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Page: 1/2

Committee on Sanitary and Phytosanitary Measures

Original: English

**NOTIFICATION**

1.	<b>Notifying Member:</b> <u>KENYA</u> <b>If applicable, name of local government involved:</b>
2.	<b>Agency responsible:</b> Kenya Bureau of Standards
3.	<b>Products covered (provide tariff item number(s) as specified in national schedules deposited with the WTO; ICS numbers should be provided in addition, where applicable):</b> Fruits. Vegetables (ICS code(s): 67.080)
4.	<b>Regions or countries likely to be affected, to the extent relevant or practicable:</b> <input checked="" type="checkbox"/> All trading partners <input type="checkbox"/> Specific regions or countries:
5.	<b>Title of the notified document:</b> DKS 1758-2:2025 Horticulture Industry — Code of Practice, Part 2: Fruits and Vegetables. <b>Language(s):</b> English. <b>Number of pages:</b> 34 <a href="https://members.wto.org/crnattachments/2025/SPS/KEN/25_02756_00_e.pdf">https://members.wto.org/crnattachments/2025/SPS/KEN/25_02756_00_e.pdf</a>
6.	<b>Description of content:</b> This Draft Kenya Standard specifies the requirements for good practices for production and handling of fresh fruits, vegetables, herbs and spices. It applies to all operators in the industry including but not limited to: growers, propagators, consolidators, and transporters.
7.	<b>Objective and rationale:</b> <input checked="" type="checkbox"/> food safety, <input type="checkbox"/> animal health, <input checked="" type="checkbox"/> plant protection, <input type="checkbox"/> protect humans from animal/plant pest or disease, <input type="checkbox"/> protect territory from other damage from pests.
8.	<b>Is there a relevant international standard? If so, identify the standard:</b> <input type="checkbox"/> Codex Alimentarius Commission (e.g. title or serial number of Codex standard or related text): <input type="checkbox"/> World Organization for Animal Health (OIE) (e.g. Terrestrial or Aquatic Animal Health Code, chapter number): <input type="checkbox"/> International Plant Protection Convention (e.g. ISPM number): <input checked="" type="checkbox"/> None <b>Does this proposed regulation conform to the relevant international standard?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <b>If no, describe, whenever possible, how and why it deviates from the international standard:</b>

<p><b>9. Other relevant documents and language(s) in which these are available:</b></p> <ol style="list-style-type: none"> <li>1. Guidelines for emergency measures in cases of pesticide poisoning — GIFAP/GCPF</li> <li>2. Guidelines for personal protection when using pesticides in hot climates — GIFAP/GCPF.</li> <li>3. Guidelines for the avoidance, limitation and disposal of pesticide waste on the farm — GIFAP/ GCPF.</li> <li>4. The Workmen's Compensation Act Chapter 236 of the Laws of Kenya</li> <li>5. Guidelines for the Safe and Effective use of Pesticides (GIFAP), 2003</li> <li>6. Labour Institutions Act</li> <li>7. Labour Relations Act</li> </ol>
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<p><b>11. Proposed date of entry into force:</b> <input type="checkbox"/> Six months from date of publication, and/or (dd/mm/yy): To be determined.  <input checked="" type="checkbox"/> Trade facilitating measure</p>
<p><b>12. Final date for comments:</b> <input checked="" type="checkbox"/> Sixty days from the date of circulation of the notification and/or (dd/mm/yy): 15 June 2025  <b>Agency or authority designated to handle comments:</b> <input type="checkbox"/> National Notification Authority, <input checked="" type="checkbox"/> National Enquiry Point. Address, fax number and e-mail address (if available) of other body:  Kenya Bureau of Standards  WTO/TBT National Enquiry Point  P.O. Box: 54974-00200, Nairobi, Kenya  Tel: +(254) 020 605490  +(254) 020 605506/6948258  Fax: +(254) 020 609660/609665  E-mail: <a href="mailto:info@kebs.org">info@kebs.org</a>  Website: <a href="http://www.kebs.org">http://www.kebs.org</a></p>
<p><b>13. Text(s) available from:</b> <input type="checkbox"/> National Notification Authority, <input checked="" type="checkbox"/> National Enquiry Point. Address, fax number and e-mail address (if available) of other body:  Kenya Bureau of Standards  WTO/TBT National Enquiry Point  P.O. Box: 54974-00200, Nairobi, Kenya  Tel: +(254) 020 605490  +(254) 020 605506/6948258  Fax: +(254) 020 609660/609665  E-mail: <a href="mailto:info@kebs.org">info@kebs.org</a>  Website: <a href="http://www.kebs.org">http://www.kebs.org</a></p>

**KENYA STANDARD**

**DKS1758-  
2:2025**

ICS 67.080

**2nd Edition**

# **Horticulture industry — Code of Practice**

**Part 2:**

**Fruits and Vegetables**



**Kenya Bureau of  
Standards**

Standards for Quality life

## **TECHNICAL COMMITTEE REPRESENTATION**

The following organizations were represented on the Technical Committee:

Agriculture Food and Fisheries Authority — Horticultural Crops Directorate Kenya Flower Council (KFC)  
Kenya Plant Health Inspectorate Service (KEPHIS)  
Ministry of Agriculture, Livestock and Fisheries — State Department of Agriculture USAID Kenya Horticulture Competitiveness Project  
Consumer Information Network Institute of Packaging  
Fresh Produce Exporters Association of Kenya Kenya Institute of Food Science and Technology  
University of Nairobi — Department of Plant Science and Crop Protection Pest Control Products Board Kenya  
Bureau of Standards — Secretariat

## **REVISION OF KENYA STANDARDS**

In order to keep abreast of progress in industry, Kenya Standards shall be regularly reviewed. Suggestions for improvements to published standards, addressed to the Managing Director, Kenya Bureau of Standards, are welcome.

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**KENYA STANDARD**

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2:2025**

ICS 67.080

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# **Horticulture industry — Code of Practice Part 2:**

## **Fruits and Vegetables**

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## **Foreword**

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

Kenya Bureau of Standards (KEBS) has established Technical Committees (TCs) mandated to develop Kenya Standards (KS). The Committees are composed of representatives from the public and private sector organizations in Kenya.

Kenya Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. Draft Kenya Standards are circulated to stakeholders through the KEBS website and notifications to World Trade Organization (WTO). The comments received are discussed and incorporated before finalization of the standards, in accordance with the Procedures for Development of Kenya Standards.

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

This code stipulates the hygienic and safety requirements during the production, handling and marketing of Fruits, vegetables, herbs and spices. The standard also considers the safety provisions for consumers and workers in the industry. The recommendations made in the code target production and marketing of quality and safe horticultural fresh produce while ensuring environmental sustainability.

During the development, the code was harmonized with existing International Codes on good agricultural practices and guidelines. This is intended to enhance farm assurance systems and compliance to the relevant Laws of Kenya.

In the preparation of this code of practice, reference was made to the following sources

Guidelines for emergency measures in cases of pesticide poisoning — GIFAP/GCPF. Guidelines for personal protection when using pesticides in hot climates — GIFAP/GCPF.

Guidelines for the avoidance, limitation and disposal of pesticide waste on the farm — GIFAP/ GCPF.

World Health Organization (WHO) — Toxicology Ratings.

The Workmen's Compensation Act Chapter 236 of the Laws of Kenya.

Guidelines for the Safe and Effective use of Pesticides (GIFAP), 2003.

Acknowledgement is hereby made for the assistance derived from these sources.

## Horticulture industry — Code of practice

### Part 2:

### Fruits and vegetables

#### 1 Scope

This Draft Kenya Standard specifies the requirements for good practices for production and handling of fresh fruits, vegetables, herbs and spices.

It applies to all operators in the industry including but not limited to; growers, propagators, consolidators, and transporters.

#### 2 Normative references

The following referenced documents referred to in the text in such a way that some or all of their content constitutes requirements 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

*Labour Institutions Act*

*Labour Relations Act*

#### 3. Terms and definitions

##### 3.1

##### **accreditation**

third-party attestation related to a conformity assessment body conveying formal demonstration of its competence to carry out specific conformity assessment tasks

##### 3.2

##### **accreditation body**

organization responsible for assessing and accrediting certification bodies against ISO/IEC 17065 and that is a member of the International Accreditation Forum (IAF) and is a signatory of the Multi-Lateral Agreement (MLA) for product certification

##### 3.4

##### **agricultural production unit**

a geographic area composed of fields, yards, plots, orchards, greenhouses, group of geographic areas of restricted fresh water and/or restricted sea water activities and/or any other area/location/transport used for production of registered products

##### 3.5

##### **Antidote**

medicine given to counteract poisoning

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**3.7****authorized officer**

a person accredited by the competitive authority

**3.8 benchmark**

a measurable set of variables used as a baseline or reference in evaluating the performance of schemes

**3.9****biodiversity**

the variability among living organisms from all sources, including, 'inter alia', terrestrial, marine, and other aquatic ecosystems, and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems". Biodiversity is of main relevance during EIA and EMPs

**3.10****breeder**

person or entity which commercially develops new varieties of plants using scientific techniques from existing varieties or wild relatives

**3.11****bund**

a barrier on the surface of the soil/ground/floor to prevent runoff, spillage and soil erosion

**3.12****calibration**

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

**3.13****certification**

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

**3.14****certification bodies**

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

**3.15****chilling**

a process of cooling produce to a temperature near that of melting ice

**3.16****cold chain**

the movement of fresh produce from the field to the end destination at the lowest achievable temperatures without damaging the produce

### **3.17**

#### **concentrate**

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

### **3.18**

#### **concern**

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

### **3.19**

#### **consolidator**

entity/person collecting or receiving and aggregating and documenting produce, cold chain handling, repackaging where applicable and conveying of the produce to shippers/cargo handlers

### **3.20**

#### **consumer**

an individual who buys products or services for personal use

### **3.21**

#### **contamination**

pollution by the undesirable substances such as presence of pesticides, pests, off farm and on farm inputs such as irrigation water

### **3.22**

#### **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.

### **3.23**

#### **cooling**

a process of reducing temperature to well below ambient atmosphere

### **3.25**

#### **crop rotation**

a crop rotation system means that the crops on a certain plot are following other crops according to a predefined plan. Normally the crops are changed annually, but they can also be multi-annual. It usually followed for the purpose of increasing soil fertility and maintaining good yields and forms part of Integrated Pest Management (IPM)

### 3.26

#### **cultivation**

any agricultural action or practice used by growers to allow and improve the growing conditions of fresh fruits or vegetables grown in the field (with or without cover) or in protected facilities (hydroponic systems, greenhouses)

### 3.27

#### **customer**

anyone who purchases products or services from a supplier

### 3.28

#### **dilution**

the addition of water to reduce the concentration of a pesticide before use

### 3.29

#### **documentation**

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

### 3.30

#### **dose rate**

the amount of pesticide recommended to be used on a given area of crop, expressed, e.g. in litres or kilograms per hectare

### 3.31

#### **Environmental Impact Assessment (EIA)**

detailed study based on environmental assessment (EA) to determine the type and level of effects an existing facility is having, or a proposed project would have, on its natural environment. sensitive areas.

### 3.32

#### **erosion**

the mechanical movement of the land surface by wind, rain, running water or moving ice resulting in the wearing away of land or soil

### 3.33

#### **exporter**

the person/entity who has the ownership of the produce being shipped/exported to the determined destination

### 3.34

#### **food safety**

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

### 3.35

### **food grade material**

material, made of substances which are safe and suitable for the intended use and which will not impart any toxic substance or undesirable odour or flavour to the product

### **3.35**

### **fresh produce**

any products either whole or prepared, which have not undergone any post-harvest transformation

### **3.36**

### **fumigant**

volatile liquid or gas to kill pests including but not limited to insects, nematodes, fungi, bacteria, weeds, and rodents

### **3.37**

### **greenhouse**

light structure with the sides and roof mainly of glass or transparent material for the growing of plants in a controlled environment

### **3.38**

### **Genetically Modified Organisms (GMOs)**

organisms (i.e. plants, animals or microorganisms) in which the genetic material (DNA) has been altered in a way that does not occur naturally by mating and/or natural recombination.

### **3.39**

### **hazard**

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

### **3.40**

### **hazardous material**

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

### **3.41**

### **Integrated Pest Management (IPM)**

consideration of all available pest control techniques and subsequent integration of appropriate measures that discourage the development of pest populations and keep plant protection products and other interventions to levels that are economically justified and reduce or minimize risks to human health and the environment

### **3.42**

### **manure**

decomposed or otherwise treated materials used to maintain or improve plant nutrition and soil properties

**3.43****medicines**

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

**3.44****non-compliance**

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

**3.45****operator**

individual producers of primary agricultural products including propagators and breeders; farmer groups, associations and cooperatives; processors and packers; trading companies (including exporters), shippers, consolidators and cargo handlers

**3.46****organic fertilizer**

organic fertilizers mean materials of animal or plant origin used to maintain or improve plant nutrition and soil properties. They may include manure, compost and digestion residues

**3.47****out grower**

one who grows fresh produce under contract to a third party

**3.48****packaging**

the procedures for protecting the products by a wrapper, a container, box or other suitable device

**3.49****packhouse**

any facility for handling harvested produce without changing its form

**3.50****pest**

any species, strain or biotype of plant, animal, or pathogenic agent, injurious to plants or plant products

**3.51**

**pest control products**

a product, device, organism, substance or thing that is manufactured, represented, sold or used as a means for directly or indirectly controlling, preventing, destroying, attracting or repelling any pest

**3.52**

**post-harvest treatments**

are those treatments, usually chemical, applied to fresh produce after harvesting in order to preserve or enhance shelf life or keeping quality

**3.53**

**pre-harvesting intervals**

the period of time which should elapse between the application of a pesticide and the harvesting of a crop

**3.54**

**produce**

fresh fruits,vegetables,herbs and spices the harvested part of fruits, vegetables, herbs and spices

**3.55**

**producer group**

this is a set of growers who have come together for purposes of marketing their produce under a common quality management system

**3.56**

**Product**

processed fruits, vegetables, herbs and spices

**3.56**

**personal protective equipment**

clothing and equipment selected or designed to protect the wearer against contamination and injury

**3.57**

**potable water**

water which meets the quality standards of drinking water as specified in KS 459.

**3.58**

**processing**

any process that is carried out on a produce leading to value addition

**3.59****propagator**

person or entity which multiplies plants while preserving their essential genetic characteristics for commercial or own use

**3.60****propagation facility**

a place where the plants are multiplied for commercial or own use

**3.61****risk**

is the probability of a hazard occurring

**3.62****shipper/cargo handler/freight forwarder**

one who receives, handles and loads produce into a freight vessel for destination delivery in desired conditions as per this standard

**3.63****spray mixture**

Pesticide concentrate diluted with water or sometimes oil

**3.64****substrate**

medium, other than soil used for growing crops.

**3.65****traceability**

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

**3.66****visitors**

person or persons visiting a farm site or buildings who is or are not employees or otherwise connected with the said farm

**3.67**

**volatility**

the property of chemicals to evaporate readily even at low temperatures

**3.68**

**waste**

all items that people no longer have any use for, which they either intend to get rid of or have already discarded

## **4 Management system)**

**4.1.1** A Management System shall be audited at least annually. The audit shall be documented and made available for inspection by recognized institutions when required.

**4.1.2** The policy and procedure of addressing customer complaints shall be documented and implemented.

**4.1.3** non-compliance with the requirements specified in the management system shall be recorded and corrective measures taken.

**4.1.4** Operators shall ensure that employees are given information, instruction, training and guidance to implement this code of practice.

### **4.2 Operators.**

**4.2.1** The operator shall be responsible for the compliance, day to day management and implementation of the code of practice

**4.2.2** The operator shall demonstrate a commitment to continual improvement of their management system to ensure compliance to this code of practice.

**4.2.3** The operator shall provide access to third parties carrying out external verification of compliance to the requirements of this code of practice.

**4.2.4** The operator shall ensure compliance with specific customer requirements.

**4.2.5** The operator shall develop an environmental management plan to cover all aspects under the code of practice.

### **4.3 Input procurement**

**4.3.1** The operator shall have a policy providing for procurement of inputs from registered and/or licenced suppliers. The policy shall be understood and implemented by those involved in the procurement process

**4.3.2** The operator shall have a policy on the use of Genetically Modified Organisms (GMOs).

## **5 Traceability**

**5.1** The operator shall put in place an effective traceability system.



## 6 Record keeping

6.1 Operators shall ensure that records are accurate, retrievable, legible and up to date.

6.2 Records shall be maintained for a minimum period of two years

## 7 Planting materials

7.1 The operator shall procure certified planting materials from certified sources.

### 7.2 Planting material treatments and dressings

7.2.1. Where and when treatments are used by the grower, there shall be justifications for their use.

7.2.2. Planting material treatment products shall be registered for use on the crop.

7.2.3. Advice on the use of planting material treatment products shall be given by a competent person.

7.2.4. Where treatment products are used, pest control products requirements shall apply.

## 8 Site history and management

### 8.1 Site selection

8.1.1 A risk assessment shall be done taking into account potential contaminants, type of soil, erosion, quality and level of ground water, availability of sustainable water sources, prior use of land, and records maintained.

8.1.2 There shall be a corrective action plan giving strategies on how to deal with identified controllable risks in new agricultural sites.

8.1.3 The site shall not be used for agricultural activities when the risk assessments identify non- controllable aspects that are critical to human health and the environment.

8.1.4 Farm plans and activities shall be, drawn and shall indicate staff housing, toilets, drinking water points, waste disposal sites, wastewater treatment points, utility stores and social facilities

8.1.5 A recording system shall be established for each field, orchard or green house such that each is uniquely identified with a code.

### 8.2 Crop rotation

**8.2.1** Where rotations are practiced, there shall be a rotation plan or program and where not, there, shall be documented, justification.

## **9 Soil and substrate management**

**9.1** The operator shall carry out a soil/ substrate analysis.

**9.2** Based on the results of the soil/ substrate analysis, a soil/substrate management plan shall be developed.

### **9.3 Cultivation**

**9.3.1** The method of tillage shall be one that preserves soil structure and minimizes soil compaction.

## **10 Soil erosion**

**10.1** The operator shall put in place measures and practices that minimize the risk of soil loss from the farm

**10.2** The operator shall employ practices that improve soil drainage.

### **10.3 Soil and substrate fumigation**

**10.3.1** Where soil fumigation is required, only chemicals registered by a competent authority shall be used in accordance with the instructions.

**10.3.1** Where used, records shall be kept

### **10.4. Substrates**

**10.4.1** Substrates used shall be from certified sources.

## **11. Plant nutrition and fertilizer use**

**11.1.** The operator shall develop a fertilizer use plan based on soil, water and/or plant tissue analysis. The plan shall be based on integrated soil fertility management and fertilizer use risk assessment.

**11.2** There shall be no direct drainage to any water source of runoff water from land where fertilizer has been applied.

**11.3** The person in charge of fertilizer application shall be competent.

### **11.4 Records of application**

**11.4.1** Records of fertilizer application shall be kept.

**11.4.2** A work instruction for the fertilizer application shall be clearly written and signed by a competent person able to interpret the crop soil analysis. The instruction shall indicate who, when, where and how to apply.

## **11.5 Application equipment**

**11.5.1** Fertilizer application equipment shall be well maintained, routinely verified and where applicable, calibrated to ensure accurate delivery.

## **11.6 Nutrient requirements**

**11.6.1** The operator shall conduct fertilizer risk assessment.

**11.6.2** Fertilizer application shall be based on the risk assessment, soil analysis and calculation of the nutrient requirements of the crop.

## **11.7 Fertilizer storage**

**11.7.1** Fertilizers shall be stored in structures which meet minimum requirements and conditions.

**11.7.2** The fertilizer shall not be placed directly on the floor.

**11.7.3** The store shall be located away from water source.

**11.7.4** An up-to-date fertilizer stock inventory shall be kept.

**11.7.5** Fertilizers shall be stored separately from pest control products, acids, produce, food and feedstuffs, planting materials and any living quarters.

## **11.8 Organic fertilizers**

**11.8.1.** Where organic fertilizer is used a documented risk assessment shall be in place.

**11.8.2.** Organic fertilizer shall be stored in an appropriate manner to contain the risk of contamination to the environment.

**11.8.3.** Organic fertilizer application records shall be maintained.

**11.8.4.** Based on risk assessment, analysis shall be carried out by an accredited laboratory

**11.8.5.** Untreated human sludge shall not be used on the farm.

## **12. Irrigation and fertigation**

**12.1** The operator shall carry out a risk assessment of irrigation/fertigation water.

**12.2** There shall be a documented irrigation/fertigation plan based on the risk assessment.

**12.3** The operator shall maintain irrigation records.

**12.4** Irrigation water shall be obtained from sustainable sources.

**12.4** Irrigation personnel shall be trained and competent.

**12.6** The operator should undertake water conservation measures.

## **12.7 Quality of irrigation water**

**12.7.1.** Water used for irrigation shall be analysed based on the risk assessment.

**12.7.2** The results of such analyses shall be well documented.

**12.7.3** Untreated sewage water and effluent shall not be used for irrigation purposes.

## **13. Crop protection**

### **13.1 Pest and disease management**

**13.1.1** The operator shall have a documented crop protection plan.

**13.1.2** Integrated Pest Management

**13.1.3** The operator shall be trained and demonstrate competence on Integrated Pest Management (IPM)

**13.1.4** The operator shall have a documented IPM plan and procedures.

**13.1.5** The operator shall demonstrate knowledge on pests and diseases of the crop.

**13.1.6** The operator shall demonstrate implementation of the IPM plan.

**13.1.7** The operator shall monitor the pest and diseases in the farm/facility.

**13.1.8** Tools and equipment used shall be disinfected as per the crop protection risk assessment.

**13.1.9** Water used in mixing of crop protection products, shall be free from physical, microbial and chemical contaminants.

**13.1.10** Each operator involved in crop protection, shall use appropriate Personal protective equipment.

### **13.2 Pest control products use**

**13.2.1** The operator shall conduct, document a pest control products risk assessment and demonstrate an understanding of the associated risks.

### **13.3 Selection of pest control products**

**13.3.1** Pesticides used shall comply with the local regulations.

**13.3.2** The operator shall consult regularly and be aware of any restrictions on pesticides used and shall have documentations on such restrictions.

**13.3.3** The technical person responsible for pesticide choice and application shall be competent by training.

**13.3.4** There shall be a justification to show that the choice of pesticide is appropriate for the intended purpose.

**13.3.5** Over reliance on pesticides with similar mode of action shall be avoided where repetitive applications are required to eliminate pest resistance.

**13.3.6** The application rate of pesticides per given area and the dilution rates shall comply with recommendations on the product label. Where a choice exists, a product that is safer to handle and has less environmental impact shall be chosen.

## **13.4 Procurement of pest control products**

**13.4.1** Purchasing and use of pest control products shall only be done for products that are

- a) Registered for use on the crop,
- b) From licensed distributors.

**13.4.2** Purchase receipts of all pest control products shall be maintained for at least 12 months

**13.4.3** A record of all pest control products used on the farm shall be maintained

## **13.5 Storage of pest control products,**

**13.5.1** Pest control products stores shall be licensed by the competent authority

**13.5.2** Pest control product shall be stored in suitably constructed stores which meet minimum requirements and conditions.

**13.5.3** Only approved pesticides in original labelled containers shall be held in the store. No other commodities shall be stored with pesticides.

**13.5.4** Pesticides shall be kept in a separate room and shall be kept secure from children and animals, foodstuffs, fires, stoves or lamps. In the case of the cupboards, the shelf shall have a front lip to prevent containers from falling out on opening the doors. Access shall be limited to suitably trained and authorized personnel.

**13.5.5** Warning in English, Kiswahili and local language where applicable shall be placed on the outside of the pesticide store. Warnings and/or symbols such as— NO SMOKING, NO NAKED FLAMES among others, shall be displayed both inside and outside, the pesticide store.

**13.5.6** Stock shall be inspected regularly and stock records maintained.

**13.5.7** Storekeepers shall receive training regarding the toxicity of pesticides, their storage, handling and dispensing.

**13.5.8** Written procedures shall be developed for handling events such as accidents, fire, spillage or poisoning of personnel. These should be displayed in languages understood by users in accessible areas.

**13.5.9** Stores shall be equipped with adequate and appropriate firefighting equipment. Maintenance records on fire extinguishers shall be maintained.

**13.5.10** Shelves in stores shall be made of non-absorbent and non-flammable material. Materials to deal with leakage and spillage shall be available in the store. These may include sand, shovel, broom and empty disposal bin.

**13.5.11** There shall be adequate washing facilities near the store.

**13.5.12** The store shall be bunded to contain any spillages and contaminated water used for cleaning or firefighting.

**13.5.13** Drainage shall be to a sump or adequate wastewater treatment facility which shall be situated far from all water sources and does not drain into riparian land. They shall be adequately marked or labelled.

**13.5.14** All personnel working in pesticide stores shall have access to suitable Personal Protective Equipment.

**13.5.15** A pesticides and fertilizers shall be stored separately, and away from detergents or disinfectants.

**13.5.16** A Pesticide store shall be located away from water sources.

## **13.6 Soil fumigation**

**13.6.1** Use of fumigants shall be documented.

**13.6.2** Only pest control products registered by a competent authority shall be used in any production process.

**13.6.3** Pest control products shall be used in accordance with the prescription for purpose fit for use.

**13.6.4** Operators shall keep up to date with the most current list of acceptable pest control products locally and internationally as applicable.

## **13.7 Resistance management**

**13.7.1** Products shall be chosen to avoid over reliance or continued use of any single chemical grouping, thus reducing the emergence of pesticide resistance.

## **13.8 Application conditions**

**13.8.1** Pesticides shall not be applied in adverse weather conditions such as wind, rain or during overhead irrigation.

**13.8.2** Spraying during high mid-day temperatures should be avoided.

### 13.9 Dispensing of pesticides and hazardous chemicals

**13.9.1** There shall be a separate area for dispensing of pesticides and hazardous chemicals fitted with:

- a) a workbench.
- b) running water supply shall be within at least 5 meters from the dispensing areas.
- c) wash basin plus eyebath.
- d) accurate measuring equipment.
- e) suitable containers for pre-mixing of pesticides/chemicals; and
- f) clear marking on all equipment to indicate they are for use with pesticides/chemicals only.

**13.9.2** Adequate and appropriate personal protective clothing and equipment shall be worn by those persons doing the dispensing.

### 13.10. Application of pesticides and protection of workers

**13.10.1** Employers shall ensure that employees are given information, instruction, training and guidance to carry out their work and to be aware of the risks to health from exposure to pesticides and the precautions to be taken.

**13.10.2** Signs to restrict personnel access to area under pesticide application or treated with pesticides shall be displayed.

**13.10.3** All spray operators and supervisors shall be suitably trained on the application and risks of pesticides by a recognized institution or body. A training Schedule for the operators and supervisors shall be established

**13.10.4** All spray operators shall wear personal protective clothing and equipment suitable for the task at hand and this shall be provided by the employer without charge.

**13.10.5** Spray operators shall not wear personal home clothing when spraying. Provision of secure well-ventilated storage shall be provided for personal clothing.

**13.10.6** PPEs shall have designated area for washing, drying and storing. Appropriate dressing rooms and double individual lockers for each worker shall be provided.

**13.10.7** All personnel protective equipment (PPEs) shall be cleaned immediately after use.

**13.10.8** All application equipment shall be cleaned immediately after use. in an area where the rinsing water can be channelled to chemical wastewater treatment facility.

**13.10.9** Protective overalls if continuously used shall be laundered after use and stored in a hygienic well-ventilated location on the farm.

**13.10.10** All staff involved in the use and application of pest control products should have a medical checkup at least twice per year

**13.10.11** Complete documentary records shall be available for audit purposes.

**13.10.12** All equipment used for spraying shall be regularly inspected, well maintained, calibrated and serviced. Any defective equipment shall be repaired and/or replaced immediately and be verified by a competent person.

**13.10.13** Each application shall be accompanied by clear instructions on the specific crop location, where the crop protection application is to be done, the requisite dosage and the application technique signed by the authorizing officer.

**13.10.14** All workers within the vicinity to be sprayed and not wearing protective clothing shall leave the area. Warning signs shall be displayed at greenhouse entry/exit points and field gates stating time and date of application, pesticide being used and indicating when entry will be safe without the use of protective clothing

**13.10.15** Material safety data sheets of all pesticides used shall be kept on file.

**13.10.16** Spray mixing and application shall only be carried out by trained personnel. No expectant and nursing mothers or persons under the age of 18 years shall handle, mix or apply pesticides. Female workers are discouraged from handling pesticides.

**13.10.17** Pesticides with a high leaching potential or high aquatic toxicity shall be not used within 200metres of open water sources, dams, lakes, rivers.

**13.10.18** Documented re-entry policy and procedure shall be put in place as preventive measure to avoid employee's health risks.

**13.10.19** Pesticide application method shall ensure that non target organisms such as bees are not harmed.

**13.10.20** The pre harvest interval shall be stated for all the crop protection products applied and the first harvestable date indicated/recorded.

## **13.11 Pre-harvest intervals**

**13.11.1** The crop protection policy shall provide safeguards to ensure that only pesticides approved for use on the crop are applied in accordance with the label rates and pre-harvest intervals.

**13.11.2** Harvesting procedures shall be documented to ensure pre-harvest intervals are observed.

**13.11.3** The pre-harvest intervals shall be observed for the respective crop chemicals used through use of records such as pest control products application records and the crop harvest dates.

**13.11.4** Regular audits and training shall be conducted to check consistency in the process and underpin the practice.

**13.11.5** For crops that are continuously harvested over an extended period of time, there shall be a plan for the crop protection practice that does not compromise pre-harvest intervals.

## **13.12 Records of application**

**13.12.2** Application records shall be maintained

**13.12.3** Spray records shall be maintained.

**13.12.3** Spray operators' training records shall be maintained.



**13.12.4** An accident and incident diary shall record all accidents and emergency incidences such as spillage, poisoning cases, sicknesses, absences from work and the remedial actions taken.

**13.12.5** Notices shall be posted giving emergency procedures, contact persons and institutions (in case of fire, spillages, and direct contact of chemicals with humans or animals).

**13.12.6** There shall be trained first Aid Personnel within the premises and a record of training kept on file.

**13.12.7** There should be a record of obsolete or expired pesticides and empty containers.

**13.12.8** Other records and documentation to be kept in addition to those required by the laws shall include:

- a) agrochemical stock record;
- b) a list of all the chemicals used in the farm;
- c) a record of disposal of expired pesticides, excess pesticides, pesticide containers shall be kept.

### **13.13 Application equipment**

**13.13.1** Application equipment shall be dedicated for use on fruits and vegetables only.

### **13.14 Disposal of surplus pesticides**

**13.14.1** Written procedures for safe disposal of dilute pesticides and empty containers shall be developed, approved and communicated to all those handling such products. The procedures shall include fail-safe measures to prevent pollution of ground water and soil from leakage or spillage.

**13.14.2** Obsolete and expired pest control products shall be clearly segregated and marked "obsolete and expired pest control products"

**13.14.3.** Disposal of obsolete and expired pest control products shall be done as per the national regulations and records kept.

**13.14.4** Surplus spraying mix and tank washings shall be disposed as per the national regulations

**13.14.5** Disposal sites shall be securely fenced, locked and labelled with warning signs.

**13.14.6** where disposal services are outsourced, the disposal agent shall be approved by NEMA and waste disposal record shall be kept.

### **13.15 Empty pest control products containers**

**13.15.1** All pest control products containers shall not be reused.

**13.15.2** There shall be a secure storage point for empty containers and safe handling system to ensure non-exposure to persons and animals.

**13.15.3** All containers shall be clearly and adequately labelled.

**13.15.4** The disposal system shall respect the legislation governing the same and shall take due regard to the safety of flora and fauna.

### **13.16 Unwanted pest control products**

**13.16.1** There shall be a documented policy regarding redundant products.

**13.16.2** Redundant pest control products shall be labelled, secured and stored separately within the store.

### **13.17 Pesticide residue monitoring**

**13.17.1** The operator shall document a Maximum Residue Limits (MRLs) risk assessment.

**13.17.2** MRLs monitoring shall be conducted based on the MRL risk assessment.

**13.17.3** Operators shall be aware of and have access of up-to-date National Maximum Residue Limits (MRLs) requirements.

**13.17.4** The operator shall provide evidence/records of residue testing done by an accredited laboratory.

**13.17.5** The operator shall establish a written action plan in the event of the Maximum Residue Level (MRLs) being exceeded.

## **14 Harvesting and postharvest handling of produce**

### **14.1 Harvesting and post-harvest hygiene**

**14.1.1** There shall be a documented harvest and post-harvest hygiene risk assessment.

**14.1.2** There shall be a documented hygiene procedure based on the risk assessment.

**14.1.3** All personnel shall receive hygiene training

**14.1.3** Basic hygiene instructions shall be displayed within the produce handling areas.

**14.1.4** Produce contact surfaces shall be of food grade material

**14.1.5** Smoking, eating, chewing and drinking shall not be allowed in produce handling areas.

**14.1.6** Sneezing or coughing over unprotected produce shall not be allowed.

**14.1.7** Personal effects such as jewellery, watches, pins or other items should not be worn or brought into food handling areas if they pose a threat to the safety and suitability of produce.

**14.1.8** Clean toilets and handwashing facilities shall be provided to all personnel, visitors and sub-contractors in the vicinity of their work

**14.1.9** Animals and children shall not be allowed in produce handling areas

**14.1.10** Equipment used for produce handling shall be cleaned, maintained and appropriate for use.

**14.1.11** Produce handling facilities shall comply with relevant national laws.

**14.1.12** Produce handling facilities shall be in good structural condition.

**14.1.13** The area around the produce handling facilities shall be free from waste.

**14.1.14** The produce handling facilities shall not be used for activities not related to handling of produce.

**14.1.15** Produce handling facilities shall be registered by the relevant competent authority.

**14.1.16** Access to produce handling facilities shall be restricted to authorized personnel only.

**14.1.17** The produce handling facilities shall;

- a) prevent entry of domestic animals, insects, birds and rodents
- b) have floors, doors and wall surfaces that are non-absorbent, non-toxic, washable and easy to clean and disinfect.
- c) have floors that are durable and allow easy drainage.
- d) have ceiling and overhead fixtures designed to prevent the accumulation of dirt, moulds, shedding of paint flakes or particles and prevent condensation.
- e) have adequate lighting to allow effective inspection of produce.vi. Have glass lighting covered to prevent contamination of produce in case of shattering
- f) have adequate ventilation
- g) have a separate storage area for non-food items away from produce.

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

**14.1.19** Floor layout shall allow for a smooth flow of produce from reception to finishing area.

**14.1.20** A Loading and dispatch areas shall be roofed and proofed to prevent contamination of produce

## **14.2 Inspection**

**14.2.1** Personnel handling the produce shall be competent and trained to carry out inspection.

**14.2.2** Produce shall be clearly labelled to maintain traceability and integrity.

**14.2.3** The receiving area for the produce shall be adequately lit and equipped with facilities for produce inspection.

**14.2.4** Produce inspection shall be carried out at;

- a) reception at the pack house
- b) quality-control during processing;

- c) final quality check when ready for dispatch;
- d) loading area.

### **14.3 Quality control**

14.3.1 The operator shall have a quality assurance system

14.3.2 All equipment used for weighing, sizing, temperature monitoring or any other measuring devices shall be verified and calibrated where applicable and records maintained.

### **14.4 Produce handling**

14.4.1 Produce at different stages of preparation shall be kept separate.

14.4.2 Produce shall normally be processed on a "First In, First Out" (FIFO)..

### **14.5. Health status**

14.5.1 Personnel working in a produce handling facilities shall undergo medical tests for food handlers every six months.

14.5.1 Where personnel are permitted to continue working, cuts and wounds shall be covered by suitable waterproof dressings.

### **14.6 Personal cleanliness**

14.6.1 Personnel shall always wash their hands;

- a) at the start of produce handling activities.
- b) ii) immediately after using the toilet; and
- c) iii) after handling raw produce or any contaminated material, where this could result in contamination of other produce items; they should avoid handling ready-to-eat produce, where appropriate.

### **14.7 Post-harvest washing**

14.7.1 Water for washing produce shall be potable including recycled Water.

14.7.2 Based on risk assessments, water for post-harvest washing shall be analyzed on a regular basis by a competent laboratory to ascertain its freedom from microbial, chemical and physical contaminants.

14.7.3 Wastewater shall be disposed as per the national regulations.

### **14.8 Post-harvest treatments**

14.8.1 Use of post-harvest treatments shall be justified and documented.

**14.8.2** All post-harvest treatment products used shall be approved by a competent authority.

**14.8.3** The personnel responsible for post-harvest treatments shall be competent by training.

**14.8.4** The batch/lot of treated produce shall be appropriately documented.

## **14.9 Handling of rejected produce**

**14.9.1** The operator shall demonstrate the procedure used to minimize wastage and for dealing with any raw material or horticultural produce that is rejected.

**14.9.2** The produce shall be disposed off safely to minimize negative impacts on human health and environmental safety.

## **14.10 Cold chain management**

**14.10.1** Where available, cold chain facilities shall be of satisfactory structural conditions.

**14.10.2** Produce should be maintained under recommended temperature and humidity at all times.

## **14.11 Produce transport**

**14.11.1.** The transport vessel shall be built and equipped to ensure maintenance of optimal temperatures and hygiene and to prevent damage, contamination and spoilage of produce.

**14.11.2.** Vessels shall maintain the temperature and humidity levels prescribed in the specific produce standards

## **14.12 Temperature monitoring**

**14.12.1** Produce temperature shall be monitored based on recommended temperatures and records kept.

## **14.13 Packaging**

**14.13.1** The operator shall have a documented packaging risk assessment

**14.13.2.** There shall be procedures of storage, handling and stock control of packaging materials.

**14.13.3** Packaging material for produce shall be of food grade quality and of such a design as to protect the produce from any contamination.

**14.13.4** Staples shall not be used in produce packaging.

**14.13.5** Where required, fumigation or heat treatment of pallets and containers shall be done in accordance with the relevant legislation.

**14.13.6** The operator shall be committed to the use of environmentally friendly packaging materials.

## **14.14 Cleaning materials**

**14.14.1** Materials used for cleaning shall be those approved for use.

**14.14.2** Materials used for cleaning shall be stored and maintained in a designated secure area away from produce and other non-cleaning chemicals.

**14.14.2** Adequate facilities shall be provided for cleaning and disinfecting of work tools and equipment.

**14.14.3** Cleaning chemicals used for food contact surfaces shall be of food grade quality.

## **15 Worker health, safety and welfare**

### **15.1 Machinery**

**15.1.1** Machinery with internal combustion engines shall not be used in confined areas.

**15.1.2** Only trained operators shall operate machinery.

### **15.2 Health**

**15.2.1** Health requirements shall be followed to ensure that personnel who come directly into contact with produce during or after harvesting are not likely to contaminate them.

**15.2.2** Potable water shall be available to staff at all times. Containers or outlets of water unsuitable for drinking shall be appropriately marked.

**15.2.3** The workstation shall be provided with sufficiently well stocked first aid kits and have personnel trained in first aid on hand to deal with emergencies.

**15.2.4** Written accident and emergency procedures on how to deal with serious injuries requiring medical attention shall be displayed clearly, permanently and prominently with contact person telephone number or institution. It shall include basic steps of primary accidents.

**15.2.5** Workers changing rooms, eating and resting areas together with sufficient clean toilets, hand washing facilities, and food grade soap shall be provided.

**15.2.6** The operator shall undertake a survey of health conditions of the personnel in accordance with the operator health policy.

**15.2.7** The operator shall promote safe and hygienic work culture that establishes controls to address and minimize risks identified.

### 15.3 Safety measures

15.3.1 The operator shall document a worker health and safety risk assessment.

15.3.2 The operator shall document an occupational health and safety policy

15.3.3 Machinery used shall be suitable for its purpose and equipped with operational safety devices

15.3.4 Personnel operating equipment shall be trained on safe use and training records kept.

15.3.5 Fire extinguishers and other appropriate firefighting equipment shall be easily accessible and regularly maintained.

15.3.6 Fire alarms shall be fitted to each floor above the exit and there shall be evidence of evacuation drills.

15.3.7 There shall be clearly marked emergency exits, which shall be fitted with fire safety break locks or remain unlocked during working hours.

15.3.8 Relevant safety rules and precautionary safety measures shall be clearly displayed.

15.3.9 The emergency plan and accident procedures shall be availed to all employees and displayed in common noticeboards.

### 15.4 Worker welfare

15.4.1 The height of grading tables and other facilities for work shall be appropriate for the comfort of the workers.

15.4.2 The operator shall ensure that food provided to workers meets public health requirements.

15.4.3 Suitable resting areas and where possible a canteen with cooking, eating and storage facilities may be provided by the employer. The eating and storage facilities shall be separated from the working areas.

15.4.4 Employees whose work entails standing for long periods shall be provided with facilities for sitting to enable them to take periods of rest.

15.4.5 Operators shall provide occupational health & safety, first aid and hygiene training to the workers.

15.4.6 Employees working with machinery or processes likely to cause bodily injury should be fully instructed as to the possible dangers and the precautions to be observed.

15.4.7 All machinery shall be fully guarded where applicable and well maintained. Records shall be kept of all machinery maintenance and servicing.

15.4.8 Signs shall be displayed with regard to the following requirements:

- a) All sores and cuts shall be adequately covered with waterproof dressing;
- b) Hand washing for sanitary facilities with soap, hot air or paper (not cotton) towels shall be available;

- c) No powder shall be used on hands as this may contaminate produce;
- d) Fingernails shall be clipped short;
- e) Protective clothing including overalls, head coverings shall be worn at all times in packing areas;
- f) Personal protective equipment. shall be regularly laundered and kept in a clean and well-maintained condition and in an area separate from animals and separate from children's nappies
- g) Smoking, eating and drinking shall be prohibited in all food handling areas;
- h) Personnel shall be advised to keep personal belongings away from production lines and that there should be;
  - i. no false nails, eye lashes or hair pieces;
  - ii. no nail varnish;
  - iii. no watches or jewellery except single plain band wedding ring;
  - iv. no chewing gum; and
  - v. no open shoes shall be allowed in the pack house.

## **16. Labour, Employment and Social issues**

**16.1** Documentation that demonstrates that a clearly identified, named member of management has the responsibility for ensuring compliance with existing and relevant national legislations and the implementation of the policy on worker welfare shall be available.

**16.2** All labour, employment and social issues shall at a minimum meet the requirements of the national labour and employment legislations including but not limited to; wages, staff recruitments & promotions, induction & training, work contracts, work hours & leave days, expectant & nursing mothers, termination, workman's compensation, freedom of association & participation, grievance and disciplinary procedures, forced labour, discrimination/harassment, child labour and record keeping..

**16.3** Where a collective bargaining is negotiated, it shall be in accordance with the Labour Institutions Act. and Labour Relations Act.

## **17.Environmental management**

**17.1** The operator shall have a documented environmental risk assessment.

**17.2** An environmental management plan shall be developed based on the risk assessment.

### **17.2 Energy management.**

**17.2.1** The operator shall have an energy management policy.

**17.2.2** The operator shall have written an energy management plan in place

**17.2.3** The operator shall monitor energy use to optimize energy efficiency.



## **17.2 Waste management**

**17.2.1** The operator shall have a waste management plan.

**17.2.2** The operator shall provide separate disposal bins for different kinds of waste.

**17.2.3** Holding areas for fuel and oils shall comply with the national requirements

**17.2.4** Wastewater treatment and disposal systems shall comply with the national regulations.

**17.2.5** Hazardous waste shall be disposed of in accordance with national requirements

## **17.3 Bio-diversity conservation**

**17.3.1** There shall be a documented conservation policy or statement which shall comply with the national legislation governing wildlife and conservation issues.

**17.3.2** All non-cropped areas shall be managed to encourage wildlife.

**17.3.3** The operator should practice activities which promote conservation.

## **18 Legal and contractual obligations**

### **18.1 Legal compliance**

**18.1.1** The operators shall comply with applicable national laws and regulations and with applicable international treaties and agreements.

## **Bibliography**

KS 1758-2:2016, Horticulture industry- Code of practice - Part 2: Fruits and vegetables.



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