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EAST AFRICAN STANDARD

Honey processing unit — Technical requirements

EAST AFRICAN COMMUNITY

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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

Honey being a biological product tends to get spoiled due to fermentation. Processing of honey is, thus, an essential step for apiarists, involving indirect heating of honey at conttolled temperatures to facilitate straining, prevent fermentation by killing yeast cells and retard granulation. It is, therefore, imperative that the honey processing unit should not be only suitably constructed but also that the layout of processing plant should facilitate hygienic processing of honey and its quality control.

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

IS 14522:1998(R2004), *Honey Processing Unit — Technical Requirements*

Codex Alimentarius website: http://www.codexalimentarius.net/mrls/pestdes/jsp/pest_q-e.jsp

USDA Foreign Agricultural Service website: http://www.mrldatabase.com

USDA Agricultural Marketing Service website: http://www.ams.usda.gov/AMSv1.0/Standards

USDA Plant Inspectorate Service website: http://www.aphis.usda.gov/import_export/plants

European Union: http://ec.europa.eu/sanco_pesticides/public

Assistance derived from these sources is hereby acknowledged.

Honey processing unit — Technical requirements

1 Scope

This East African Standard covers the construction aspects and layout besides other requirements for a honey processing unit.

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.

ISO 1052, *Steels for general engineering purposes*

ISO 16143-1, *Stainless steels for general purposes — Part 1: Flat products*

ISO 16143-3, *Stainless steels for general purposes — Part 3: Wire*

ISO 21948, *Coated abrasives — Plain sheets*

3 Location

3.1 The site for construction of honey unit should be away from main township to avoid proximity of municipal drainage, town dump, effluents, air pollution, etc.

3.2 The plot should be at high level so as to preclude any possibility of underground seepage of water in basement.

3.3 It should be slightly isolated from main highways or traffic lines, but should have minor feeder approach road.

3.4 There should be ample supply of potable water.

4 Constructional requirements

4.1 The honey unit should be constructed on a plinth which is at least 1 m above the ground level.

4.2 There should be a basement with rooms to be used for separate storage of unprocessed bulk honey, and processed honey, in various categories of packings.

4.3 There should be complete partition wall between processed and unprocessed honey storage rooms.

4.3.1 In order to have lowest possible storage temperature, the processed and unprocessed honey should be stored in the basement only.

4.4 Ground floor should have separate rooms for processing, filling, packing and office.

4.5 Walls

4.5.1 The east and west side walls should not have windows or ventilators. The walls should be made of porous bricks plastered and painted outside with white reflecting paint so as to avoid heating of the walls due to solar exposure.

4.5.2 The north and south side walls should carry ventilators and windows to provide uniform adequate light with sturdy bars and sturdy fine wire mesh and glass panels so as to keep away flies, reptiles, bees, etc.

4.5.3 The compound walls should be preferably of brick or masonry or of fine wire-mesh fencing with well-kept green hedge.

4.6 Windows

The windows and ventilators of basement and ground floor should have permanently fixed fly-proof wire frame outside and glass panel windows opening inside.

4.7 Doors

All moms in the honey unit should have double doors. The outer door should he fitted with wire-mesh and should have a self-closing device. The inner door should be an ordinary one with locking system.

4.8 Godown

There should be a godown for storing packing material in the backyard with a separate room for washing bottles and containers on one side and fly-proof toilet room equipped with septic tank or underground drainage on the other side.

5 Plant layout

5.1 Honey processing unit generally consists of the following equipment:

a) Jacketed pre-heating tank,

b) Gear pump with motor,

c) Filter,

d) Processing tank,

e) Cooling tank, and

f) Settling tanks.

5.2 Honey processing-cum-moisture reduction unit, however, consists of the following equipment in addition to those mentioned under 5.1:

a) Helical coil heat exchanger,

b) Falling film vacuum evaporator,

c) Falling mm heat exchanger,

d) Jacketed vessels,

e) Vacuum pump,

t) Centrifugal pump, and

g) Temperature indicator-cum-controller.

5.3 Layout of honey processing unit and honey processing-cum-moisture reduction unit is given in Figure 1 and 2 respectively and is for guidance only.

6 Materials

6.1 All parts of the various equipment which come into contact with honey, should be made of stainless steel or of food grade plastic where plastic is used.

6.2 All parts, surfaces of which do not come into contact with honey, should be made of material which is either corrosion-resistant or is rendered corrosion resistant by a suitable preventive treatment on a prepared rust-free surface. For example, the outer cladding or shell of preheating tanks, processing tanks, evaporators, other jacketed vessels may be fabricated from stainless steel or mild or aluminium alloy.

7 Other requirements

7.1 Insulation to prevent heat loss should be provided to the various processing equipment, accessories and pipe lines carrying heated honey or hot water, wherever possible.

7.2 The storage, processing, settling tanks, other vessels, all pipes and valves shall be leak proof.

7.3 Meta1lic material when used for gaskets or for sealing shall be of food grade, non-toxic, non-absorbent, free from patches, blisters, porosity, embedded foreign matter and physical defects. The material shall not impart any flavour or deteriorate when in contact with honey or cleaning agents.

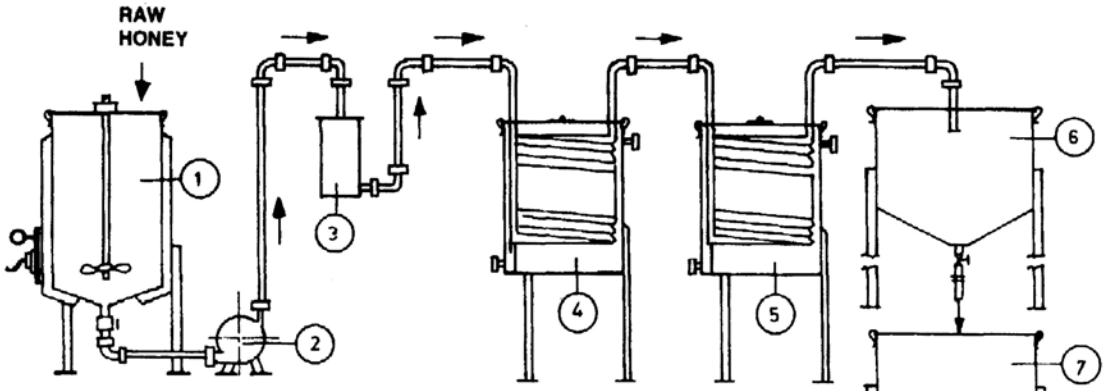
8 Workmanship

8.1 Welding used for joining different stainless steel components and mild steel components shall not be porous and shall he smooth.

8.2 Any sharp comers and protruding fasteners shall be avoided.

8.3 All the stainless steel surfaces shall be of sanitary finish and finished smooth by buffing with ISO 21948.

8.4 All the mild steel parts which do not come into contact with honey shall be painted with rust preventive anti-corrosive paint.



1 PRE HEATING TANK
2 GEAR PUMP
3 FILTER
4 PROCESSING TANK WITH HEATER THERMOSTAT AND SPIRAL COIL
5 COOLING TANK
6 SETTLING TANK
7 PROCESSED HONEY STORAGE TANK

Figure 1 — Layout of honey processing plant

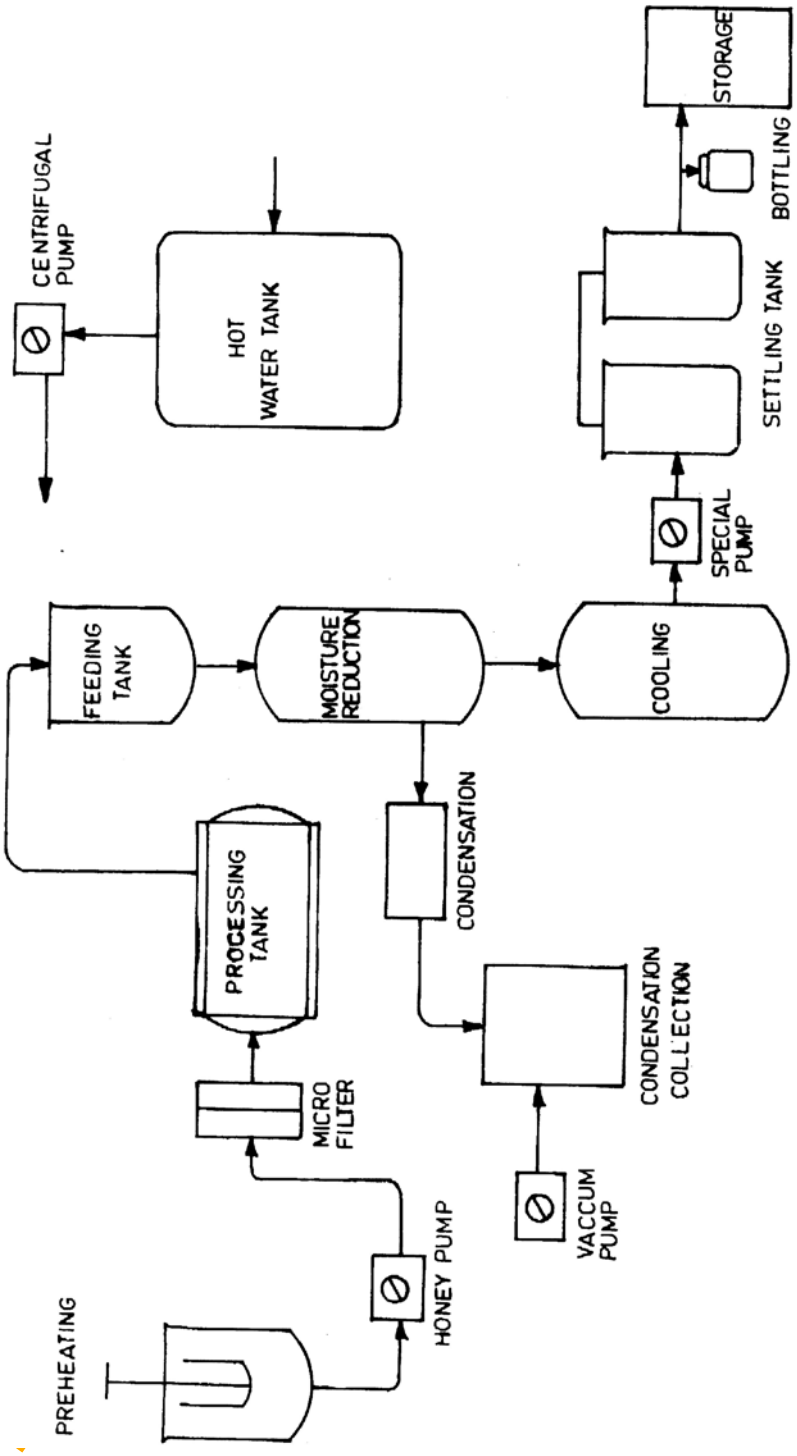


Figure 2 — Layout of honey process-cum moisture-reduction unit