.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60335-2-73, *Household and similar electrical appliances — Safety — Part 2-73: Particular requirements for fixed immersion heaters*

ISO 565, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings*

3 Definitions

For the purpose of this standard the following definition shall apply:

egg washing machine

A device which cleans the shell eggs with the help of detergent solution either by whirl pool mechanism or by agitating the solution by air bubbling arrangement.

NOTE A drawing for typical egg washing machine is given in Figure 1 which is for guidance only.

4 Material

4.1 Washing tank

The washing tanks shall be made from sheets not less than 1.25 mm thick of stainless steel or any other suitable non-corrosive metal.

4.2 Base plate

The base plate (see Figure 1) shall be of 6.3 mm thickness conforming to ISO 565 or any other suitable non-corrosive metal.

NOTE In case the design given in Figure 1 is adopted, the materials for circular tubes and vertical studs shall be as follows:

- a) **Circular tubes** — made of stainless steel (or any other non-corrosive metal) tube having 9.5 mm inner diameter. The outer diameter of the circular rings made from the tube shall be equal to the inner diameter of the washing tank.
- b) **Vertical stud** — It shall be of stainless steel (or any other non-corrosive metal) tube having 4 mm to 75 mm diameter.

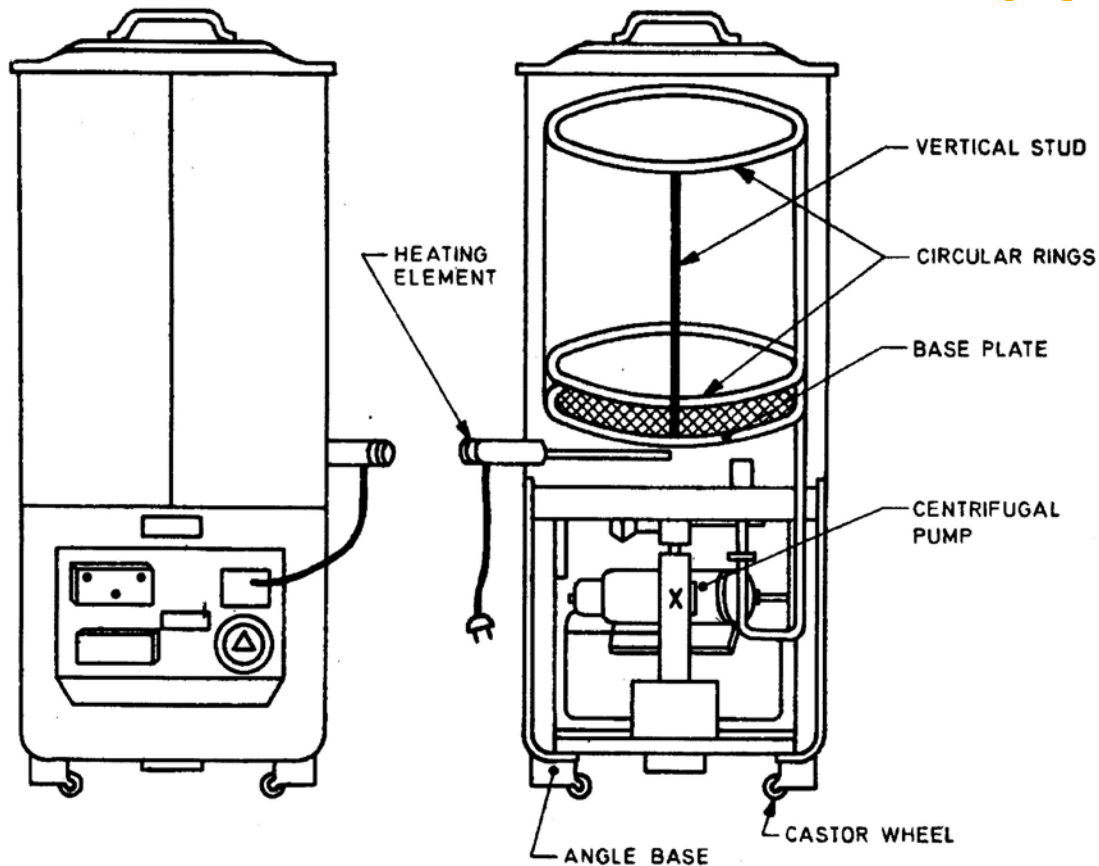
5 Requirements

5.1 Heating element

For cleaning 1 500 eggs per hour, the heating element shall be of 2 to 3 kW immersion type (see IEC 60335-2-73).

5.2 Thermostat — The thermostat shall be capable of maintaining temperature within the working temperature of 42 °C to 57 °C.

5.3 All electrical connections of the machine shall conform to the requirements given in IEC 60335.



5.4 Base plate

The plate shall be so positioned as to protect the heating element and to support egg laden baskets.

NOTE The basket should be perforated and may be made of plastic coated wire to hold about 200 eggs. The filler flat carrier made of galvanized iron or plastic covered wire may also be used.

5.5 Gate valve

There shall be at least 12 mm wide valve at the bottom of the vessel to ensure easy drainage of washing liquid after cleaning. A flexible hose pipe may be fitted to the valve for easy drainage.

5.6 Mounting

The unit shall be mounted on firm mild steel angle base. Castor wheels may also be provided when machine is to be kept mobile.

5.7 Washing mechanism

A whirl pool action or air bubble agitation be applied for cleaning eggs or the mechanism described below may be adopted.

5.7.1 The inner diameter of two circular tubes (see Figure 1) shall be not less than 9.5 mm. The tubes shall have jet holes of 0.8 to 1.0 mm diameter subtending at an angle of 11° to the vertical axis of the vessel. These tubes shall be connected to a centrifugal water pump run by a 120-W motor.

6 Marking and packing

6.1 Marking

6.1.1 Each machine shall be indelibly and legibly marked with the following particulars:

- a) Manufacturer's name or trade-mark;
- b) Manufacturer's model or type reference;
- c) Rated voltage wattage and frequency of both machine and the motor; and
- d) Any essential operating instructions.

6.1.2 Each egg washing machine may also be marked with a Certification Mark on one of its sides.

6.2 Packing

Each machine shall be packed individually as agreed to between the purchaser and the vendor.

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Annex A
(normative)

Recommended washing practice

Procedure

Prepare the detergent solution daily with the approved detergents and maintain a proper ratio between the detergent and germicide. About 200 ppm germicide is recommended. Start washing eggs when the solution is at about 38 °C. Do not wash more than 1 500 eggs in 40-50 litres of detergent solution. Prepare fresh solutions daily and wash all the eggs the day they are collected. Dry the eggs before they are packed. A drier may be used to hasten drying of eggs.

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