

**MINISTRY OF INDUSTRY,
COMMERCE, AGRICULTURE
& FISHERIES**

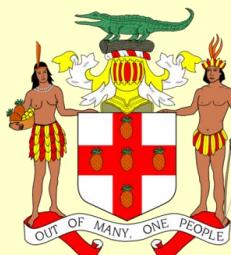
PRODUCE GRADING MANUAL

IN ASSOCIATION WITH THE

RURAL AGRICULTURAL DEVELOPMENT AUTHORITY &
MARKETING AND AGRICULTURE FOR JAMAICAN IMPROVE
COMPETITIVENESS PROJECT

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FOREWORD

Standard Specification for Grades of Fresh produce is voluntary for all traders.

The minimum grade allowed for export is grade 2. Standards for imported produce shall not fall below the criteria for commercially traded produce. Pre-cooling, storage temperature and cleaning method are not grading characteristics but they are necessary to maintain good quality.

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INTRODUCTION

A key objective of the Ministry of Industry, Commerce, Agriculture & Fisheries is to provide all the relevant information and support to producers and organizations on the marketing of agricultural produce both locally and for export.

Due to the worldwide commercialization of agricultural produce, grades and standards for fresh agricultural produce is considered one of the main tools for the marketing of commodities in the local and international markets. Unlike industrial products, which are produced to specifications and are relatively consistent, agricultural products are by nature much more varied. Agricultural products can have a vast array of characteristics such as weight, size, shape, density, firmness, tolerance to insect damage, cleanliness, colour, taste, odour, maturity, blemishes, moisture content etc. Therefore a system of clear communication between buyers and seller is vital.

Fresh produce is expected to conform to specific criteria such as size, shape, colour, hygiene, packaging and labelling requirements. They are also expected to conform to the various pesticide limits that are established by the international food standard organization (CODEX) and implemented by countries involved in global trade.

Jamaica's produce is increasingly being scrutinized and at times are subjected to rejection and ultimate loss of income and market share that took years to establish.

Farmers and traders are increasingly entering into contractual arrangements to supply produce of varying quality specification. Moreover, there is growing international demand for standards, especially to satisfy stringent requirements for export. The Ministry of Industry, Commerce, Agriculture & Fisheries Standards were developed in an effort to:

- (a) Outline a clear set of descriptive guidelines on quality, size, labeling, packaging, hygiene and grade classification.
- (b) Sensitize traders/farmers on how to improve the presentation of their produce in the market place.

The standard prescribes the minimum general requirements for grading fresh agricultural produce. It classifies produce into three (3) grades and indicates the provisions concerning sizing, packaging, presentation and labelling. This standard also prescribes all the food safety parameters as laid down by the Ministry of Health and the International Code of Practice – General Principles of Food Hygiene with regards to contaminants.

These are voluntary standards and consequently are reliant on a system of cooperation and communication. Nonetheless, they are extremely useful as they provide a benchmark against which varying usages can be measured thus the trader can be guided as to what constitutes the best quality for sale to the consumer.

Benefits of Grades and Standards Usage

- Promotes the incentives for quality and safety;
- Makes it possible to buy produce that one has not seen previously;
- Facilitates price/quality comparison;
- Reduces the risk of deception and fraudulent marketing;
- Helps define contracts for delivery

1.0 Scope

This standard applies to fresh produce intended for commercial trade. Produce for industrial processing are **excluded**. The standard prescribes the minimum general requirements for grading fresh agricultural produce. It classifies produce into three (3) grades and indicates the provisions concerning sizing, packaging, presentation and labelling. This standard also prescribes the food safety parameters as laid down by the Codex General Principle on Food Hygiene with regards to contaminants.

2.0 Definitions

For the purpose of this manual, the following definitions shall apply:

- 2.1 **Blemish** is any physical injury affecting the surface of the produce, such as scars, healed cracks and discoloured spots, which detracts from its natural appearance, but will not significantly affect its shelf life.
- 2.2 **Bottle necks** are abnormally thick necks with poorly developed bulbs.
- 2.3 **Clean (visual) produce** is free from adhering soil, insects, chemical deposits and other foreign matter;
- 2.4 **Cut surface** means exposed surface of the produce resulting from the removal of damage areas, heads or multiple bases.
- 2.5 **Damage** means any defect or combination of defects of physical or physiological (external or internal) causes which detracts from the edible or marketing quality of the produce.
- 2.6 **Doubles** is the development of more than one distinct bulb joined only at the base.
- 2.7 **Disease** is any defect or combination of defects caused by micro-organisms.
- 2.8 **Dry cured** means the removal of excess moisture from the wrapper scale leaves and neck of the produce (example onion).
- 2.9 **Fairly smooth** means that 85% of the produce is free from any defects or roughness which more than slightly detracts from its general appearance.
- 2.10 **Fairly well trimmed** means that 85% of the root hairs, excess leaves and stems have been removed.
- 2.11 **Fairly well shaped** means that 85% of the produce has the shape characteristic of the variety;
- 2.12 **Firm** means not soft, shrivelled or spongy.
- 2.13 **Fresh** means that the produce maintains its reaped appearance and is not shrivelled or shows signs of dehydration.
- 2.14 **Fully matured** means that fresh produce has reached full development and is firm with a tough skin and has no sprouting or surface shrivelling.
- 2.15 **Mature** stage of maturity that allows the produce to possess the necessary quality characteristics that is desired by the consumer.
- 2.16 **Nematode damage** means scarring and discolouration (burning) caused by the feeding of nematode on the surface of the produce, or lesion extending into the flesh of the produce.
- 2.17 **Soft** means that the produce yields to moderate pressure.
- 2.18 **Serious damage** is any defect or combination of defects of physiological or physical (external or internal) causes which could lead to the abnormally quick deterioration of the produce resulting in rejection.
- 2.19 **Similar varietal characteristics** means that fresh produce in a container shall have the same general shape, colour characteristic of skin and flesh.
- 2.20 **Smooth** means that the produce is free from any defect(s) causing roughness which more than slightly detracts from its

general appearance.

- 2.21 **Weight** is net weight delivered to the customer.
- 2.22 **Well trimmed** - means that produce root hairs, excess leaves, and stems shall be removed;
- 2.23 **Well shaped** produce has the shape characteristic of the variety.
- 2.24 **White surface area** means that produce exhibit some degree of immaturity as seen on the external surface at the tip of the produce
- 2.25 **Wrapper leaves** means leaves that do not enfold the head fairly tightly more than two thirds the distance from the base to the top.

3.0 GRADE CLASSIFICATION

Fresh produce shall be packed and marketed in three grades as follows:

Grade 1

The preferred grade. Perfect quality produce.

Grade 2

The general market grade. May include produce with minor blemishes.

Grade 3

Lower quality produce which meets the minimum requirements, but is not up to the standard of Grade 1 or Grade 2.

3.1 GRADE TOLERANCE

In each of the foregone grades, the following tolerance is provided as specified.

Consignment Tolerance

Grade 1	Grade 2	Grade 3
Not more than 5% by number or weight of produce shall fail to meet the specifications of this grade but meet those of Grade 2. There shall be zero tolerance for damage at the dispatching stage.	Not more than 10% by number or weight of produce shall fail to meet the specifications of this grade but meet those of grade 3. There shall be zero tolerance for damage at the dispatching stage.	Not more than 10% by number or weight of produce shall fail to meet the minimum quality and grade classification requirements. Damage shall not exceed more than 5% at the dispatching stage.

3.1.1 Provisions Concerning Sizing

Size in each grade will be dependent on the market requirement.

The size of produce packed in any standard type shipping container shall be specific.

3.2 Size Tolerance

For all grades, ten percent (10%) by number or weight of the produce corresponding to the size immediately below or above the size indicated on the package.

3.2.1 PACKAGING AND PRESENTATION

3.2.2 Packaging Requirements

Fresh produce shall be packed in a manner, which will afford protection to the produce.

Containers shall meet the quality, hygiene, ventilation and resistance characteristics to ensure suitable handling, shipping and preservation of the produce.

The use of materials, particularly of paper or stamps bearing trade specifications is allowed, provided the printing or labelling has been done with non-toxic ink or glue. Additionally all markings must be legible of a permanent nature, and of a reasonable size proportional to the package or label.

4.0 LABELLING

4.1 Labelling of retail containers shall comply with the requirements of "JS 1: and JSI Part 20".

4.1.1 Labelling of non-retail containers shall include the following:

4.1.2 Name and address of exporter, packer/dispatcher

4.2 Common name of produce and /or botanical name

4.2.1 Country of origin

4.2.2 Net weight of package (kg)

4.2.3 Number of produce per container (count)

4.2.4 Grower/lot identification number

4.2.5 Grade

4.2.6 Variety

4.2.7 Storage temperature

5.0 CONTAMINANTS

Fresh produce shall be free of any biological (bacteria, virus, parasites, fungus etc.), chemical (pesticide, allergens etc.) or physical (metal, glass, wood, hard plastic etc.) agent, foreign matter or other substances not intentionally added to food which may compromise food safety or suitability.

5.1 Heavy Metals and Pesticide Residues

Fresh produce shall comply with those residue limits for heavy metals, pesticides and other food safety parameters as laid down by Codex Alimentarius Maximum Residue Limits (MRL) for Pesticide Residue.

5.2 Hygiene

It is recommended that the produce covered by the provisions of this standard be prepared and handled in accordance with the appropriate section of the most recent revision of the International Code of Practice – General Principles of Food Hygiene (CAC/RCPI – 1969, Rev.3 – 1997) was Amended in 1999.

ONION

Standard Specification



MINISTRY OF INDUSTRY, COMMERCE, AGRICULTURE & FISHERIES

Scope: Onion (*Allium cepa*) quality is primarily based on the firmness, colour (yellow, white, or red), shape, dryness, maturity, degree of pungency, freedom from neck and scale greening, decay, bruises, sprout, root growth, doubles, diseases and other defects. Onion is primarily marketed on the following size categories: Jumbo, medium and small.

Minimum Requirements: Onion shall be of similar varietal characteristics, clean, mature, firm, dry cured and free from diseases.

Dry Cured: The removal of excess moisture from the wrapper scale leaves and neck of the onion.

Characteristics	Grade 1	Grade 2	Grade 3
Size: Jumbo	> 60mm (> 2 ½ inches) in diameter.	> 60mm (> 2 ½ inches) in diameter.	> 60mm (> 2 ½ inches) in diameter.
Medium	45 to 60mm (2 to 2 ½ inches) in diameter.	45 to 60mm (2 to 2 ½ inches) in diameter.	45 to 60mm (2 to 2 ½ inches) in diameter.
Small	35 to 44mm in diameter.	35 to 44mm in diameter.	35 to 44mm in diameter.
Firmness	Onion is firm and does not yield to pressure.	Onion may yield to moderate pressure.	Onion yield to slight pressure.
Appearance	Well trimmed. Completely free from decay, damage, loose scales, bottled neck, watery scales, blemish, sprout, root growth, doubles and any other defects.	Fairly well trimmed. Completely free from decay, damage, bottled neck, watery scales, sprout, root growth, any other defects. Blemish should not exceed more than 5% of the surface area.	Fairly well trimmed. Completely free from decay, sprout and serious damage. Blemish should not exceed more than 10% of the surface area.
Colour	Uniform colour, typical of the variety.	Uniform colour, typical of the variety.	Uniform colour, typical of the variety.
Shape	Well shaped, typical of the variety, Not lopsided or otherwise deformed	Fairly well shaped, typical of the variety. Not lopsided or otherwise deformed.	A range of shapes within the variety.

Unacceptable



Decay



Botrytis Neck Rot



Sprout

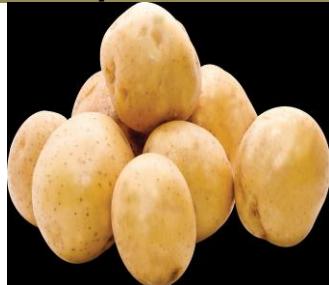
FACTORS THAT CAN MAINTAIN QUALITY OF ONION AND ATTAIN MAXIMUM SHELF LIFE

Storage Temperature

10°C to 18°C (65 to 70% Relative humidity), storage life 1 to 8 months

IRISH POTATO

Standard Specification



MINISTRY OF INDUSTRY, COMMERCE, AGRICULTURE & FISHERIES

Scope: Table Irish potato (*Solanum tuberosum*) quality is primarily based on the firmness, colour, shape (oblong or round), maturity, freedom from decay, pest damage, diseases, growth crack and mechanical injuries. Sizing in this standard shall exclude creamer potatoes.

Minimum Requirements: Irish potato shall be of similar varietal characteristics, clean, mature, fresh, and free from diseases, sprouts, pests and pest damage.

Characteristics	Grade 1	Grade 2	Grade 3
Size	45 to 65mm (2 to 2 ½ inches) in diameter.	66 to 90mm (2 ½ to 3 ½ inches) in diameter.	>90mm (>3 ½ inches) in diameter.
Colour (creme/red)	Good uniformity, typical of the variety.	Good uniformity, typical of the variety.	Good uniformity, typical of the variety.
Shape	Well shaped to type. Not lopsided or otherwise deformed.	Fairly well shaped.	A range of shapes within the variety.
Firmness	Does not yield to pressure.	Does not yield to pressure.	Does not yield to pressure.
Appearance	Completely free from decay, bruises, pest, pest damage, green discolouration and other defects.	Completely free from decay, bruises, pest, pest damage, green discolouration.	Free from decay, green discolouration, pest and pest damage.

Unacceptable:



Decay



Scab



Green discolouration



Growth crack

FACTORS THAT CAN MAINTAIN QUALITY OF IRISH POTATO AND ATTAIN MAXIMUM SHELF LIFE

Cleaning Method	Irish potato should be cleaned to remove soil and foreign material.
Pre-cooling Method	Room cooling/Forced air cooling.
Storage Temperature	7°C to 10°C (85% to 95% Relative Humidity), storage life 8 to 10 months.

CARROT

Standard Specification



MINISTRY OF INDUSTRY, COMMERCE, AGRICULTURE & FISHERIES

Scope: Carrot (*Daucus carota*) quality is primarily based on its bright orange colour, maturity, uniformity, shape, firmness, and freedom from decay, diseases, pests, pest damage, sprouts, brown discolouration or bronzing and other defects. Sizing in this standard shall exclude baby carrot.

Minimum Requirements: Carrot shall be of similar varietal characteristics, clean, mature, fresh, firm, and free from diseases, pests and pest damage.

Characteristics	Grade 1	Grade 2	Grade 3
Size	Minimum of 12cm (4 $\frac{1}{4}$ inches) in length and 2.5cm (1 inch) in diameter at the crown.	Minimum of 12cm (4 $\frac{1}{4}$ inches) in length and 2cm (3/4 inch) in diameter at the crown.	Less than 2cm (3/4 inch) in diameter and varying length.
Colour	Bright orange colour, typical of the variety.	Bright orange colour, typical of the variety.	Bright orange colour, typical of the variety.
Shape	Well shaped to type. Not crooked, lumpy or otherwise deformed.	Fairly well shaped.	A range of shapes.
Firmness	Firm skin with no surface shrivelling.	Firm skin with no surface shrivelling.	Firm skin with no surface shrivelling.
Appearance	Well trimmed, completely free from decay, pest damage, diseases, green discolouration, sprouts, bruises, growth crack and any other defects.	Fairly well trimmed, completely free from decay, pest damage, diseases, green discolouration, sprouts, bruises, growth crack and any other defects.	Fairly well trimmed. Completely free from decay, diseases, sprouts and green discolouration.

Unacceptable:



Mis- shaped



Green discolouration



Root knot



Soft rot

FACTORS THAT CAN MAINTAIN QUALITY OF CARROT AND ATTAIN MAXIMUM SHELF LIFE

Washing method

Carrot should be washed in potable water to remove foreign material.

Pre-cooling Method

Room cooling/Force air cooling/hydro-cooling.

Storage Temperature

0°C (98 to 100% RH), storage life 7 to 9 months

TOMATO
Standard Specification



MINISTRY OF INDUSTRY, COMMERCE, AGRICULTURE & FISHERIES

Scope: Tomato (*Lycopersicon esculentum*) quality is primarily based on the maturity, red colour, round or oblong shape, firmness and freedom from: cracks, mechanical injury, pests, pest damage, diseases and other defects.

Sizing in this standard shall exclude cherry tomatoes.

Minimum Requirements: Tomato shall be of similar varietal characteristics, clean, mature, fresh, free from pests, pest damage and diseases.

Characteristics	Grade 1	Grade 2	Grade 3
Size: Table Tomato	Minimum weight 158g (5.5 ounces) , diameter 6.8cm (2.7 inches)	Minimum weight 125g (4.4 ounces) , diameter 4.4cm (1.7 inches)	Minimum weight 93g (3.3 ounces) , diameter 4.4cm (1.7 inches)
Plummy Tomato	Minimum weight 71g (2.4 ounces) , Length 7.6cm (3 inches), diameter 4.4cm (1.7 inches)	Minimum weight 55g (1.9 ounces) , Length 6.5cm (2.6inches), diameter 4cm (1.6 inches)	Minimum weight 38g (1.3 ounces), Length 6cm (2.4inches), diameter 3.5cm (1.4 inches).
Colour	Tomato must show an external colour of at least a definite break from a mature green to a straw ground colour	Tomato must show an external colour of at least a definite break from a mature green to a straw ground colour	Tomato may show an external colour variation.
Shape	Uniform shape, typical of the variety.	Uniform shape, typical of the Variety.	Fairly well shaped.
Firmness	Give a feeling of springiness and pliability when pressure is applied.	Give a feeling of springiness and pliability when pressure is applied.	Fairly springy when pressure is applied.
Appearance	Smooth and completely Free from: decay, discolouration and damage caused by growth cracks, bruises, catfaces, cuts, sunscald, broken skin,	Smooth and completely Free from: decay, discolouration and serious damage caused by growth cracks, bruises, catfaces, cuts, sunscald, broken skin,	Fairly smooth and completely Free from: decay, discolouration and very serious damage caused by growth cracks, bruises, catfaces, cuts, sunscald, broken skin,

Unacceptable:



Puffiness

Sunscald

Growth Cracks

Insect Injury

Spotting

Catfaces

FACTORS THAT CAN MAINTAIN QUALITY OF THE TOMATO AND ATTAIN MAXIMUM SHELF LIFE

Pre-cooling Method

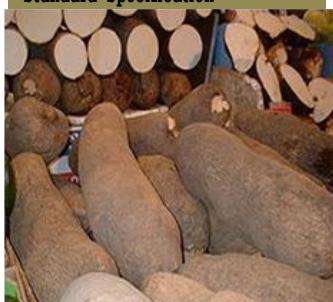
Room cooling/Force air cooling.

Storage Temperature

Mature green: 12°C to 18°C (85 to 95% Relative Humidity). Firm ripe: 6 to 10°C (90 to 95% RH).

YELLOW YAM

Standard Specification



MINISTRY OF INDUSTRY, COMMERCE, AGRICULTURE & FISHERIES

Scope: Yellow yam (*Dioscorea cayenensis*) quality is primarily based on the firmness, yellow flesh & dark brown skin colour, cylindrical shape, maturity, freedom from growth crack, decay, pest damage, pests (nematode, weevil, worm etc) and mechanical injuries (bruises, cracks, compression etc.).

Minimum Requirements: Yam shall be of similar varietal characteristics, clean, mature, fresh, firm, and free from diseases, pests and pest damage.

White Tip: White to light brown surface close to the base (tip) of the tuber. **Toes:** The tuber has multiple tips or bases.

Characteristics	Grade 1	Grade 2	Grade 3
Size	Minimum length 20cm (8 inches), minimum diameter 10cm (4 inches) & minimum weight 1.14kg (2.5lb)	Minimum length 19cm (7.5 inches), minimum diameter 8.9cm (3.5 inches) & minimum weight 0.91kg (2lb)	Minimum length 15cm (6 inches), minimum diameter 7.6cm(3 inches), & minimum weight 0.55kg(1.5lb)
Colour	Uniform yellow flesh and dark brown skin colour.	Uniform yellow flesh and dark brown skin colour.	Uniform yellow flesh and dark brown skin colour.
Shape	Cylindrical shape, typical of the variety. Not crooked or flattened.	Fairly well shaped.	Fairly well shaped.
Firmness	Tough skin with no surface shrivelling.	Tough skin with no surface shrivelling.	Fairly tough skin.
Appearance	Completely free of toes, white tip, worm, weevil, nematode damage, cracks, bruises, sprouts, decay, mould growth, and any other defects.	Not more than 2 toes and 2 cut surfaces. Completely free from nematode damage, cracks, bruises, white tip, sprouts, decay, mould growth and any other defects.	Not more than 3 cut surfaces, 3 toes and 3 cm white tip. Absence of decay and mould growth.

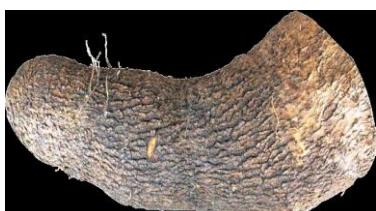
Unacceptable:



Mould



Mis-shaped Yellow Yam



Nematode Damage



Immature Yam

FACTORS THAT CAN MAINTAIN QUALITY OF YAM AND ATTAIN MAXIMUM SHELF LIFE

Washing Method	Yellow yam should be washed in potable water to remove foreign matter
Pre-cooling Method	Air cooling
Storage Temperature	13°C to 16°C (70 to 80% Relative Humidity)

GREEN SWEET PEPPER

Standard Specification



MINISTRY OF INDUSTRY, COMMERCE, AGRICULTURE & FISHERIES

Scope: Green sweet pepper (*Capsicum annuum*) quality is primarily based on the firmness, maturity, green colour, shape, intact stem and freedom from defects (pest damage, decay, diseases, scars, bruises, cracks, sunscald, etc.)

Minimum Requirements: Green sweet pepper shall be of similar varietal characteristics, clean, mature, fresh, firm, and free from diseases, pests, and pest damage.

Trimmed: stem should be cut 6.4mm (0.25 inches) above the shoulder.

Characteristics	Grade 1	Grade 2	Grade 3
Size	Minimum weight 115g (4.1 ounces), 7.6 cm (3 inches) in diameter.	Minimum weight 84g (2.9 ounces), 6.4cm (2 ½ inches) in diameter.	Minimum weight 53g (1.9 ounces), 5.1cm (2 inches) in diameter.
Colour	Uniform dark green skin colour.	Uniform dark green skin colour.	Uniform dark green skin colour.
Shape	Well shaped with 3 to 4 oblong well formed lobes, typical of the variety.	Fairly well shaped with 3 to 4 distinctly formed lobes.	Fairly well shaped. Lobes may not be distinctly formed.
Appearance	Mature dark green skin. Completely free from decay and damage caused by bruises, scar, sunscald, cracks & any other defects.	Mature dark green skin. Completely free from decay and serious damage caused by bruises, scar, sunscald, cracks & any other defects.	Mature dark green skin. Completely free from decay and very serious damage caused by bruises, scar, sunscald, cracks & any other defects.

Unacceptable:



Decay

Sunscald

FACTORS THAT CAN MAINTAIN QUALITY OF THE SWEET PEPPER AND ATTAIN MAXIMUM SHELF LIFE

Pre-cooling Method Room cooling, forced air cooling.

Storage Temperature 7°C to 10°C (85 to 95% Relative Humidity), storage life seven days.

RED SWEET PEPPER

Standard Specification

MINISTRY OF INDUSTRY, COMMERCE, AGRICULTURE & FISHERIES



Scope: Red sweet pepper (*Capsicum annuum*) quality is primarily based on the firmness, maturity, red colour, shape, intact stem and freedom from defects (pest damage, decay, diseases, scars, bruises, cracks, sunscald etc.).

Minimum Requirements: Red sweet pepper shall be of similar varietal characteristics, clean, mature, fresh, firm, free from diseases, pests, and pest damage.

Trimmed: stem should be cut 6.4mm (0.25 inches) above the shoulder.

Characteristics	Grade 1	Grade 2	Grade 3
Size	Minimum weight 115g (4.1 ounces), 7.6cm (3 inches) in diameter.	Minimum weight 84g (2.9 ounces), 6.4cm (2 ½ inches) in diameter.	Minimum weight 53g (1.9 ounces), 5.1cm (2 inches) in diameter.
Colour	Uniform red skin colour.	Uniform red skin colour.	Uniform red skin colour.
Shape	Well shaped with 3 to 4 oblong well formed lobes, typical of the variety.	Fairly well shaped with 3 to 4 distinctly formed lobes.	Fairly well shaped. Lobes may not be distinctly formed.
Appearance	Ripe red skin. Completely free from decay and damage caused by bruises, scar, sunscald, cracks & any other defects.	Ripe red skin. Completely free from decay and serious damage caused by bruises, scar, sunscald, cracks & any other defects.	Ripe red skin. Completely free from decay and very serious damage caused by bruises, scar, sunscald, cracks & any other defects.

UNACCEPTABLE



Decay



Anthracnose



Growth cracks

FACTORS THAT CAN MAINTAIN QUALITY OF THE SWEET PEPPER AND ATTAIN MAXIMUM SHELF LIFE

Pre-cooling Method	Room cooling, forced air cooling.
Storage Temperature	7°C to 10°C (85 to 95% Relative Humidity), storage life seven days.



Yellow Sweet Pepper

Standard Specification

MINISTRY OF INDUSTRY, COMMERCE, AGRICULTURE & FISHERIES

Scope: Yellow sweet pepper (*Capsicum annuum*) quality is primarily based on the firmness, maturity, Yellow colour, shape, intact stem and freedom from defects (pest damage, decay, diseases, scars, bruises, cracks, sunscald etc.)

Minimum Requirements: yellow sweet pepper shall be of similar varietal characteristics, clean, mature, fresh, firm, free from diseases, pests, and pest damage.

Trimmed: stem should be cut 6.4mm (0.25 inches) above the shoulder.

Characteristics	Grade 1	Grade 2	Grade 3
Size	Minimum weight 115g (4.1 ounces), 7.6cm (3 inches) in diameter.	Minimum weight 84g (2.9 ounces), 6.4cm (2 ½ inches) in diameter.	Minimum weight 53g (1.9 ounces), 5.1cm (2 inches) in diameter.
Colour	Uniform yellow skin colour.	Uniform yellow skin colour.	Uniform yellow skin colour.
Shape	Well shaped with 3 to 4 oblong well formed lobes, typical of the variety.	Fairly well shaped with 3 to 4 distinctly formed lobes.	Fairly well shaped. Lobes may not be distinctly formed.
Appearance	Ripe yellow skin. Completely free from decay and damage caused by bruises, scar, sunscald, cracks & any other defects.	Ripe yellow skin. Completely free from decay and serious damage caused by bruises scar, sunscald, cracks & any other defects.	Ripe yellow skin. Completely free from decay and very serious damage caused by bruises, scar, sunscald, cracks & any other defects.

Unacceptable:



Decay

FACTORS THAT CAN MAINTAIN QUALITY OF THE SWEET PEPPER AND ATTAIN MAXIMUM SHELF LIFE

Pre-cooling Method

Room cooling, forced air cooling.

Storage Temperature

7°C to 10°C (85 to 95% Relative Humidity), storage life seven days.

Scotch Bonnet Pepper

Standard Specification



MINISTRY OF INDUSTRY, COMMERCE, AGRICULTURE & FISHERIES

Scope: Fresh Scotch bonnet pepper (*Capsicum chinense*) quality is primarily based on the aroma, firmness, colour (green, yellow, orange or red), shape, intact green stem, freedom from: decay, shriveling, pest damage, diseases and other defects.

Minimum Requirements: Scotch Bonnet pepper shall be of similar varietal characteristics, clean, firm, mature, fresh free from pests, pest damage and diseases.

Characteristics	Grade 1	Grade 2	Grade 3
Size	Not less than 4.5 cm (1 ¾ inches) in diameter or a maximum of 20 peppers equivalent to 1 pound.	Not less than 3.5cm (1 ½ inches) in diameter or a maximum of 25 peppers equivalent to 1 pound.	Not less than 2.5cm (1 inch) in diameter or a maximum of 30 peppers equivalent to 1 pound.
Colour	Uniform colour, typical of the variety.	Uniform colour, typical of the variety.	Fairly Uniform colour.
Shape	Distinct cup and saucer shape with 3 to 4 lobes. Not crooked, lopsided or otherwise deformed	Fairly well shaped with 3 to 4 Lobes.	Lobes may not be distinct.
Appearance	Completely free from bruises, decay, scar, sunscald, pest, pest damage, crack, split and any other defects	Completely free from bruises, decay, scar, sunscald, pest, pest damage, crack, split and any other defects.	Free from decay, pest and pest damage.

Unacceptable:



Growth Cracks



Shriveled Pepper



Mis -shaped & disease

FACTORS THAT CAN MAINTAIN QUALITY OF THE SCOTCH BONNET PEPPER AND ATTAIN MAXIMUM SHELF LIFE

Pre-cooling Method

Room cooling/Forced air cooling

Storage Temperature

7°C to 10°C (85 to 95% Relative Humidity), storage life seven days.

Cabbage

Standard Specification



MINISTRY OF INDUSTRY, COMMERCE, AGRICULTURE & FISHERIES

Scope: Green Cabbage (*Brassica oleracea var. Capitata* L) quality is

Primarily based on the compactness, colour, freedom from: decay, growth crack, pests, pest damage, diseases and other defects.

Minimum Requirements: Cabbage shall be of similar varietal characteristics, clean, fresh and free from: pests, pest damage and diseases.

Characteristics	Grades 1	Grade 2	Grade 3
Size	Minimum weight of 0.7kg (1.5lb)	Minimum weight of 0.7kg (1.5lb)	Minimum weight of 0.5kg (1lb)
Shape	Well shaped. Not lopsided or otherwise deformed	Fairly Well shaped.	Fairly well shaped
Appearance	Completely free of decay, doubles, cut, pest, pest damage, growth cracks, well Trimmed, head with no more than 3 Wrapper leaves and stem shall be cut, no more than 10mm below Wrapper leaves.	Completely free of decay, pest damage, growth cracks, well Trimmed, head with no more than 3 to 4 wrapper leaves and stem shall be cut no more than 10mm below wrapper leaves.	Fairly well trimmed head with no more than 3 to 4 wrapper leaves.

Unacceptable:



Decay



Pest Damage

FACTORS THAT CAN MAINTAIN QUALITY OF THE CABBAGE AND ATTAIN MAXIMUM SHELF LIFE

Pre - Cooling Method

Room cooling/forced air cooling

Storage Temperature

0°C to 2°C (90% to 98% Relative Humidity).

PUMPKIN
Standard Specification



MINISTRY OF INDUSTRY, COMMERCE, AGRICULTURE & FISHERIES

Scope: Pumpkin (*Cucurbita pepo*) quality is primarily based on the maturity, firmness, round to oval shapes, dark green, pale green, light yellow, orange, or variegated skin colours and freedom from bruises, cuts, pest damage and other defects.

Minimum Requirements: Pumpkin shall be of similar varietal characteristics, clean, mature, fresh, firm and free from diseases and pests.

Characteristics	Grade 1	Grade 2	Grade 3
Size	Minimum 3.6kg (8lb) in weight.	Minimum 3.6kg (8lb) in weight.	A range of sizes.
Colour	Uniform colour, typical of the variety.	Uniform colour, typical of the variety.	Uniform colour, typical of the variety.
	Same general colouration of skin over at least 90% of the surface area.	Same general colouration of skin over at least 90% of the surface area.	Same general colouration of skin over at least 85% of the surface area.
	Ground spot should not exceed 5%.	Ground spot should not exceed 10%.	Ground spot should not exceed 15%.
Shape	Well shaped to type. Not lopsided or otherwise deformed.	Fairly well shaped to type.	A range of shapes.
Firmness	Pumpkin does not yield to pressure.	Pumpkin does not yield to pressure.	Pumpkin does not yield to pressure.
Appearance	Stem intact, completely free from bruises, decay, scars, pest, pest damage and other defects.	Stem intact, completely free of bruises, decay, scars, pest, pest damage and other defects.	Free from decay, pest and pest damage.

UNACCEPTABLE



Immature pumpkin



Pumpkin scab

FACTORS THAT CAN MAINTAIN QUALITY OF PUMPKIN AND ATTAIN MAXIMUM SHELF LIFE

Washing Method	Pumpkin should be washed in potable water to remove foreign material.
Pre-cooling Method	No pre-cooling is necessary.
Storage Temperature	7°C to 10°C (85 to 95% Relative Humidity).

Ginger

Standard Specification



MINISTRY OF INDUSTRY, COMMERCE, AGRICULTURE & FISHERIES

Scope: Fresh ginger (*Zingiber officinale*) quality is primarily based on the firmness, large thick rhizome, limited branching, gray brown glossy colour and freedom from defects (decay, diseases, pests, pest damage).

Minimum Requirements: ginger shall be of similar varietal characteristics, clean, fully mature, fresh, firm, free from decay, diseases, pests and pest damage.

Characteristics	Grade 1	Grade 2	Grade 3
Size	Not less than 180 g (6.3 ounces) in weight.	Not more than 150g (5.3 ounces) in weight	Not more than 140g (4.9 ounces) in weight and not less than 100g (3.5 ounces).
Colour	Skin gray brown and Glossy. Flesh light yellow.	Skin gray brown and glossy. Flesh light yellow.	Skin gray brown and glossy. Flesh Light yellow.
Shape	Thick rhizome with maximum of 3 to 4 branches	Thick rhizome with maximum of 4 to 5 branches	Not more than 6 branches.
Firmness	Tough rhizome with no surface Shrivelling.	Tough rhizome with no Surface shrivelling.	Tough rhizome with slight surface shrivelling.
Appearance	Rhizome shall be well trimmed. Completely free from decay, bruises, sprout, pest, green discolouration, damage, blemishes and any other defects.	Rhizome shall be well trimmed. Completely free from decay, bruises, sprout, Green discolouration, damage, blemishes and any other defects.	Rhizome shall be completely free from decay, sprout and Green discolouration.

Unacceptable



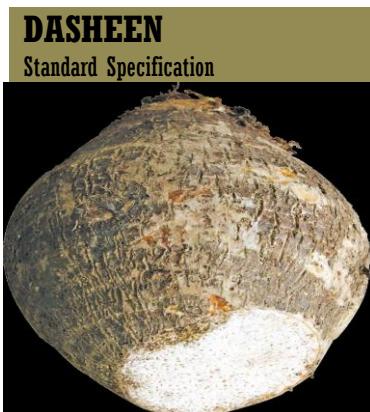
Sprouting



Decay

FACTORS THAT CAN MAINTAIN QUALITY OF GINGER AND ATTAIN MAXIMUM SHELF LIFE

Washing Method	Ginger should be washed in potable water to remove foreign matter.
Pre-cooling Method	Room Cooling/Forced air cooling.
Storage Temperature/Condition	12°C to 14°C / 85% to 90% Relative humidity, storage Life 60 to 90 days.



DASHEEN

Standard Specification

MINISTRY OF INDUSTRY, COMMERCE, AGRICULTURE & FISHERIES

Scope: Dasheen (*Colocasia esculenta*) quality is primarily based on the brown intact skin, firmness, round to ovate shape, maturity, freedom from sprouts and mechanical injuries.

Minimum Requirements: Dasheen shall be of similar varietal characteristics, clean, mature, fresh, firm and free from diseases.

Trimmed: The stem should be cut off leaving 4cm (1.5inches) of stalk attached to the dasheen corm. Cut off tail end of corm to leave 1.3cm (0.5inch) on the corm.

Characteristics	Grade 1	Grade 2	Grade 3
Size	Weight of between 0.9kg to 1.1kg.	Weight of between 0.9kg to 1.1kg.	A range of size.
Colour	Dark brown skin colour.	Dark brown skin colour.	Dark brown skin colour.
Shape	Well shaped.	Fairly well shaped.	A range of shapes.
Firmness	Tough skin with no surface shrivelling.	Tough skin with no surface shrivelling.	Fairly tough skin.
Appearance	Completely free from cracks, bruises, sprouts, decay, mould growth and any other defects.	Completely free from cracks, bruises, sprouts, decay, mould growth and any other defects.	Completely free from decay and mould growth.

Unacceptable:



Mould



Extra-long stalk

FACTORS THAT CAN MAINTAIN QUALITY OF DASHEEN AND ATTAIN MAXIMUM SHELF LIFE

Cleaning Method	Dasheen should be cleaned to remove soil and foreign material.
Pre-cooling Method	Room cooling/Forced air cooling.
Storage Temperature	13°C to 18°C (85 to 95% RH), storage life 7 days or 11°C to 13°C (85 to 90% RH), storage life 1 to 2 months.

Thyme

Standard Specification



MINISTRY OF INDUSTRY, COMMERCE, AGRICULTURE & FISHERIES

Scope: Thyme (*Thymus vulgaris*) quality is primarily based on the green to dark green colour, strong aroma, freedom from decay, pests, pest damage, brown discolouration, and handling defects.

Minimum Requirements: Thyme shall be of similar varietal characteristics, clean, mature, fresh and free from: pests, pest damage and diseases.

Characteristics	Grade 1	Grade 2	Grade 3
Size	Stalk length not more than 38mm (1 ½ inches) below the canopy.	Stalk length not more than 38mm (1 ½ inches) below the canopy.	Stalk length not more than 38mm (1 ½ inches) below the canopy.
Colour	Uniform green to dark green leaves.	Green to light green leaves.	Light green leaves.
Appearance	Well trimmed; completely free from dried leaves, yellowing, flower buds and any other defects.	Well trimmed; completely free from dried leaves, yellowing, flower buds and any other defects.	Completely free from dried leaves and yellowing. The presence of flower buds on 1% of the lot is allowed.

Unacceptable:



Dried leaves

FACTORS THAT CAN MAINTAIN QUALITY OF THYME AND ATTAIN MAXIMUM SHELF LIFE	
Pre-cooling Method	Room Cooling
Storage Temperature	0° C (90 to 95% Relative Humidity), storage life 2 to 3 weeks

Callaloo
Standard Specification



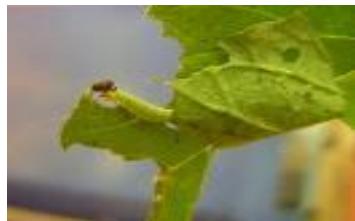
MINISTRY OF INDUSTRY, COMMERCE, AGRICULTURE & FISHERIES

Scope: Callaloo (*Amaranthus sp.*) quality is primarily based on the dark green to green leaves and stem colour, succulent leaves and easily snapped stem, freedom from: pests, pest damage, diseases and handling defects.

Minimum Requirements: Callaloo shall be of similar varietal characteristics, clean, mature, fresh, and free from pests, pest damage and diseases.

Characteristics	Grade 1	Grade 2	Grade 3
Size	Stem length of 10 to 15cm (4 to 6 inches) below the canopy.	Stem length of 10 to 15cm (4 to 6 inches) below the canopy.	Stem length of 15cm (6 inches) below the canopy.
Colour	Green to dark green leaves.	Green leaves.	Light green leaves.
Appearance	Lush green to dark green turgid leaves. Evenly cut round stalk butt with no frayed end. Stalk must not be crushed or split. Completely free from pest, pest damage, yellow discolouration, flower buds and other defects.	Green turgid leaves. Evenly cut round stalk butt with no frayed end. Stalk must not be crushed, split or has a loss of more than 5% by weight of their green portion. Completely free from pest, pest damage, yellow discolouration, flower buds and other defects.	Light green fairly turgid leaves. Evenly cut round stalk butt with no frayed end. Stalk must not be crushed, split or has a loss of more than 10% by weight of their green portion. Completely free from pest, yellow discolouration. Five percent(5%) leave damage in the lot is allowed.

Unacceptable:



Worm Damage



Over Mature

FACTORS THAT CAN MAINTAIN QUALITY OF CALLALOO AND ATTAIN MAXIMUM SHELF LIFE

Washing Method	Callaloo should be washed in potable water to remove foreign material.
Pre-cooling Method	Hydrocooling
Storage Temperature	2°C to 4°C (90 to 98% Relative Humidity), storage life seven days.

SWEET POTATO

Standard Specification



MINISTRY OF INDUSTRY, COMMERCE, AGRICULTURE & FISHERIES

Scope: Sweet potato (*Ipomea batatas*) quality is primarily based on the firmness, colour, round, oval or elongated shapes, uniformity, maturity, freedom from decay, diseases, defects, pests and pest damage.

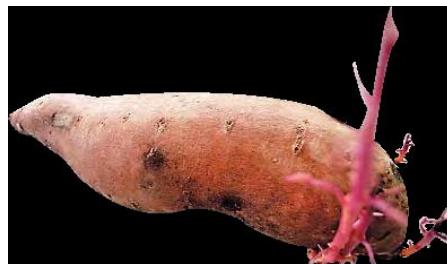
Minimum Requirements: Sweet potato shall be of similar varietal characteristics, clean, mature, fresh, firm, and free from diseases, pests and pest damage.

Characteristics	Grade 1	Grade 2	Grade 3
Size	Weight range of between 0.5kg to 1kg (1.1 to 2.2lb). Not less than 3 inches (76mm) in diameter at the widest section.	Weight range of between 0.5kg to 1kg (1.1 to 2.2lbs.). Not less than 3inches (76mm) in diameter at the widest section.	A range of sizes.
Colour	Uniformed colour, typical of the variety.	Uniformed colour, typical of the variety.	Uniformed colour, typical of the variety.
Shape	Well shaped to type. Not lopsided or otherwise deformed. Tuber tapered towards the ends	Fairly well shaped to type tapered towards the ends.	A range of shapes within the variety.
Firmness	Does not yield to pressure.	Does not yield to pressure.	Yield to moderate pressure.
Appearance	Well trimmed, completely free from decay, pest damage, diseases, green discolouration, sprouts, bruises, growth cracks and any other defects.	Fairly well trimmed, completely free from decay, pest damage, diseases, green discolouration, sprouts, bruises, growth cracks and any other defects.	Completely free from decay sprouts, discolouration, pest and pest damage.

Unacceptable:



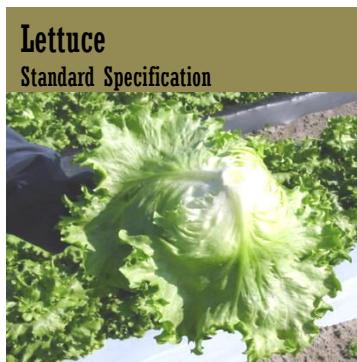
Weevil Damage



Sprout

FACTORS THAT CAN MAINTAIN QUALITY OF SWEET POTATO AND ATTAIN MAXIMUM SHELF LIFE

Washing Method	Sweet potato should be washed in potable water to remove foreign matter
Pre-cooling Method	Room cooling/Forced air cooling/Hydro-cooling
Storage Temperature	16°C to 18°C (85% to 95% Relative Humidity)



Lettuce

Standard Specification

MINISTRY OF INDUSTRY, COMMERCE, AGRICULTURE & FISHERIES

Scope: Iceberg lettuce (*Lactuca sativa*) quality is primarily based on the maturity, firmness, colour, shape, and freedom from decay, pests, pest damage, diseases and mechanical injury.

Minimum Requirements: Lettuce shall be of similar varietal characteristics, clean, fresh, and free from diseases, pests, pest damage and decay.

Lettuce Head: Must be trimmed so that the butt is cut 13mm (0.5inch) below the point of attachment of the last wrapper leaves.

Characteristics	Grade 1	Grade 2	Grade 3
Size	Minimum diameter of 10 cm (4 inches). When packaged lettuce must not vary by more than 51mm (2 inches) in diameter.	Minimum diameter of 8.8 cm (3.5 inches). When packaged lettuce must not vary by more than 51mm (2 inches) in diameter.	Minimum diameter of 7.6 cm (3 inches). When packaged lettuce must not vary by more than 51mm (2 inches) in diameter.
Colour	Light green in colour.	Light green in colour.	Light green in colour.
Firmness	Compact but yields to moderate Pressure.	Yields to slight pressure But is not spongy.	Head is spongy
Appearance	Well trimmed, completely free from decay, discolouration, damage caused by bruises, split head, broken ribs and pest	Fairly well trimmed, completely free from decay, discolouration, serious damage caused by bruises, split head, broken ribs and pest	Fairly well trimmed, completely free from decay, discolouration, very serious damage caused by bruises, split head, broken ribs and pest

Unacceptable:



Decay

FACTORS THAT CAN MAINTAIN QUALITY OF LETTUCE AND ATTAIN MAXIMUM SHELF LIFE

Pre - Cooling Method	Hydro cooling.
Storage Temperature	0oC (98 to 100% Relative humidity), storage life 2 to 3 weeks

