

DKS 2897

KENYA STANDARD

Propolis – code of practice

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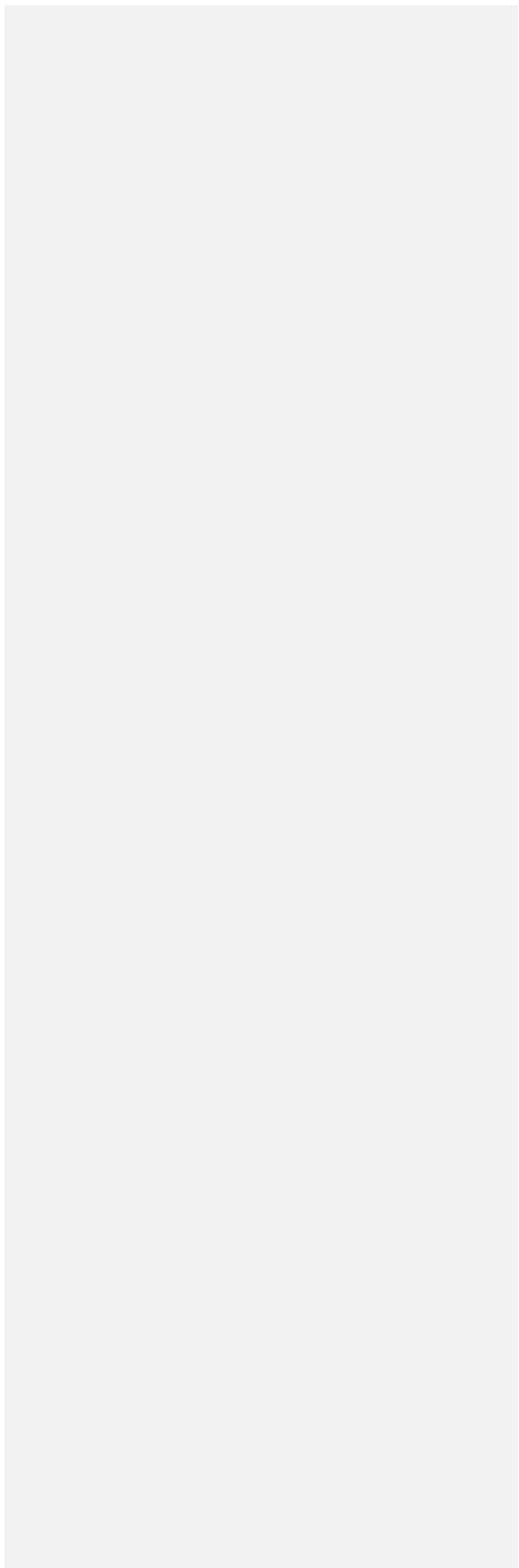
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Foreword

This Kenya Standard was prepared by the Apiculture Products Technical Committee under the guidance of the Standards Projects Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards.

During the preparation of this standard, reference was made to the following documents:

Code of Practice: Processing of Bee Products- Part 2: Good Manufacturing Practice Amendment 3

Receipt and Processing of Honey and Dried Pollen - Records relating to compliance with the Food (Tutin in Honey) Standard 2010

Value added Products from Beekeeping by R. Krell - **FAO AGRICULTURAL SERVICES BULLETIN No. 124** - Food and Agriculture Organization of the United Nations Rome 1996.

The assistance derived from the above sources is highly acknowledged.

Technical Committee Representation.

The following organizations were represented on the technical committee:

- Egerton University
- National Beekeeping Institute
- Kenya Industrial Research & Development Institute
- National Museums of Kenya
- National Public Health Laboratories
- Government Chemists' Department
- Technical University of Kenya
- Janisa Ltd.
- Apiculture Ventures Ltd
- Maynard Farm
- Consumer Information Network
- Kenya Bureau of Standards
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1. INTRODUCTION

~~Propolis is a resinous mixture that honey bees collect from buds and barks of plants together with plant... Propolis is sticky above room temperature and at room temperature it is hard and very brittle.~~

~~-Colour: colour of propolis ranges from yellow to dark brown depending on the origin of the resins. But, even transparent propolis has been reported by Coggshall and Morse (1984).~~

~~Its color varies depending on the botanical source. The most common being dark.~~

~~At temperatures of 250 to 45^oC propolis is soft, pliable and very sticky substance.~~

~~At less than 150 C, and particularly when frozen or at near freezing, it becomes **hard and brittle**. It will remain brittle after such treatment even at higher temperatures. Above 45^oC it will become increasingly sticky and gummy.~~

~~Typically, propolis will become liquid at 60 to 70°C, but for some samples the melting point may be as high as 100°C~~

2. SCOPE AND APPLICATION

Scope: This code shall apply to the harvesting, processing, packaging and placing in the market of all propolis and propolis based products.

3. 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

- I. *KS EAS 39 - Hygiene in the food and drink manufacturing industry - Code of practice.*
- II. *KS ISO 22000 Food safety management systems - Requirements for any organization in the food chain.*
- III. *KS EAS 151 - Hazard analysis critical control points (HACCP).*
- IV. *KS EAS 38 - Labelling of pre-packaged foods*

4. DEFINITIONS **more to be added as deemed necessary by members**

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

Apicultural production unit

A geographic area composed of fields, apiaries, orchards, greenhouses, groups of geographic areas of indigenous and planted forests, with natural and manmade water bodies.

Audit

A systematic and functionally independent examination to determine whether quality and food safety activities and results comply with planned procedures and whether these procedures are implemented effectively and are suitable to achieve objectives.

Authorized officer

A person accredited by the competent authority

Benchmark

A measurable set of variables used as a baseline or reference in evaluating the quality of propolis

Calibration

Determination of the accuracy of an instrument, usually by measurement of its variation from a standard, to ascertain necessary correction factors

Certification

All those actions leading to the issuing of a certificate according to the requirements of the certification scheme.

Certification bodies

Also known as conformity assessment bodies are organizations which provide conformity assessment services such as inspections and certifications to operators or producer groups for standards in context with the requirements established under the above certification guides.

Concentrate

The forms in which chemicals are usually sold, mostly requiring dilution before use.

Concern

An expert judgment on the level of threat to the consumer or the product of a particular hazard.

Consumer

An individual who buys products or services for personal use.

Contamination

Pollution by undesirable substances.

Contaminant

Any substance not intentionally added to food, which is present in such food as a result of the production (including operations carried out in crop husbandry, animal husbandry and veterinary medicine), manufacture, processing, preparation, treatment, packing, packaging, transport or holding of such food or as a result of environmental contamination. The term does not include insect fragments, rodent hairs and other extraneous matter.

Customer

Anyone who purchases products or services from a supplier

Documentation

Is the accumulation, classification and dissemination of information relating to a process or procedure usually in written or electronic form

Exporter

The person/entity that has the ownership of the produce/ product being shipped/exported to the determined destination

Food safety

The assurance that food will not cause harm to the consumer when it is prepared and consumed according to its intended use.

Hazard

A biological, chemical or physical agent or any other property that may cause a product to be unsafe for consumption

Hazardous material

Any material which, at specific levels, has the potential to cause adverse health effects

Medicines

Substances intended for use in the, prevention, mitigation, cure or treatment of a condition or disease, including substances with effect on the central nervous system like sedatives and anesthetics

Non-compliance

A control point in the checklist is not fulfilled according to the compliance criteria.

Packaging

The procedures for protecting the products by using suitable materials ~~packages~~ that do not compromise quality and integrity of product.

Processing facility

Any facility for handling harvested propolis (Produce) without changing its form

Produce

Predominantly raw **propolis**.

Producer group.

This is a set of apiarists who have come together for purposes of marketing their produce (propolis) under a common quality management system.

Personal protective equipment

Clothing and equipment selected or designed to protect the wearer against contamination and injury arising from bee stings.

Processing

Any process that is carried out on a product leading to value addition.

Traceability

Is the ability to trace a product from any given point back through all stages to its origin.

Volatility

The property of substances to evaporate readily even at low temperatures.

Waste

All items that a processor no longer has any use for, which they either intend to get rid of or have already discarded.

The operator shall, process and pack produce in premises registered by the relevant competent authority.

4. Production**4.1 Composition**

The major compounds in propolis are resins composed of flavonoids and phenolic acids or their esters, which often form up to 50% of all ingredients. The variation in beeswax content also influences the chemical analysis. In addition, it must be said that most studies do not attempt to determine all components, but limit themselves to a class of chemicals or a method of extraction. **Complexity of propolis varies from plant to plant**

4.2 Collection, harvesting and receipt of Propolis.**4.2.1 Collection**

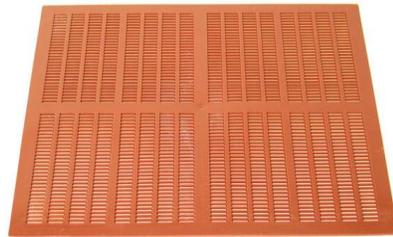
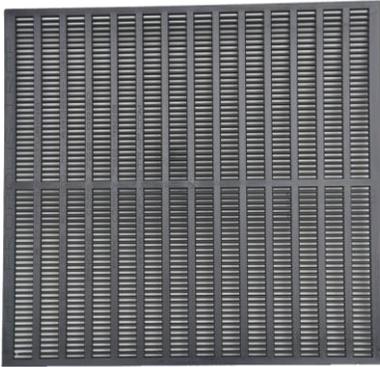
Propolis is collected by bees for use in sealing off unwanted gaps and spaces in their hives. Humans can intervene and harvest the propolis from the hives as described below:

4.2.2 Harvesting

Propolis harvesting is done by scrapping off excess propolis from top bars/ frames or through the use of propolis collectors.

Propolis is scrapped off from gaps intentionally left in the hive for bees to seal using propolis that they collect.

PROPOLIS HARVESTING EQUIPMENT



Quality

Durable molded plastic construction. 19 3/4" x 16 1/8" x 1/8" (502mm x 410mm x 3.2mm).

Convenience

Easy to harvest – Simply put trap in freezer, then put frozen trap in collection bag. Frozen propolis pops right out and into bag when the trap is flexed. Easy to clean!

Profitable

Reusable. Cleaner and longer-lasting than wood traps

Propolis containers should be kept out of the sun to prevent 'sweating' and melting of propolis chips.

4.2.2 Receipt of propolis

Processors of propolis should require their suppliers to have an effective pest control system in place at the hive and storage facilities to minimize contamination of propolis from pests.

The presence in propolis of dead bees, wax, insect parts, wood, dust and other foreign matter in propolis must be minimized.

The operator must ensure that **propolis** received for processing is fit for intended purpose. Each batch should be labelled as to be source and batch number and date.

4.3 Processing.

4.3.1 General

Processing is done to convert raw Propolis to a form suitable for consumption or use.

To prevent deterioration propolis should be processed soon after collection. The operator must ensure that propolis received for processing is fit for the intended purpose.

4.3.2 Cleaning

Propolis must not be contaminated with bees and pests such as wax moths and ants. **Propolis** must be cleaned to ensure that the product is free of all foreign matter such as dead bees, wax, insect parts, wood, dust, and other debris.

A simple solvent using a 70 % ethanol can be used to clean the raw propolis. Suitable sieves can be used to filter out unwanted materials.

4.3.3 Freezing

Fresh propolis must be placed in a fridge without unnecessary delay especially if the propolis is freshly harvested.

Propolis should be frozen at 5°C for at least 48 hours to destroy wax moth and ease removal and grinding of the same.

The sheet with propolis attached is collected and kept in a fridge for a short time, **in order to** harden. The sheet is then bent to break off the propolis, which is then collected.

5.0 Hygiene requirements

5.1 Hygiene of staff & environment.

5.1.1 Personnel hygiene

A personal hygiene policy should be established and implemented to ensure that **propolis** is not contaminated **through improper handling**. Personnel shall wear special working clothes including head gear of washable material, and the personnel shall be guided so that each individual carries out his particular work as correctly, effectively and hygienically as possible. In this connection, the **health worker** shall explain the necessity of frequent hand washing and disinfection during work and especially after visiting the toilet.

Operators shall ensure that all processing handlers are periodically examined medically (every six months) and issued with a Food Handlers Medical Certificate.

All personnel working in the Processing areas must be conversant with the **personal? written instructions for acceptable personal hygiene which should be visibly displayed at appropriate areas and enforced.**

5.2 Handling

HACCP principles should be used to set up a system of managing product quality. A risk assessment or own firm inspection shall be done when determining the process flow and its associated systems. This assessment shall consider areas where health hazards to the produce may occur and also areas where quality aspects of the produce are likely to be affected. This shall include preventing contamination from foreign bodies such as pieces of this shall include preventing contamination from foreign bodies such as dead bees, wooden materials, grass, **sand and stones**. These assessments shall be documented and periodically updated.

A personal hygiene policy should be established and implemented to ensure that propolis is not contaminated during handling:

- a) Written instructions for acceptable personal hygiene should be visibly displayed at appropriate areas and enforced.
- b) Visitors to manufacturing and storage areas should be sensitized on hygiene practices and wear protective clothing as appropriate.

- c) A documented and effective training program will be in place to ensure that employees, contractors and sub-contractors are competent in assigned duties, and are conversant with hygiene, accidents, and emergency procedures and any other issue critical to food safety.
- d) The firm production unit shall have a documented hygiene procedure/protocol for handling of product premised on the basis of a risk assessment and workers should be trained and evidence availed. There shall be a regular hygiene risk assessment of harvesting operations.
- e) The containers, harvesting tools and other harvesting equipment that are continuously used must be appropriately cleaned, disinfected and maintained in line with the hygiene procedures/protocols. A planned washing program shall ensure that produce harvest containers are cleaned, and free from contamination.
- f) Cleaning water shall be free from microbial, heavy metal or other foreign body contaminants and where possible recycled and treated before reuse. Procedures and training programs shall ensure that all workers involved in handling of produce observe high standards of personal hygiene. Personal hygiene facilities including field toilets with hand washing facilities shall be provided and kept clean.
- g) To avoid contamination of product, field supervisors shall ensure that field workers involved in handling of product are in good health and that field workers with communicable diseases are not knowingly employed in fields operations. Employees shall be instructed to report to the supervisor if they are suffering from any illness either on arrival for work or during working hours.
- h) Behavioral practices such as Smoking, eating, chewing and drinking shall not be permitted in the immediate vicinity of harvesting, grading, packing, or storage operations. Signs shall be displayed to this effect.
- i) Documented and effective training program will be in place to ensure that employees are competent in the assigned duties, and are conversant with hygiene, procedures and any other issue critical to food safety.

5.2 Contaminants

Propolis must not be contaminated with rodent droppings and pests such as wax moths and ants.

Processors of propolis should ensure that their suppliers have an effective pest control system in place at the hive and storage facilities to minimize contamination of propolis from pests.

The presence of rodent / bird droppings indicates that there is a hole in the trap or hive, or container is being contaminated during storage.

The presence in propolis of dead bees, wax, insect parts, wood, dust and other foreign matter in pollen must be minimized.

5.3 Product integrity

Operators shall ensure the integrity of product consignment throughout the handling phases including storage, transportation, repackaging where necessary, and loading into a freight vessel.

5.4 Incompatible goods

All incompatible items incompatible with produce including cleaning agents, lubricants among others, shall be stored in designated areas away from product to prevent taint, ethylene damage or cross contamination of product.

6.0 Quality control and monitoring systems

6.1 Quality control

The operator shall have a quality assurance system. Quality control unit shall be within the vicinity of the processing house and shall be equipped with quality control facilities, equipment, procedures, standards and records as required.

All measuring devices shall have the necessary accuracy as required for inspection purposes. All equipment used for weighing, sizing, temperature monitoring or any other measuring devices shall be calibrated regularly and calibration records maintained.

6.2 Traceability and inventory control

There must be a system in place for the identification of raw materials and products, and documentation that will allow any finished product to be traced back to the supplier and the apiaries that the bee product was sourced from; and to the next person or company that the product is transferred to for further processing, packing, or storage; distributed to; or sold to.

All outgoing products must be clearly identified and accompanied by appropriate documentation.

Inventories must be maintained for all raw materials (e.g. incoming propolis,) and finished products, including any non-compliant materials and products.

Commented [o1]: Records Management.

6.3 Records Management

6.3.1 Records

Records containing the following information must be kept:

- a. *Apiarist and beekeeper statements* (harvest declarations) or equivalent records
- b. Records of the weight, date of harvesting and delivery, location of origin, name and address of apiarist
- c. Records for identifying products and establishing traceability.
- d. Records of data showing non-compliance with the quality requirements specified in the quality system shall be followed up with a written account of corrective measures taken.

7. Construction of **processing** house

Construction of the processing house shall be such as to prevent the entry of domestic animals, insects, birds, rodents, among others. Effective control measures shall be in operation and be fully documented.

Floors, doors and wall surfaces shall be made of impervious, non-absorbent, non-toxic, washable materials, which are easy to clean and disinfect. Floors shall be durable and allow easy drainage without leaving wet areas. Windows and doors shall open and close easily.

Ceiling and overhead fixtures shall be designed, constructed and finished to prevent the accumulation of dirt, growth of undesirable molds, shedding of paint flakes or particles and also reduce condensation.

Windows and other openings shall be constructed and finished to prevent the accumulation of dirt. Those that can be opened to the outside environment shall be fitted with insect proof screens of appropriate mesh size.

There shall be a glass and hard plastics handling policy to govern their use within the premises whenever they are used.

The use of glass shall be avoided. Where glass is used, there shall be a form of screening to prevent any broken glass contaminating the produce. All use of glass (windows, lights etc.) shall be recorded and a system of inspection implemented to ensure that any breakages are rectified.

Lighting over inspection, grading and cold store areas shall be adequate to allow effective inspection of produce. The processing house shall have adequate ventilation in order to provide adequate air circulation and temperature control. The height of grading working tables and other facilities for work shall be appropriate for the comfort of the workers. Loading and dispatch areas shall be roofed and proofed so as to prevent the nesting of birds.

8. Personal protective equipment

As appropriate, all workers should be provided with personal protective equipment as per the requirements of the Occupational Safety and Health Act (2007) Cap 514 Laws of Kenya.

Visitors should wear appropriate, protective clothing and adhere to other hygiene provisions in this code.

No visitors should be allowed in the Processing areas.

9. Packaging and labelling

9.1 Packaging

Propolis should be packed in food grade material ~~and in a manner~~ that will preserve the product integrity.

9.2 Labelling

Labelling of packages of propolis should be done in accordance with the requirements stipulated in KS *EAS 38, Labelling of pre-packaged foods*) and shall include the following:

- a) Name of the product
- b) Name-bee species from which the propolis is derived
- c) name, location and address of ~~manufacturer;~~ processor;
- d) net weight, in g or kg;
- e) date of production/packaging
- f) expiry date;
- g) batch number;

- h) storage conditions instructions;
- i) country / geographic region of origin
- j) Labeling, presentation, and advertising must not attribute to food supplements the property of preventing, treating or curing a human disease, or refer to such properties. Food supplements are meant to benefit health. Their label can bear approved health and/or nutritional claims.
- k) The label on a package of **propolis** must meet the general labeling requirements under the animal products act 1999 and the food standards code

9.3 Allergen information

Food standard **KSEAS38** requires the label on a package of **propolis** to include an advisory statement to the effect that the product may contain substances(bee **pollen**) which may cause severe allergic reactions.

9.4 Monitoring

Compliance to documented procedures must be regularly checked by the responsible person.

Observations from monitoring and any corrective action taken (including restoration of control, product disposition and prevention of recurrence).

PUBLIC REVIEW DRAFT

