

DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES

STD. No. C-1

AGRICULTURAL PRODUCT STANDARDS ACT, 1990 (ACT No. 119 OF 1990)
STANDARDS AND REQUIREMENTS REGARDING CONTROL OF
THE EXPORT OF CITRUS FRUIT

The Executive Officer: Agricultural Product Standards has stipulated under section 4(3)(a)(ii) of the Agricultural Product Standards Act, 1990 (Act No. 119 of 1990), these standards regarding the quality of citrus fruit and the requirements regarding the packing, marking and labelling thereof.

STD. No. C-1

STANDARDS AND REQUIREMENTS REGARDING CONTROL OF THE EXPORT
OF CITRUS FRUIT AS STIPULATED BY
GOVERNMENT NOTICE No. 1983 OF 23 AUGUST 1991

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PART 1**GENERAL STANDARDS AND REQUIREMENTS FOR CITRUS FRUIT****Definitions**

1. In these standards and requirements, unless inconsistent with the context, any word or expression to which a meaning has been assigned in the Act, shall have a corresponding meaning and --

"albedo" means the spongy white tissue on the inside of the rind of citrus fruit;

"Arthropoda" means any stage in the life cycle of an invertebrate member of the Animal Kingdom that is bilaterally symmetrical with a segmented body, with jointed limbs that are paired and a chitinous external skeleton;

"blemish" means any external defect on the surface of the citrus fruit which detrimentally affects the appearance of the citrus fruit;

"chemical residues" means residues of agricultural remedies which in terms of the Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947), are permissible for the treatment of pests and diseases and which comply with the prescribed maximum residue limit;

"citrus fruit" means grapefruit, kumquats, lemons, limes, oranges and Seville oranges, pummelos (Shaddocks) as well as soft citrus (easy peelers);

"consignment" means --

- (a) a quantity of citrus fruit of the same cultivar, belonging to the same owner, and delivered at the same time under cover of the same delivery note, consignment note or receipt note, or delivered by the same vehicle; or
- (b) in the case of a quantity of citrus fruit that is divided into different cultivars, classes, counts, count groups, pallet loads, trademarks or types of packaging, every quantity of each of the different cultivars, classes, counts, count groups, pallet loads, trademarks or types of packaging;

"container" means the immediate container in which citrus fruit are packed directly, the outer container in which prepacked units are packed and bulk containers, excluding prepacked units and shipping containers in which pallet loads are shipped;

"count" means the number of citrus fruit packed in a container;

"creasing" means a depression of --

- (a) at least one millimetre in depth, caused by a break in the albedo and of which the total length of the crease or creases, measured by a straight line, exceeds one-third of the circumference of the citrus fruit; and
- (b) less than one millimetre in depth, caused by a break in the albedo and of which the total length of the crease or creases, measured by a straight line, exceeds three-quarters of the circumference of the citrus fruit;

"decay" means a state of decomposition, fungus development, internal insect infestation or internal insect damage, with signs of tissue collapse or insect excrement, which detrimentally affects the quality of the citrus fruit;

"diameter" means the equatorial diameter of a citrus fruit or, in the case of an elongated citrus fruit, the average of the equatorial and polar diameters thereof;

"equatorial diameter" means the largest diameter of a citrus fruit measured at right angles to the longitudinal axis thereof;

"flavedo" means the outer coloured part of the rind of citrus fruit which bears oil glands and pigments;

"food safety" means assurance that a food product is acceptable for human consumption according to its intended use;

"foreign matter" means any material or substance not normally present in, on or between the citrus fruit, excluding chemical residues, as well as wax which is manufactured for the prevention of desiccation;

"granulated juice sac" means a dry and crystallised juice vesicle: Provided that a jelly-like juice vesicle is excluded;

"greening disease" means symptoms such as an abnormally dull green colour, lopsidedness or acorn-shape, an off-taste, abortive seeds, softness and a yellow discoloration around the stem end, which are characteristic of greening disease;

"hazard" means a biological, chemical or physical agent in, or condition of, a food product with the potential to cause an adverse health effect;

"inspector" means the Executive Officer or an officer under his or her control, or an Assignee or an employee of an Assignee;

"long stems" means stems that protrude more than two millimetres beyond the stem button or, in the case of sunken buttons protrude beyond the shoulder of the fruit by more than two millimetres (excluding citrus fruit packed with leaves);

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"loose flap" means that more than one corner of a carton flap is loose;

"major" --

- (a) in relation to frost damage, granulation or drying out means that it can be observed in a citrus fruit at a depth as specified for each cultivar, measured from the inside of the albedo, in all the segments, or in two or more juice sacs, in all but two segments;
- (b) in relation to injuries, means --
 - (i) cuts, splits or holes which penetrate the flesh of the citrus fruit; and
 - (ii) penetration by insects or insect larvae into the flesh of the citrus fruit without any sign of tissue collapse or insect excrement or the presence of the insects or insect larvae;
 - (iii) cracks or splits of the flavedo and albedo which exposes the flesh without penetration;
- (c) in relation to water saturation, means water saturation in the albedo and flavedo due to injuries, weak skin and skin cracks at flower end;

"malformation" means a deformity in the normal shape of citrus fruit and, in the case of oranges of navel cultivars, an excessively protruding navel;

"mature seed" means seed of which one or more cotyledons have completely swollen, as well as any seed longer than six millimetres: Provided that wrinkled, shrivelled, flat, dull seed which have not swollen and which do not affect the edibility of the citrus fruit shall be excluded;

"minor" means --

- (a) injuries around the button area as a result of the tearing out of the button thereby exposing the albedo;
- (b) frost damage, granulation and drying out that it is of a lesser intensity than specified in the definition of "major" and also occurs from the inside of the albedo to a depth as specified for each cultivar; and
- (c) injuries, cuts, splits, holes or stings which have penetrated into the albedo but does not expose the flesh of the citrus fruit;

"overmature" means that the physiological stage of the citrus fruit has passed the optimal eating quality;

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"polar diameter" means the diameter of a citrus fruit measured through the longitudinal axis thereof;

"prepacked unit" means any single packing unit for presentation as such to the consumer consisting of citrus fruit and the packaging into which the citrus fruit were put before being offered for sale;

"mature" means the physiological stage of citrus fruit where its eating quality is optimal;

"scale" means red and purple scale of which the diameter is at least one millimetre and mussel scale of which the length is at least one millimetre;

"skin defects" means a rough, coarse, thick or ribbed skin;

"skin weakness" means where the flavedo is stretched so thinly across a break in the albedo of the skin of a citrus fruit that a dark shadow of the break can clearly be seen beneath the flavedo;

"suitable" means to be suitable according to the opinion of the Executive Officer;

"superficial fungal growth" means black or grey fungus growth on the substrate on the surface of the skin where red scale has been removed, excluding fungus growth on the button or on scale, or sooty mould, sooty blotch, necrostoma, black spot or other types of fungus growth which may cause decay;

"the Act" means the Agricultural Product Standards Act, 1990 (Act No. 119 of 1990); and

"traceability" means the ability to trace and follow a food product or any substance intended to be, or expected to be incorporated into a food product through all stages of production, packing, processing, handling and distribution.

Scope

2. These standards and requirements shall relate to citrus fruit in respect of which an approval for the export thereof is required in terms of section 4 of the Act.

Requirements for approval

3. (1) An approval referred to in section 4 of the Act may be issued in respect of the consignment of citrus fruit if --

- (a) the citrus fruit in that consignment complies with the applicable quality and food safety standards prescribed in item 4 of Part 1, Part 2, Part 3 and Part 4;
- (b) the citrus fruit is packed in containers which comply with the requirements prescribed in item 5;
- (c) the citrus fruit comply with packing requirements prescribed in item 6;
- (d) the citrus fruit comply with the traceability requirements prescribed in item 7;
- (e) the containers concerned are marked or labelled in accordance with the applicable marking requirements set out in item 8;
- (f) the samples for inspection are drawn and inspected in accordance with the requirements set out in item 9 and 10;
- (g) that consignment has been presented for inspection in accordance with the Regulations Regarding Control of the Export of Citrus Fruit;
- (h) confirmation has been received that the Requirements regarding Food Hygiene and Food Safety Programmes for Regulated Agricultural Food Products of Plant Origin Intended for Export has been met;
- (i) an inspector has, after an inspection in terms of the said regulations, found that the provisions of these standards and requirements have been complied with in respect of the consignment concerned ;and
- (j) the inspection validity period is 21 days for soft citrus and 28 days for other citrus fruits.

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(2) The Executive Officer may deviate from the requirements and issue the approval in respect of a quantity of a product that --

- (a) is to be exported as an experiment or under such other special circumstances as may be approved by the Executive Officer; and
- (b) complies with the requirements for such product in force in the country to which it is to be exported.



agriculture,
forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA



GENERAL STANDARDS AND REQUIREMENTS FOR CITRUS FRUITS

QUALITY AND FOOD SAFETY STANDARDS

Classes

4. (1) There are four classes of citrus fruits namely "Extra Class", "Class 1", "Class 2" and "For Processing Purposes Only" unless otherwise determined in Part 2 and 3 for a specific type of citrus fruits.

Standards for classes

- (2) A consignment of citrus fruits shall be classified as "Extra Class" if it --
- (a) is of superior quality;
 - (b) is characteristic of the cultivar with regard to shape and colour;
 - (c) comply with the specific standards and requirements for Extra Class set out in Part 2;
 - (d) does not exceed the maximum permissible deviations for Extra Class set out in Part 2 and 3; and
 - (e) comply with the illustrated quality factors for Extra Class set out in Part 3, Annexure H.
- (3) A consignment of citrus fruits shall be classified as "Class 1" if it --
- (a) is of good quality;
 - (b) is characteristic of the cultivar with regard to shape and colour;
 - (c) comply with the specific standards and requirements for Class 1 set out in Part 2 and 3;
 - (d) does not exceed the maximum permissible deviations for Class 1 set out in Part 2 and 3; and
 - (e) comply with the illustrated quality factors for Class 1 set out in Part 3, Annexure H.

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- (4) A consignment of citrus fruits shall be classified as "Class 2" if it --
- (a) is characteristic of the cultivar with regard to shape and colour;
 - (b) comply with the specific standards and requirements for Class 2 set out in Part 2 and 3;
 - (c) does not exceed the maximum permissible deviations for Class 2 set out in Part 2 and 3; and
 - (d) comply with the illustrated quality factors for Class 2 set out in Part 3, Annexure H.
- (5) A consignment of citrus fruits that is classified as citrus fruits for "For Processing Purposes Only" shall comply with the specific standards and requirements for "For Processing Purposes Only" as determined in Part 2.
- (6) No consignment of citrus fruits classified as "Extra Class", "Class 1", "Class 2" and citrus fruits "For Processing Purposes Only" shall contain --
- (a) plant injurious organisms of phytosanitary importance as specified by the Directorate Plant Health;
 - (b) any organisms which may be a source of danger to the human being;
 - (c) any larvae of *Cryptophlebia leucotreta* (False Codling Moth), only applicable to FCM sensitive markets (Refer to part 5)
 - (d) Arthropoda infestation including the organisms which according to paragraph (a) do not form part of plant injurious organisms, excluding organisms which may be a source of danger to the human being and False Codling Moth, on more than 3% of the citrus fruits or three free running Arthropoda per pallet load or part thereof in the consignment: Provided that it does not exceed a maximum of one Arthropoda per container; and
 - (e) biological or chemical contaminants in quantities or at levels that exceed the maximum limits prescribed in terms of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act No. 54 of 1972): Provided that if the limit of the importing country is lower than is permissible in terms of Act 54 of 1972, the prescribed limit of the importing country shall be complied with.

Deviations

- (7) The classes mentioned in sub-item (1) may deviate from the quality and food safety standards to the extent set out in Part 2 for a specific type of citrus fruits.

Physical hazards

(8) No consignment of citrus fruit classified as "Extra Class", "Class 1" or "Class 2" and "For Processing Purposes Only" shall contain:

- (a) any foreign matter in excess of the tolerance as set out in Part 2 for a specific type of citrus fruits.
- (b) any organisms which may be a source of danger to the human health.

Biological and chemical hazards

(9) No consignment of citrus fruit classified as "Extra Class", "Class 1" and "Class 2" and "For Processing Purposes Only" shall contain biological or chemical contaminants in quantities or at levels that exceed the maximum limits prescribed in terms of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act No. 54 of 1972: Provided that if the limit of the importing country is lower than is permissible in terms of Act 54 of 1972, the prescribed limit of the importing country shall be complied with.

Chemical treatment

- (10) (i) Any person intending to export citrus fruit during any particular season shall, before submitting the first consignment during that season for inspection, on request furnish the Executive Officer within 24 hours with a certificate certifying --
- (a) which chemical remedies have been used during the spray program on citrus trees;
 - (b) which chemical remedies will be used on the citrus fruit as a post-harvest treatment; and
 - (c) that the provisions of paragraph (ii) have been complied with.
- (ii) Chemical residues shall not exceed the prescribed maximum residue limits.
- (iii) Subject to the provisions of paragraphs (i) and (ii) the follow-on consignments of only the producer concerned whose citrus fruit exceeded the maximum chemical residue limits, shall be held back from export for not more than *four* working days in order to establish if the citrus fruit complies with the prescribed residue limits: Provided that if the consignments of the producer concerned, again comply with the prescribed residue limits, it shall not be held back from export any longer.

CONTAINERS

General

5. (1) Containers, excluding bulk containers, in which citrus fruits are packed shall --
- (i) be suitable, clean, dry and undamaged;
 - (ii) not impart a foreign taste or odour or any substance which may be injurious to human health to the citrus fruit;
 - (iii) be free from any visible signs of fungus growth;
 - (iv) be free from Arthropoda infestation; and
 - (v) be strong and rigid enough to ensure that the original shape be retained and not bulge out, dent in, break or tear, to the extent that citrus fruit are damaged or are at risk of being damaged, during normal storage, handling or transport.
- (2) Bulk containers in which citrus fruits are packed shall --
- (i) be suitable, clean, dry and undamaged;
 - (ii) be free from any visible signs of fungus growth;
 - (iii) be free from Arthropoda infestation; and
 - (iv) be without bark if manufactured from wood.
- (3) Containers (excluding cartons) that are re-used, shall be of a suitable material that can be cleaned and disinfected prior to re-use.

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PACKING REQUIREMENTS**General**

6. (1) (a) Only citrus fruits of the same quality, cultivar and size (if sized) shall be packed in the same container.
- (b) Citrus fruits shall not be packed together with other types of citrus fruit in the same container.
- (c) Extra Class citrus fruits shall be packed in layers (Kumquats of all Classes shall be jumble packed).
- (d) Only Class 1, Class 2 and citrus fruits for processing may be packed in bulk containers or may be packed to a specific count or jumble packed.
- (e) If citrus fruits are packed in prepacked units, such units shall be packed in a suitable manner in an outer container: Provided that the prepacked units are new, clean, dry, undamaged and suitable.
- (f) (i) If citrus fruits are packed to a specific count, the difference in diameter between the largest and the smallest citrus fruit in the same container shall not exceed the limits prescribed for the specific size reference as follows:
- | | |
|---------------------------------|-------|
| (aa) Lemons and limes: | 7 mm |
| (bb) Oranges or Seville oranges | |
| - Size reference 0 to 2: | 11 mm |
| - Size reference 3 to 6 | 9 mm |
| - Size reference 7 to 13 | 7 mm |
| (cc) Soft citrus | |
| - Size reference 1XXX to 4 | 9 mm |
| - Size reference 5 and 6 | 8 mm |
| - Size reference 7 to 10 | 7 mm |
- (ii) If citrus fruits are jumble packed, the difference in diameter between the largest and the smallest citrus fruit in the same container shall not exceed the limits prescribed for the specific size reference, as set in part 2 of the specific citrus fruit (excluding fruit for processing purposes).

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- (iii) If mixed sizes of citrus fruits are packed in bulk containers, the difference in diameter between the largest and the smallest fruit in the same container shall not exceed the range obtained by grouping the consecutive sizes (diameters), as set out in Part 2, concerned: Provided that the range shall not exceed a maximum of three consecutive sizes or diameters (excluding fruit for processing).
- (g) If packing material is used inside the containers, such packing material shall be new, clean, dry, odourless; not transmit to citrus fruit any harmful substance or any substance that may be injurious to human health; and of a quality such as to avoid causing any external or internal damage to the citrus fruit.

Stacking of containers on pallets

- (2) If containers containing citrus fruit are palletised --
 - (a) the pallet shall be clean, undamaged and suitable and not transmit to the citrus fruit any harmful substance or any substance that may be injurious to human health;
 - (b) pallets manufactured from wood shall be without bark;
 - (c) the pallet shall be free from any visible signs of fungus growth;
 - (d) the pallet shall be free from Arthropoda infestation;
 - (e) the containers shall be stacked firmly and square with each other and the pallet with the business sides facing outward;
 - (f) only containers of the same dimensions shall be stacked in the same layer on the pallet;
 - (g) the containers shall not be stacked upside-down on the pallet; and
 - (h) the top layer of a pallet containing citrus fruit without lids shall be covered with a suitable covering, except for on-farm loading of shipping container.

Strapping of pallet loads

- (3) A pallet load of containers shall be strapped in a suitable manner.

TRACEABILITY REQUIREMENTS

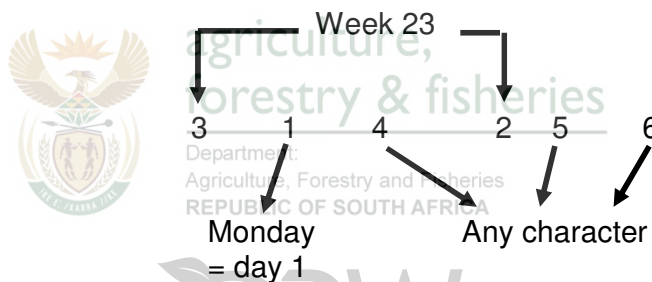
7. Producers, packhouse managers and exporters shall:
- (a) establish the traceability of citrus fruit at all stages of production, packing, handling and distribution;
 - (b) be able to identify any person or supplier from whom they have been supplied with citrus fruit, or any substance intended to, or expected to be used in the production or processing of citrus fruit;
 - (c) have in place systems and procedures to identify other businesses to which their citrus fruit have been supplied;
 - (d) ensure that adequate procedures are in place to withdraw citrus fruit from the market where such citrus fruit present a serious risk to the health of consumers;
 - (e) immediately withdraw citrus fruit which was identified as citrus fruit that present a serious risk to the health of consumers;
 - (f) immediately inform the Executive Officer of such withdrawal;
 - (g) immediately make available, on request, any information or documentation mentioned in (a), (b), (c), (d), (e) or (f); and
 - (h) keep records of the information mentioned in (g), as well as any other relevant information for at least two years.

MARKING REQUIREMENTS**General**

8. (1) (a) Each container containing citrus fruit shall be marked clearly, indelibly, legibly and not untidy, upside-down or askew, in block letters and numerals, on any short or long side of the lid or container, where lids are not used, by printing, stamping or by means of specially designed labels, with the following particulars: Provided that all particulars shall be grouped on the same side:
- (i) The appropriate citrus fruit, as the case may be: Provided that if the contents are visible from the outside, this expression does not have to be indicated on the container.
 - (ii) The appropriate cultivar, where applicable, as specified in Part 2 for a specific type of citrus fruits.
 - (iii) The expression "Extra Class", "Class 1", "Cat 1", "Category 1", "Class I", "Cat I", "Category I", "Class 2", "Cat 2", "Category 2", "Class II" or "Cat II" or "Category II" and " For Processing Purposes Only". (The letter P may be indicated on a sticker for citrus fruit for processing provided that the cartons are marked with the wording "For Processing Purposes Only".)
 - (iv) The country of origin: Provided that no abbreviations or the expression "South Africa" on its own shall be used.
 - (v) The size reference as set out in Part 2 (excluding fruit for processing) for a specific type of citrus fruits preceded by the expression "Size code", "Size", "Size reference" or any other suitable term having a similar meaning: Provided that:
 - (aa) the lower and upper size reference shall be indicated if mixed sizes of fruit are packed in bulk containers; and
 - (bb) such a size reference shall be preceded by the expression "Size range" or any other suitable term having a similar meaning.
 - (vi) The number of fruit in each container (count) in the case of citrus fruit which are packed according to a specific count: Provided that such a count reference shall be preceded by the expression "Count".

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- (vii) The name and local physical or postal address of the producer, exporter or owner of the container.
- (viii) The producer's code and/or packhouse code or orchard number which is registered with the Executive Officer by the producer or packhouse, as the case may be: Provided that --
 - (aa) if a producer has more than one farm, each farm shall be registered separately; and
 - (bb) such code shall be preceded by the expression "Producer", "Packhouse", "Packer", "PUC", "PHC", farm number or Grower Code.
- (ix) The packing date: Provided that if the packing date is expressed in a code, only the following code shall be used:



The first and fourth figures used indicate the week. Digit one is the second figure and digit four the first figure of that week. Example: Week 23 would be indicated as: First digit 3 and fourth digit 2.

The second digit indicates the day of the week, e.g. Monday =1

The third, fifth and sixth characters can be used to ensure traceability of the product, e.g. identification of orchard, packing line, producer in the case of co-operative packing, etc.

- (x) If the citrus fruit concerned have been post-harvest treated with a preserving agent or other chemical substances it shall be indicated on the business side of the container, preceded by the expression "Treated with".

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- (b) If a consignment of citrus fruit is exported in bags or re-usable containers, the particulars required in paragraph (a)(ii), (iii), (iv), (v), (vii) and (viii) shall be indicated on labels specially designed for this purpose and which --
- (i) in the case of bags, are affixed to the bags; and
 - (ii) in the case of re-usable containers, fit into the slot specially affixed for this purpose.
- (c) If a consignment of citrus fruit is exported in bulk containers, the particulars required in paragraph (a)(ii), (iii), (iv), (v), (vii) and (viii) shall be indicated on the two adjoining sides of the bulk containers by means of suitable stamps or labels specially designed for this purpose.
- (d) Subject to the provisions of paragraph (a), each outer container containing prepacked units shall be marked with an indication of the total number of prepacked units per outer container: Provided that if the total number of prepacked units is visible from the outside, it does not have to be indicated on the outer container.
- (e) If the country to which the citrus fruit are exported, prescribes requirements with regard to the marking of containers which differ from the aforementioned requirements, the containers containing such citrus fruit may, notwithstanding the provisions of these standards and requirements, be marked in a manner so prescribed.

Prohibited particulars

(2) No wording, illustration or other means of expression which constitutes a misrepresentation or which, directly or by implication, creates a misleading impression of the contents shall appear on a container containing citrus fruit.

SAMPLING PROCEDURES

9. (1) An inspector shall draw at random for inspection purposes, a sample of a consignment citrus fruit as follows and shall be satisfied that the containers so drawn are representative of the consignment concerned:

- (i) In the case of citrus fruit packed in containers:
 - (aa) Select at random at least two per cent of the total number of containers: Provided that for the determination of the size, granulation and internal quality of the citrus fruit, a minimum of two per cent or 10 containers per consignment, whichever is the smallest, shall be examined.
 - (bb) Draw at random a sample consisting of 50 fruit from each such container: Provided that if a container contains less than 50 fruit, the entire contents of such a container shall be taken as a sample.
 - (ii) In the case of citrus fruit packed in bulk containers:
 - (aa) Draw at random from each consignment at least 25 per cent or two containers, whichever is the greatest, of the bulk containers concerned.
 - (bb) Draw at random from each bulk container three quantities of 50 fruit each, respectively from the middle and two opposite corners of the bulk container.
 - (cc) All three samples of 50 fruit shall be taken as the sample for the inspection.
- (2) (i) A sample obtained in terms of subitem (1), depending on the type of container, shall be inspected in the manner as set out in item 10.
- (ii) The results of such an inspection shall apply to the whole consignment from which the sample concerned was obtained.

(3) **Deviating sample**

If an inspector should notice during the process of drawing the random sample or during the inspection, that some of the containers derived from any part of the pallet load, truck load or consignment contain fruit which are noticeably inferior to or differ from the contents of the containers which represent the remainder of the pallet load, truck load or consignment, the inspection result shall only be based on the containers derived from the deviating portion of the pallet load, truck load or consignment and further samples for inspection shall be drawn from this deviating portion.

METHODS OF INSPECTION

10. The sample obtained in accordance with item 9 above shall be inspected as follows:

Determination of number of scale (excluding kumquats)

(1) The number of scale per fruit in a consignment of citrus fruit shall be determined by examining each of the citrus fruit in the sample of the consignment in order to determine if the number of scale thereon exceeds the applicable limits specified in Part 2 for a specific type of citrus fruits.

Determination of granulation (excluding kumquats)

- (2) (a) Granulation and drying out, whatever the cause, found anywhere in the citrus fruit, will be regarded as granulation.
- (b) Any suspected frost damage, granulation or drying out, shall be determined as follows:
- (i) Cut the citrus fruit at the stem end of the segments, for all cultivars except Nova mandarin which should be cut at the stylar end of the segments, rectangular to the longitudinal axis of the fruit, measured from the inside of the albedo, at the following depth:
- | | |
|-----------------------------------|----------|
| (aa) All other citrus fruits | : 6 mm. |
| (bb) Pummelos (Shaddocks) | : 12 mm. |
| (cc) Valencias and Valencia types | : 10 mm |
- (ii) Then cut into the flesh of the fruit at any other side where frost damage, sunburn, granulation or drying out is suspected, to a depth of 6 millimetres, at right angles to the radius at this side: Provided that the presence of any granulated or dry juice vesicles at that depth is a sign of major granulation.
- (iii) This is to determine whether frost damage, granulation or drying out can be observed in the juice sacs of the segments at that depth.

Determination of granulation in kumquats

- (3) (a) Granulation and drying out, whatever the cause, found anywhere in the kumquats, will be regarded as major granulation.

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- (b) Any kumquats with suspected frost damage, granulation or drying out, shall be cut equatorially in order to determine whether the aforementioned deviations can be observed in the juice sacs of the segments.

Determination of juice requirements (excluding kumquats)

- (4) (a) The juice requirements of the citrus fruit in a consignment shall be determined as follows:
- (i) Draw at random from more than one container, as set out in item 9(1), a working sample of at least 12 fruit.
 - (ii) Determine the gross mass of the working sample obtained above.
 - (iii) Cut each fruit in the working sample in half at right angles to its longitudinal axis.
 - (iv) Press out the juice of the halved fruit as thoroughly as possible by using a suitable juice squeezer.
 - (v) Strain the juice thus obtained through two thicknesses of muslin into a wide mouth jug with a capacity of approximately one litre.
 - (vi) Twist the muslin in a tight ball and squeeze it until only damp pulp remains therein.
 - (vii) As soon as the liquid becomes thick and cloudy, pressure shall be stopped.
 - (viii) Determine the collective mass of the pressed-out halved fruit and the damp pulp in the muslin.
 - (ix) Determine the mass of the juice of the working sample by subtracting the mass determined in terms of subparagraph (viii), from the mass of the working sample.
 - (x) Express the mass thus calculated as a percentage of the mass of the working sample to determine the juice content.
 - (xi) Determine the brix content, acid content and the ratio between brix content to acid content in the manner set out in subitems 10(5) to 10(7).

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- (b) If the juice requirements thus determined do not comply with the requirements set out in subitem Part 2 for a specific type of citrus fruits--
- (i) the juice requirements of a further working sample shall be determined;
 - (ii) the average of the two determinations shall be calculated; and
 - (iii) such average shall represent the juice requirements of the consignment concerned.
- (c) If, during a determination referred to in paragraph (b), --
- (i) (aa) the average juice content is less than two per cent below the prescribed minimum;
 - (bb) the average ratio between total soluble solids content to acid content is less than 0,4 difference from the prescribed minimum; or
 - (cc) the average Brix content is less than 0,2 below the prescribed minimum;
 - (ii) the juice requirements of a further working sample, shall be determined;
 - (iii) the average of all the determinations shall be calculated; and
 - (iv) such average shall represent the juice requirements of the consignment concerned.
 - (v) If 66,6 per cent of all the working samples comply with the requirements set out in Part 2 for a specific type of citrus fruits a consignment of citrus fruit shall be approved for export although the average does not comply.

Determination of the Brix content (excluding kumquats and lemons)

- (5) (a) The Brix content of the citrus fruits in a consignment shall be determined with --
- (i) a calibrated refractometer; or

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- (ii) a calibrated refractometer with automatic temperature correction.
- (b) The temperature of the juice sample should be similar to that of the refractometer being used to measure the Brix content.
- (c) Ensure that the refractometer is properly calibrated by a laboratory that is accredited to calibrate refractometers.
- (d) Ensure that the prism surface of the refractometer is clean by wiping the prism surface with moistened, soft paper, then dry the prism surface with a dry cloth.
- (e) Thoroughly stir the juice sample ensuring that no sediment remains at the bottom of the juice sample.
- (f) Using a non-metallic spoon, transfer a few drops of the well-stirred juice onto the prism surface of the refractometer, covering the prism surface.
- (g) Take the Brix reading on the refractometer.
- (h) Measure the juice temperature if a non-temperature compensating refractometer is used.
- (i) If a refractometer without automatic temperature correction is used, the particulars set out in Part 2 for a specific type of citrus fruits shall be used to convert the figure with due regard to the temperature of the juice.
- (j) Such converted figure shall represent the percentage total soluble solids content of the citrus fruit in the consignment concerned.

Determination of the acid content (excluding kumquats)

- (6) (a) The acid content of the citrus fruit in a consignment shall be determined as follows:
 - (i) Use a 20 millilitre pipette to transfer 20 millilitres of the juice obtained in terms of subitem (4) into a glass titration flask with a capacity of approximately 300 millilitres.

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- (ii) (aa) Add five drops of phenolphthalein indicator, consisting of four grams phenolphthalein dissolved in 600 millilitres ethyl alcohol (95 per cent) plus 400 millilitres distilled water and sufficient decinormal sodium hydroxide solution to obtain a faint pink colour, to such juice; or
- (bb) should the juice be dark in colour add five drops of phenolphthalein indicator, consisting of five grams phenolphthalein dissolved in 80 millilitres ethyl alcohol (95 per cent) and filled up with ethyl alcohol to 100 millilitres, to such juice.
- (iii) Titrate a 0,1562 N sodium hydroxide solution into such juice by means of a burette with a capacity of 50 millilitres calibrated in millilitres, until the acid in that juice is neutralised.
- (iv) Determine how many millilitres of the solution concerned were used for such neutralising, and divide this figure by 20.
- (b) Such result shall represent the percentage acid content of the citrus fruit in the consignment concerned.

Determination of the ratio of the Brix content to the acid contents (excluding kumquats)

(7) The ratio of the Brix content to the acid content of the citrus fruit in a consignment shall be determined by dividing the percentage obtained in terms of subitem (5), by the percentage obtained in terms of subitem (6).

Determination of the number of seeds per fruit (excluding kumquats)

- (8) (a) The number of seeds per fruit in a consignment of citrus fruits shall be determined as follows:
 - (i) Draw at random from more than one container, as set out in subitem 9(1), a working sample of at least 12 fruit.
 - (ii) Cut each fruit in the working sample in half at right angles to its longitudinal axis.
 - (iii) Remove all the mature seeds and determine and note the number per individual fruit.

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- (iv) For the determination of the average number of seeds per fruit, divide such number by the number of fruit in the working sample and the figure obtained represents the number of seeds per fruit in the consignment.
- (v) Establish if the number of seeds per fruit comply with the requirements set out in Part 2 for a specific type of citrus fruits.
- (b) If the number of seeds per citrus fruits thus determined do not comply with the requirements set out in Part 2 for a specific type of citrus fruits --
 - (i) the number of seeds per fruit of a further working sample shall be determined;
 - (ii) the average of the two determinations shall be calculated; and
 - (iii) it shall be established if the number of seeds per fruit comply with the requirements set out in Part 2 for a specific type of citrus fruits.

Determination of the diameter of fruit (excluding kumquats)

- (9) (a) The diameter of the citrus fruit in a consignment shall be determined by the measuring of the equatorial diameter of each of the citrus fruit in the sample, by means of a measuring instrument calibrated in millimetres.
- (b) If the equatorial diameter of one or more of the citrus fruit (excluding lemons and soft citrus) thus measured does not comply with the requirements referred to in Part 2 for a specific type of citrus fruits --
 - (i) both the polar and equatorial diameters of such fruit shall be measured;
 - (ii) the average of the two diameters for each fruit shall be determined; and
 - (iii) such average shall for the purpose of Part 2 for a specific type of citrus fruits be deemed to be the equatorial diameter of the fruit concerned.

Determination of the flesh diameter of grapefruit

- (10) (a) Determine both the flesh diameter and fruit diameter of the grapefruit which have been cut in half in terms of subitem (4)(a)(iii) by placing a measuring instrument calibrated in millimetres, at random on any half of each grapefruit in such a way that the measuring edge of the measuring instrument passes through the longitudinal axis of the fruit.
- (b) If the flesh diameter of one or more of the 12 grapefruit in the working sample thus measured, does not comply with the requirements referred to in Part 2, the remaining grapefruit in the sample from which the working sample concerned was obtained, shall be cut in half at right angles to the longitudinal axis thereof and the fruit diameter and flesh diameter of each such fruit be measured as set out in paragraphs (a) and (c).
- (c) If, during a determination in terms of paragraph (a), the measuring edge of a measuring instrument --
- (i) falls on an undeveloped segment, it shall be aligned to the nearest normal segment; or
 - (ii) falls on the edge of a segment, it shall be aligned to that part of the segment where the skin is the thinnest.

Determination of the uniformity of fruit size (excluding kumquats and grapefruit)

(11) The difference in diameter between citrus fruit in a sample shall be determined as follows:

- (a) Obtain the equatorial diameter of all the fruit in the sample as well as the polar diameter of the fruit, of which the polar diameter is more than the equatorial diameter of the said fruit in the sample.
- (b) The equatorial diameter thus obtained shall represent the diameter of the fruit concerned unless the polar diameter is more than the equatorial diameter, in which case the polar diameter shall represent the diameter of the fruit concerned.
- (c) Tabulate the diameter readings of the fruit in one millimetre gradings.
- (d) Determine the smallest number of fruit which falls outside the diameter and express such number as a percentage of the number of fruit in the sample concerned.

- (e) Such percentage shall represent the number of fruit in the sample which is not uniform in size.

Determination of the length of kumquats

(12) The length of the kumquats in a consignment shall be determined by measuring each of the kumquats in the sample, by means of a measuring instrument calibrated in millimetres, measuring from the shoulder next to the button to the tip of the fruit.

Determination of certain deficiencies

- (13) (a) The extent to which a consignment of citrus fruits does not comply with the quality standards, excluding the quality standards already mentioned in subitems (1) to (12), shall be determined as follows:
- (i) Examine each of the fruit in the working sample by sensory means as well as on the basis of the illustrated quality factors as depicted in Annexure H of Part 3, in order to determine whether any deviations occur thereon or therein: Provided that any fruit with a suspected internal deficiency may be dissected to confirm the observation concerned.
 - (ii) Determine the respective number of fruit in the sample with each such deviation.
 - (iii) Express such numbers as percentages of the number of fruit in the sample.
- (b) Such percentages shall represent the extent to which those deviations occur in the consignment concerned.

Verification of biological and chemical contamination compliance

(14) An inspector shall verify compliance to the levels of biological and chemical contamination by sampling and submitting samples for analysis of only certain consignments according to a risk based plan to prescribed laboratories.

Verification of chemical treatment compliance

(15) An inspector shall verify compliance to the prescribed maximum residue levels for agrochemicals by sampling and submitting samples for analysis of only certain consignments according to a risk based plan to prescribed laboratories.