

DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES**No. R.**

AGRICULTURAL PRODUCT STANDARDS ACT, 1990
(ACT No. 119 OF 1990)

**REGULATIONS RELATING TO THE GRADING, PACKING AND MARKING OF CITRUS FRUIT
INTENDED FOR SALE IN THE REPUBLIC OF SOUTH AFRICA**

The Minister of Agriculture has, under section 15 of the Agricultural Product Standards Act, 1990 (Act No. 119 of 1990) -

- (a) made the regulations in the Schedule;
- (b) determined that the said regulations shall come into operation on date of publication; and
- (c) read together with section 3(2) of the said Act, repealed the regulations published by Proclamation No. R. 61 of 1973, Government Notices Nos. R. 1137 of 13 June 1975, R. 1829 of 26 September 1975, R. 804 of 4 May 1976, R. 2245 of 3 December 1976, R. 1147 of 24 June 1977, R. 627 of 28 March 1980, R. 996 of 13 May 1983, R. 602 of 30 March 1984 and R. 1169 of 15 June 1984 with effect from the date of commencement.

SCHEDULE**Definitions**

1. In these regulations, unless inconsistent with the text, any word or expression to which a meaning has been assigned by the Act, shall have that 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;

"**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, excluding insect puncture marks, 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 business operator (FBO)**" means the person or persons responsible for ensuring that the prescribed requirements of these standards are met within the food business as under his or her control and include both the management of the food business as well as the person with overall authority on site or in the specific establishment;

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

"**foreign matter**" means any material that is not normally present in, on or between citrus fruit, excluding -

- (a) 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
- (b) 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 a qualified 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;

"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;
 - (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; and
 - (iii) cracks or splits of the flavedo and albedo which exposes the flesh without penetration; and
- (c) in relation to endoxerosis in lemons, means endoxerosis in the dark brown to black discoloration stage affecting the albedo and core of the lemons with tissue collapse and water saturation;
- (d) 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**" means the physiological stage of citrus fruit where its eating quality is optimal;

"**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 have not entered the flesh of the citrus fruit;

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

"**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;

"**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, packaging, handling and distribution.

PART I

Control over the sale of citrus fruit

2. (1) No person shall sell citrus fruit in the Republic of South Africa, other than imported citrus fruit referred to in sub regulation (3): --

- (a) unless the citrus fruit is sold according to the classes in regulation 3;
- (b) unless the citrus fruit complies with the standards for classes in regulation 4;
- (c) unless the containers in which such citrus fruit is presented for sale complies with the requirements prescribed in regulation 5;
- (d) provision concerning presentation as set out in regulation 10;
- (e) citrus fruit complies with the traceability requirements as set out in regulation 11;
- (f) unless such citrus fruit is packed in a container and in the manner prescribed in regulations 6 and 7 and 8;
- (g) unless such containers are marked with the particulars and in the same manner prescribed in regulation 12;
- (h) if the citrus fruit contains a substance prescribed as a substance which it may not contain according to Act 36 of 1947; and
- (i) if the citrus fruit contains biological or chemical contaminants in quantities or at levels that the maximum limits prescribed in terms of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act No. 54 of 1972).

(2) Citrus fruit sold by vendors in streets (excluding retailers and supermarkets) and other public places are excluded from the stipulations in subregulation 2 (1) (a), (b), (c), (d), (e), (f), (g), (h), and (i), Provided that if such citrus fruit is marked in terms of item 12 and 13 it shall be subjected to the aforementioned stipulations.

(3) Imported citrus fruit may be exempted from the provisions of subitem (1), provided that the citrus fruits --

- (a) comply with either the Codex Alimentarius, UNECE (United Nations Economic Commission for Europe) or OECD (Organisation for Economic Co-operation and Development) standards;

- (b) are according to bilateral agreement accompanied by certificate issued by a relevant government authority responsible for quality control of fresh fruit and vegetables and in which it is certified that the quality of the citrus fruit as verified through inspection conforms to the relevant standard;
- (c) does not contain a substance prescribed as a substance which it may not contain according to Act 36 of 1947; and
- (d) does not contains 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).

(3) The Executive Officer may grant written exemption, entirely or partially, to any person on such conditions as he or she deems necessary, from the provisions of subregulation (1).

QUALITY STANDARDS

Classes for citrus fruits

3. There are three classes of citrus fruit namely Class 1, Class 2 and Lowest Class.

Standards for classes

4. (1) Citrus fruit shall--
- (a) be fit for human consumption; and
 - (b) contain no chemical residues that exceed the prescribed maximum residue levels;
- (2) Citrus fruit shall comply with the specifications set out in Tables 1, 2, 3, 4, 5, and 6.
- (3) No consignment of citrus fruit %Class 1+or %Class 2+or %Choice grade+shall contain --
- (a) any organisms which may be a source of danger to the human being; and
 - (b) 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, on more than 3% of the citrus fruit or three free live Arthropoda per pallet load or part thereof in the consignment: Provided that it does not exceed a maximum of one Arthropoda per container.

Requirements for containers

5. (1) Containers, excluding bulk containers, in which citrus fruit is packed shall --
- (a) be clean, dry, suitable and undamaged;
 - (b) not impart a foreign taste or odour to the citrus fruit;
 - (c) be free from any visible sign of fungus growth;
 - (d) be free from Athropoda infestation;
 - (e) 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; and
 - (f) consist of pockets, cartons or any other suitable packaging material.

- (2) Bulk containers in which citrus fruit or pummelos (Shaddocks) are packed shall --
- (a) be suitable, clean, dry and undamaged;
 - (b) be free from any visible signs of fungus growth; and
 - (c) be free from Arthropoda infestation.

PART II

PACKING REQUIREMENTS FOR CITRUS FRUIT

6. (a) Only citrus fruit of the same quality, cultivar and size (if sized) shall be packed in the same container.
- (b) Class 1 citrus fruit in the same container must be uniform in colour.
- (c) Each container shall be packed to firmly and to capacity.
- (c) Where more than one layer of citrus fruit is packed in any container the fruit in the top layer shall be representative of the entire contents of the container.
- (d) Citrus fruit shall be sized by diameter or weight: Provided that sizing shall be optional in the case of Class 2 and Choice grade.
- (e) If citrus fruit is packed in prepacked units, such units shall be packed in a suitable manner in an outer container: Provided that the prepacked units are clean, dry, undamaged and suitable.

Packing material

7. If packing material is used inside the containers, such packing material shall be clean, dry, odourless and of a quality such as to avoid causing any external or internal damage to the citrus fruit.

Stacking of containers on pallets

8. If containers containing citrus fruit are palletised --
- (a) a 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;
 - (d) local pallets shall have visible signs of fungus growth and Arthropoda infestation. This is only applicable to export. Imports will be covered by the ISPM 15;
 - (e) the containers shall be stacked firmly and square with each other and the pallet;
 - (f) only containers of the same dimensions shall be stacked in the same layer on the pallet; and
 - (g) the containers shall not be stacked upside-down on the pallet.

Strapping of pallet loads

9. (1) A pallet load of containers shall be strapped in a suitable manner.
- (2) If containers without lids are being used, a suitable covering shall be placed on top of the pallet load of containers, before the pallet load is strapped.

Provisions concerning presentation

10. (1) Uniformity

The contents of each package must be uniform and contain only apples of the same origin, variety, quality and size (if sized) and the same degree of ripeness. The visible part of the contents of the package must be representative of the entire contents except for mixed sizes and varieties.

TRACEABILITY REQUIREMENTS

11. Food business operators shall:

- (a) establish the traceability of apples 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 trade where such citrus fruit present a serious risk to the health of consumers;
- (e) immediately withdraw citrus fruit from the trade which were identified as food products that present a serious risk to the health of consumers;
- (f) immediately inform the Executive Officer of such withdrawal;
- (g) immediately make available to the Executive Office, on request any relevant 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.

PART III**MARKING REQUIREMENTS FOR CITRUS FRUIT**

12. (1) 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 visible 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 in the case of cartons and bulk containers all particulars shall be grouped on the same side:

- (a) The expression "Grapefruit", "Pummelos", "Kumquats", "Lemons", "Limes", "Oranges" or "Seville oranges".
- (b) The appropriate cultivar.
- (c) 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.
 - (d) 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".
 - (e) The appropriate class in accordance with regulation 3.
 - (f) The name, physical address or trademark of the producer or owner of the contents of container.
 - (g) The producer's code or the packhouse code (excluding imported apples) which is registered with the Executive Officer by the producer or packhouse, as the case may be: Provided that --
 - (i) the packhouse code shall be used if the origin of the citrus fruit cannot be traced back to the producer;
 - (ii) if a producer has more than one farm, each farm shall be registered separately; and
 - (iii) such code shall be preceded by the expression "Producer", "Packhouse", "Packer", "PUC", "PHC", "FBO" or any other suitable term having a similar meaning.
 - (h) The country of origin.
 - (i) Indication of date code/date on at least 90% of the containers and prepacked containers: Provided that if the packing date is expressed in date code, it shall be registered with the Executive Officer.
- (2) If citrus fruit is packed in pockets, or re-usable containers, the particulars required in subregulation (1)(b), (c), (e), (f) and (g) shall be indicated on labels which are specially designed for this purpose and which --
- (i) in the case of pockets, are affixed to the top ends of those pockets
 - (ii) in the case of re-usable containers, fit into the slot specially affixed for this purpose
- (3) If citrus fruit is packed in bulk containers, the particulars required in subregulation (1) (b), (c), (e), (f) and (g) shall be indicated on the two adjoining sides of the bulk containers by means of suitable stamps or labels specially designed for this purpose.
- (4) In the case of prepacked units of which the contents are not visible from the outside, the grade and cultivar shall appear on the outside of the container in block letters and numerals of at least 3 mm in height: Provided that the particulars may be omitted in the case of transparent prepacked units.
- (5) Subject to the provisions of subregulation (1), 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.
- (6) If containers are marked by means of affixing labels thereupon, such labels shall be clean and securely attached and shall not be superimposed on other labels.
- (7) When citrus fruit is displayed for sale in loose quantities --
- (a) any quantity of a particular class, cultivar or count, as the case may be, shall not be displayed mixed with citrus fruit of any other class, count or cultivar; and

- (b) if imported, the country of origin of the citrus fruit shall be indicated in clear, legible block letters on a notice board placed at the quantity of citrus fruit.

PROHIBITED PARTICULARS

13. No wording, illustration or other device of expression which constitutes a misrepresentation or which directly or by implication can create a misleading impression of the contents shall appear on a container which contains citrus fruit.

Display

14. (1) If citrus fruit in containers for sale is being displayed, such container shall be placed in such a manner to ensure that the prescribed markings on the containers or labels, as the case may be, are clearly visible.

(2) If citrus fruit are displayed for sale other than in containers, --

- (a) any quantity thereof of a particular class, count or cultivar, as the case may be, shall not be so displayed mixed with citrus fruit of any other class, size group or cultivar; and
- (b) the class and cultivar of such quantity of apples shall be displayed in clear legible block letters of at least 10 mm in height on a notice board prominently placed at such quantity of citrus fruit.

SAMPLING PROCEDURES

Obtaining a sample of the consignment

15. (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:

- (a) In the case of citrus fruit packed in containers:
 - (i) Select at random at least two per cent of the total number of containers: Provided that for the determination of the size, granulation, flesh diameter 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.
 - (ii) 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.
 - (b) In the case of citrus fruit packed in bulk containers:
 - (i) Draw at random from each consignment at least 25 per cent or two containers, whichever is the greatest, of the bulk containers concerned.
 - (ii) 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.
 - (iii) All three samples of 50 fruit shall be taken as the sample for the inspection.
- (2) (a) A sample obtained in terms of subregulation (1), depending on the type of container shall be inspected in the manner as set out in regulations 16 to 28.

- (b) 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.

Degrading

16. (1) If a consignment of citrus fruit has been downgraded to a lower class and an appeal in terms of regulation 12 is lodged in connection therewith, an inspector may --

- (a) apply any mark to the containers concerned which he may deem necessary for identification purposes; and
- (b) direct that such citrus fruit shall not without his consent be removed from the place where the inspection concerned was carried out or where the consignment is stored.

PART IV

METHOD OF INSPECTION

Determination of certain deficiencies

17. (1) The extent to which the deficiencies specified in column 1 of Table 1, occur in a consignment of citrus fruit shall be determined as follows:

- (a) Examine each of the fruit in the sample of the consignment by sensory on the basis of the colour prints for blemish standards as approved by the Executive Officer in order to determine whether such deficiency occur thereon or therein: Provided that --
 - (i) any fruit with a suspected internal deficiency may be dissected for the purposes of a confirmation or otherwise of the observation concerned; and
 - (ii) any fruit with suspected major frost damage, granulation or drying out shall be bisected parallel to the longitudinal axis of the fruit at a depth of 10 mm in the case of Class 1 and Class 2 and 15 mm in the case of Lowest Class, measured from the stem end of the segments, in order to determine whether it can be observed in the vesicles of the segments at that depth.
- (b) Determine the respective number of fruit in the sample with each such deficiency.
- (c) Express such numbers as percentages of the number of fruit in the sample.

(2) Such percentage shall represent the extent to which those deficiencies occur in the sample concerned.

(3) Notwithstanding the provisions of regulation 4(a), a consignment may also be approved for the applicable class if --

- (a) the number of fruit with the deficiencies specified in items 1 to 9, 11, 12, 13, 16, 17(a) and 18 of Table 2, in sample thereof jointly constitute not more than 10 per cent of the fruit in that sample;
- (b) the number of fruit with major frost damage. Granulation or drying out in a sample thereof ---

- (i) subject to the provisions of subregulation (4), constitutes not more than 5 per cent for Class 1 and Class 2 and not more than 10 per cent for Lowest Class of the fruit in that sample; or
 - (ii) subject to the provisions of subregulation (5), constitutes not more than 2 per cent for Class 1 and Class 2 and not more than 5 per cent for Lowest Class of the fruit in that sample.
- (4)
 - (a) In the case of Class 1 and Class 2 citrus fruit, the numbers of fruit referred to in subregulation (3)(b)(i) plus the number of fruit with minor frost damage, granulation or drying out shall jointly not exceed more than 20 per cent of the fruit in that sample.
 - (b) If, in the case of Class 1 and Class 2 citrus fruit, the number of fruit referred to in subregulation (3)(b)(i) exceeds per cent of the fruit in a sample --
 - (i) the total soluble solids content of that sample shall be at least 9,5 per cent; and
 - (ii) the acid content of that sample shall in the case of Navels, be at least 0,70 per cent and in the case of all other cultivars, be at least 0,80 per cent.
- (5)
 - (a) In the case of Class 1 and Class 2 citrus fruit, the number of fruit specified in subregulation (3)(b)(ii) plus the number of fruit with minor frost damage, granulation or drying out of the sample concerned, shall jointly not exceed 20 per cent of the fruit in that sample.
 - (b) If, in the case of Class 1 and Class 2 citrus fruit, the number of fruit referred to in subregulation (3)(b)(ii) exceeds 1 per cent of the fruit in a sample --
 - (i) the total soluble solids content of that sample shall be at least 9,5 per cent; and
 - (ii) the acid content of that sample shall in the case of Navels, be at least 0,70 per cent and in the case of all other cultivars, be at least 0,80 per cent.
 - (c) The provisions of paragraph (b)(i) and (ii) above shall *mutatis mutandis* apply in the case of Navels and Proteas where the total number of fruit with major and minor frost damage, granulation and drying out, jointly exceeds 50 per cent of the sample.

Determination of number of scale

18. The number of scale per fruit in a consignment of citrus fruit shall be determined by examining each of the fruit in the sample of the consignment by sensory in order to determine if the number of scale thereon exceed the applicable limits specified in Table 3.

Determination of juice content

19. (1) The juice content of the citrus fruit in a consignment shall be determined as follows:
- (a) Abstract at random a working sample of 12 fruit from the sample of the consignment.
 - (b) Determine the gross mass of the working sample
 - (c) Cut each fruit in the working sample in half at right angles to its longitudinal axis and determine, in the case of grapefruit, the flesh diameter thereof as contemplated in regulation 24.
 - (d) Press out the juice of the halved fruit as thoroughly as possible by using a suitable juice squeezer --
 - (i) in the case of soft citrus, remove the peels and use a juice press; and

- (ii) otherwise using a fluted conical citrus juice squeezer of the type known as "Sunkist Hand Reamer".
 - (e) Strain the juice thus obtained or, in the case of soft citrus, the pulp remaining in the juice press, through two thicknesses of muslin into a wide mouth jug with a capacity of approximately one litre.
 - (f) Twist the muslin in a tight ball and squeeze it until only damp pulp remains therein.
 - (g) Determine the combined mass of the pressed-out halved fruit or peels, as the case may be, and the damp pulp in the muslin.
 - (h) Determine the mass of the juice of the working sample by subtracting the mass determined in terms of paragraph (g), from the mass of the working sample.
 - (i) Express the mass thus calculated as a percentage of the mass of the working sample.
- (2) Such percentage shall represent the juice content of the fruit in the consignment concerned.
- (3) If the juice content thus determined, does not comply with the applicable requirements specified in Table 10 --
- (a) the juice content of a further working sample of the sample concerned shall be determined likewise;
 - (b) the average of the two determinations shall be calculated; and
 - (c) such average shall represent the juice content of the sample concerned.

Determination of total soluble solids (TSS) content

20. (1) The total soluble solids content of the citrus fruit in a consignment shall be determined as follows:
- (a) Fill a glass cylinder approximately 160 mm in length and 40 mm internal diameter, with juice obtained in terms of regulation 21.
 - (b) Place a Brix hydrometer of the applicable range, graduated in tenths of a per cent and standardised at 17,5°C or 20°C in the juice for approximately three minutes and take the reading on the scale of the hydrometer at the top of the meniscus.
 - (c) Place a chemical thermometer of the range 0°C to 50°C, graduated in degrees Celsius, for at least one minute in the juice and take the reading thereon.
 - (d) Add 0,2° to the reading obtained in terms of paragraph (b), and use the particulars set out in Table 8, to convert this figure with due regard to the temperature taken in terms of paragraph (c).
- (2) Such converted figure shall represent the percentage total soluble solids content of the fruit in the consignment concerned.
- (3) The total soluble solids contents of the oranges or Seville oranges in a consignment shall be determined with -
- (i) a calibrated refractometer;
 - (ii) if a refractometer without automatic temperature correction is used, the particulars set out in Table 9 of Annexure to convert this figure with due regard to the temperature of the juice;

- (iii) such converted figure shall represent the percentage total soluble solids content of the oranges or Seville-oranges in the consignment concerned.

Determination of acid content

21. (1) The acid content of the citrus fruit in a consignment shall be determined as follows:
- (a) Use a 20 ml pipette to transfer 20 ml of the juice obtained in terms of regulation 15 into a glass titration flask with a capacity of approximately 300 ml.
 - (b) Add 5 drops of phenolphthalein indicator, consisting of 4 grams phenolphthalein dissolved in 600 ml ethyl alcohol plus 400 ml of distilled water and sufficient decinormal sodium hydroxide solution to obtain a faint pink colour, to such juice.
 - (c) Titrate a 0,152 N sodium hydroxide solution into such juice by means of a burette with a capacity of 50 ml, calibrated in millilitres, until the acid in that juice is neutralised.
 - (d) Determine how many millilitres of the solution was used for such neutralising, and divide this figure by 20.
- (2) Such result shall represent the percentage acid content of the fruit in the consignment concerned.

Determination of the ratio between total soluble solids content and acid content

22. (1) The ratio between the total soluble solids content and the acid content of the fruit in a consignment shall be determined by dividing the percentage obtained in terms of regulation 20, by the percentage obtained in terms of regulation 21.

Determination of number of seeds per fruit

23. (1) The number of seeds per fruit in a consignment of citrus fruit shall be determined as follows:
- (a) Abstract at random a working sample of 12 fruit from the sample of the consignment.
 - (b) Cut each fruit in the working sample in half at right angles to its longitudinal axis.
 - (c) Remove all the mature seeds from the halved fruit and determine the number thereof.
 - (d) Divide such number by the number of fruit in the working sample.
- (2) The figure thus obtained shall represent the number of seeds per fruit in the consignment concerned.

Determination of flesh diameter of grapefruits

24. (1) The flesh diameter of the grapefruit in a consignment shall be determined by placing a measuring rule at random on the top or bottom half of each grapefruit which has been cut in half as contemplated in regulation 19(1)(c) so that the measuring edge of the rule passes through the longitudinal axis of the fruit, and measuring the fruit diameter and flesh diameter of each fruit.
- (2) If, during a determination in terms of subregulation (1), the measuring edge of a measuring instrument --
- (a) falls on an undeveloped segment, it shall be aligned to the nearest normal segment; and
 - (b) falls on the edge of a segment, it shall be aligned to that part of the segment where the skin is the thinnest..

(3) If the flesh diameter of one or more of the fruit thus measured does not comply with the requirements referred to in regulation 2(d), the remaining fruit 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 shall be measured as set out in subregulations (1) and (2).

(4) If a grapefruit with insufficient flesh diameter are present in a sample, the consignment concerned shall be degraded for Class 1 and Class 2 only if those fruit constitute more than 5 per cent of the sample concerned.

Determination of diameter of fruit

25. (1) The diameter of the citrus fruit in a consignment shall be determined by the measuring of the equatorial diameter of each of the fruit, by means of a measuring instrument calibrated in millimetres.

(2) If the equatorial diameter of one or more of the fruit thus measured does not comply with the requirements referred to in regulation 2(e) --

- (a) both the polar and equatorial diameters of such fruit shall be measured;
- (b) the average of the two diameters for each such fruit shall be determined; and
- (c) such average shall for the purposes of regulation 2(e), be deemed to be the equatorial diameter of the fruit concerned.

Determination of granulation

26. (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, rectangular to the longitudinal axis of the fruit, measured from the inside of the albedo, at the following depth:

- | | |
|---|-------|
| (aa) Grapefruit, lemon, lime and all other cultivars of oranges | 6 mm |
| (bb) Pummelos (Shaddock): | 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 ml, at right angles to the radius at this side: Provided that the presence of any granulated or dry juice residues 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 the depth.

(c) (i) Granulation and drying out, whatever the cause, found anywhere in the kumquats will be regarded as granulation.

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

Determination of the uniformity of fruit size

27. 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 juice requirements

28. (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 subregulation (11) (1), a working sample of at least 12 fruit.
 - (ii) Determine the juice content, total soluble solids content, acid content and the ratio between total soluble solids content to acid content in the manner set out in 15 and 18.
- (b) If the juice requirements thus determined do not comply with the requirements set out in subregulation 2(c):
- (i) the juice requirements of a further working sample shall be determined;
 - (ii) the average of 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; or
 - (bb) the average ratio between total soluble solids content to acid content is less than 0,4 difference from 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.

Application of results

29. (1) A consignment of citrus fruit presented for inspection, may be approved for the class under which it was presented or degraded to a lower class by an inspector by virtue of the average results obtained from one examination of a sample taken in terms of regulation 15(1) and (2).

(2) Subject to the provisions of the table hereunder a consignment of citrus fruit may be degraded to a lower class in the case of granulation, flesh diameter of grapefruit, number of seeds per fruit, degree of maturity and juice content by virtue of the average results obtained from two examinations.

Cultivar and internal quality factors	Minimum number of examinations
(a) Average juice percentage not more than 1% below the prescribed minimum	3
(b) Average total soluble solids to acid ratio not more than 0,2 below the prescribed minimum	3
(c) Average total soluble solids percentage not more than 0,2% below the prescribed minimum	3

Verification of biological and chemical contamination compliance

30. 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

31. 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.

OFFENCE AND PENALTIES

32. Any person who contravenes or fails to comply with the provisions of these regulations, shall be guilty of an offence and may upon conviction be liable to a fine or to imprisonment in terms of section 11 of Act No. 119 of 1990.

ANNEXURE A

TABLE 1

QUALITY STANDARDS

Quality factor	Class 1	Class 2	Lowest Class
1. (a) Underdeveloped or out of season	Shall not occur	Shall not occur	Shall not occur
(b) Overmaturity (too soft)	Shall not occur	Shall not occur	Shall not occur
(c) Internal quality requirements (grapefruit, oranges and soft citrus)	As set out in Table 10	As set out in Table 10	As set out in Table 10
(d) Seeds per fruit (grapefruit, limes, oranges and soft citrus)	As set out in Table 4	As set out in Table 4	As set out in Table 4
(e) Eureka Seedless	One fruit may contain a maximum of 2 seeds	One fruit may contain a maximum of 2 seeds	One fruit may contain a maximum of 2 seeds
2. External blemishes	Shall not occur	Fairly free	Reasonably free
3. Colour			
(a) Grapefruit	As depicted in item 10 of Table 2	As depicted in item 10 of Table 2	As depicted in item 10 of Table 2
(b) Pummelos	No maximum standard for green colour	No maximum standard for green colour	No maximum standard for green colour
(c) All cultivars	Uniform in colour	Uniform in colour	Uniform in colour
4. Foreign matter	As determined by the Executive Officer	As determined by the Executive Officer	As determined by the Executive Officer
5. Frost damage, granulation and drying out	As set out in item 5 of Table 2	As set out in item 5 of Table 2	As set out in item 5 of Table 2

TABLE 2

MAXIMUM PERMISSIBLE DEVIATIONS BY NUMBER

Quality factor	Class 1	Class 2	Lowest Class
1. Decay	Shall not occur	1,5%: Provided that not more than one container or 10% of the containers in a sample, whichever is the greatest, contain not more than 5% of such fruit per container	1,5%: Provided that not more than one container or 10% of the containers in a sample, whichever is the greatest, contain not more than 5% of such fruit per container
2. Factors which may cause decay			
(a) Major injuries	0%	3%	5%
(b) Minor injuries	2%	5%	5%
(c) Skin weakness	2%	5%	5%
(d) Deviations specified in paragraph (a) above and item 1 of this table collectively: Provided that such deviations shall individually be within the specified limits	0%	3%	3%
(e) Deviations specified in paragraph (a), (b) and (c) above and item 1 of this table collectively; Provided that such deviations shall individually be within the specified limits	2%	5%	5%
3. Greening disease	0%	2,5%	2,5%
4. Superficial black fungus growth on scale residues	0%	2,5%	2,5%
5. Frost damage, granulation and drying out			

Quality factor	Class 1	Class 2	Lowest Class
(a) (i) Major granulation: Provided that if any consignment exceeds 2% major granulation a higher internal quality shall apply by increasing the minimum TSS by 0,5%	0%	(i) 2% if major and minor granulation combined exceed 25% (ii) 5% if major and minor granulation combined do not exceed 25%	(i) 2% if major and minor granulation combined exceed 25% (ii) 5% if major and minor granulation combined do not exceed 25%
(ii) Navels	0%	2% if major and minor granulation combined do not exceed 25%: Provided that less than 50% of the navels may show minor granulation	2% if major and minor granulation combined do not exceed 25%: Provided that less than 50% of the navels may show minor granulation
(b) Minor frost damage, granulation and drying out: Provided that no major granulation is present	Permissible	Permissible	Permissible
6. Arthropoda infestation Occurrence of scale: No fruit shall contain more than twice the permitted number of scale per fruit with the exception of a tolerance of two fruit per consignment or 0,4% of the fruit examined whichever is the greater: Provided that the percentage of fruit with scale in excess of the number permitted per fruit, for the diameter concerned, does not exceed 2%	5%	10%	10%

	Quality factor	Class 1	Class 2	Lowest Class
7.	Blemishes, wilt, shrivelling, skin defects (skinburn, sunburn with drying out of flavedo and albedo, rough, coarse, thick, ribbed or ridged, creasing, other types of skin damage excluding injuries), malformation, bruises resulting in a soft flesh structure, underdeveloped or out of season, overripeness, hailmarks, oleocellosis and foreign matter	5%	15%	20%
8.	Too small flesh diameter in the case of grapefruit	5%	5%	5%
9.	Long stems	5%	5%	5%
10.	Colour			
	(a) External			
	(i) Insufficient colour development	5%	6%	6%
	(ii) Star Ruby grapefruit shall have at least a sign of pink pigmentation visible in the peel	5%	10%	10%
	(b) Internal	5%	10%	10%
11.	Absence of buttons	20%	20%	20%
12.	(a) Deviations from requirements for containers and packing requirements prescribed in subitems (9), (10), (11) and (12)	5%	10%	10%
	(b) Incorrectly sealed flaps	5%	5%	5%

Quality factor	Class 1	Class 2	Lowest Class
(excluding loose flaps)			
(c) Loose flaps	Not permissible	Not permissible	Not permissible
13. Minimum diameter and uniformity in size			
(a) Minimum diameter (too small)	10%	10%	10%
(b) Lack of uniformity in size in the same container	10%	10%	10%
14. Deviations from marking requirements as prescribed in subitem (14) excluding date codes	Two containers per consignment	Two containers per consignment	Two containers per consignment
15. Unpunched out ventilation holes	4%	4%	4%
16. Absence of date codes	50%	50%	50%
17. (a) Deviations not specified in items 1 to 8 of this table collectively, that affect the exterior appearance	5%	10%	10%
(b) Deviations specified in paragraph (a) above and items 1 to 8 of this table collectively, that influence the external appearance: Provided that such deviations shall be individually within the specified limits: Provided further that the devia-	5%	15%	20%

Quality factor	Class 1	Class 2	Lowest Class
<p>tion for creasing for Class 2 be included in this collective 20%</p>			
18. Endoxerosis in case of Lemons			
(a) Minor endoxerosis	0%	5%	5%
(b) Major endoxerosis (dark brown to black)	0%	1,5%	1,5%

NOTE

- No specifications

TABLE 3
LIMITS FOR SCALE

Kind of fruit	Size reference	Diameter (mm)	Maximum number of scale (All types collectively) per fruit (All classes)
Grapefruit	1	109 - 139	14
	2	100 - 119	13
	3	93 - 110	12
	4	88 - 102	11
	5	84 - 97	10
	6	81 - 93	9
	7	77 - 89	9
	8	73 - 85	8
	9	70 - 80	8
Pummelos (Shaddocks)	1	156 - 170	19
	2	148 - 162	18
	3	140 - 154	17
	4	132 - 146	16
	5	123 - 138	15
	6	116 - 129	14
	7	110 - 118	13
Lemons	0	79 - 90	8
	1	72 - 83	8
	2	68 - 78	7
	3	63 - 72	6
	4	58 - 67	6
	5	53 - 62	5
	6	48 - 57	5
7	45 - 52	4	
Limes	1	58 - 67	4
	2	53 - 62	4
	3	48 - 57	4
	4	45 - 52	4
	5	42 - 49	4
Oranges and Seville- oranges	0	92 - 110	10
	1	87 - 100	10
	2	84 - 96	10
	3	81 - 92	9
	4	77 - 88	9
	5	73 - 84	8
	6	70 - 80	8
	7	67 - 76	7
	8	64-73	7
	9	62 - 70	6
	10	60 - 68	6
	11	58 - 66	5
	12	56 - 63	5
13	53 - 60	5	
Soft citrus	1 - xxx	78 and above	8
	1 - xx	67 - 78	7
	1 - x	63 - 74	7
	1	63 - 72	7
	2	58 - 69	6
	3	54 - 64	6
4	50 - 60	6	
5	46 - 56	5	

Kind of fruit	Size reference	Diameter (mm)	Maximum number of scale (All types collectively) per fruit (All classes)
Soft citrus (continued)	6	43 - 52	5
	7	41 - 48	5
	8	39 - 46	4
	9	37 - 44	4
	10	35 - 42	4

TABLE 4
LIMITS FOR SEED CONTENT

Kind of fruit	Cultivar	Maximum of average number of mature seeds per fruit in a working sample of 12 fruit		
		Class 1	Class 2	Lowest Class
Grapefruit	(a) Star Ruby	5		
	(b) Cultivars not mentioned above	9		
Pummelos (Shaddocks)	All cultivars	9		
Limes	(a) If presented as seedless	One fruit may contain a maximum of 12 seeds		
	(b) If not presented as seedless	10		
1. Oranges	(a) Atwood, Autumn Gold, Bahianinha, Barnfield Summer, Brewer Early, Cambria, Cara Cara, Chislett Summer, Dream, Fukumoto, Gillemberg, Glenora Late, Lane Late, Leng, McClean, Navelina, Newhall, Painter, Early	None		
1. Mandarins	(a) Ellendale	3: Provided that one fruit may contain a maximum of 6 seeds	3: Provided that one fruit may contain a maximum of 6 seeds	3: Provided that one fruit may contain a maximum of 6 seeds
	(b) All other cultivars not mentioned above	Typical of the cultivar	Typical of the cultivar	Typical of the cultivar
2. Clementines	Arrufatina, Cadoux, Caffin, Clemenpons, Clementard, Clem Late, Corsica 2, Esbal, Guillermina, Hernandina, Marisol, Nules, Orogrande, Romulus, Oroval, SRA Selections	3: Provided that one fruit may contain a maximum of 6 seeds	3: Provided that one fruit may contain a maximum of 6 seeds	3: Provided that one fruit may contain a maximum of 6 seeds
3. Satsumas	(a) Dobashi-Beni, Inamura, Kuno, Miho Wase, Migagawa Wase,	None	4	6

Kind of fruit	Cultivar	Maximum of average number of mature seeds per fruit in a working sample of 12 fruit		
		Class 1	Class 2	Lowest Class
	Ohtsu, Okitsu Wase, Owari, Uenounshiu, Palmer, Powell			
	Summer, Robyn, Royal Late, Santa Catarina, Tulegold, Washington, Witkrans			
	(b) Amanzi, Benny, Clanor, Du Roi, Kleynhans, Maroc Late, McClean, Olinda, Valentine		9	
	(c) Tomango		6	
	(d) Shamouti		6	
	(e) MidKnight		1 ¹⁾	
	(f) Delta	One fruit may contain a maximum of 2 seeds		
	(g) Orange cultivars not mentioned above	Typical for cultivar		
2. Seville oranges	All cultivars	Typical of cultivar		

NOTE

- ¹⁾ One fruit in the working sample may contain a maximum of 5 seeds: Provided that if only one fruit exceeds that number, a second working sample shall be drawn. If the second working sample has no fruit which contain more than 5 seeds, with the average not exceeding 1 seed per fruit, then the consignment may be passed.

TABLE 5

FLESH DIAMETER - GRAPEFRUIT AND POMELO'S

Fruit diameter (mm)	Minimum flesh diameter (mm) - All cultivars
70	56
71	56
72	57
73	57
74	58
75	59
76	59
77	60
78	61
79	61
80	62
81	63
82	63
83	64
84	64
85	65
86	66
87	67
88	67
89	68
90	69
91	70
92	70
93	71
94	72
95	72
96	73
97	74
98	74
99	75
100	76
101	77
102	77
103	78
104	79
105	80
106	80
107	81
108	82
109	83
110	83
111	83
112	84
113	85
114	85
115	86
116	87
117	88
118	88
119	89
120	90
121	90
122	91
123	91

Fruit diameter (mm)	Minimum flesh diameter (mm) - All cultivars
124	91
125	92
126	92
127	92
128	93
129	93
130	93
131	93
132	93
133	94
134	94
135	94
136	94
137	94
138	94
139	94

TABLE 6
SIZE REFERENCES AND DIAMETER REQUIREMENTS

Kind of fruit	Size reference	Diameter (mm)
Grapefruit	1	109 - 139
	2	100 - 119
	3	93 - 110
	4	88 - 102
	5	84 - 97
	6	81 - 93
	7	77 - 89
	8	73 - 85
	9	70 - 80
Pummelos (Shaddocks)	1	156 - 170
	2	148 - 162
	3	140 - 154
	4	132 - 146
	5	123 - 138
	6	116 - 129
	7	110 - 118
Lemons	0	79 - 90
	1	72 - 83
	2	68 - 78
	3	63 - 72
	4	58 - 67
	5	53 - 62
	6	48 - 57
Limes	1	58 - 67
	2	53 - 62
	3	48 - 57
	4	45 - 52
	5	42 - 49
Oranges and Seville-oranges	0	92 - 110
	1	87 - 100
	2	84 - 96
	3	81 - 92
	4	77 - 88
	5	73 - 84
	6	70 - 80
	7	67 - 76
	8	64 - 73
	9	62 - 70
	10	60 - 68
	11	58 - 66
	12	56 - 63
13	53 - 60	
Soft citrus	1 - xxx	78 and above
	1 - xx	67 - 78
	1 - x	63 - 74
	1	63 - 72
	2	68 - 69
	3	54 - 64
	4	50 - 60
	5	46 - 56
	6*	43 - 52
7	41 - 48	
8	39 - 46	

Kind of fruit	Size reference	Diameter (mm)
Soft citrus (continued)	9	37 - 44
	10	35 - 42

NOTE

- * Size below 45 mm refer only to Clementines

TABLE 7
CULTIVAR INDICATIONS ON CONTAINERS

Kind of fruit	Cultivar	Indication on container
1. Grapefruit (a) White (b) Pink (c) Red	Marsh; Nartia; Jackson Oroblanco® Henderson; Ray Ruby; Redblush; Ruben Seedless Ray Ruby NelRuby; Oran Red; Rio Red; Star Ruby; Flame	Marsh; White Grapefruit; Jackson; Sweet Sunrise Sweet White Grapefruit; White Grapefruit Cultivar followed by the word "Grapefruit" Rosé; Ruby Red; Pink Grapefruit Ray Ruby; Rosé; Ruby Red; Pink Grapefruit Star Ruby; Red Grapefruit; Flame; Star Ruby; Red Grapefruit
2. Pummelos (Shaddocks)* (a) White (b) Pink	Melogold Oroblanco, Chandler, Java Shaddock; Pomelit	Melogold; White Pummelo; Pomelo; Pummelo; Pompelmous Oroblanco; White Pummelo; Pompelmous Pink Pummelo; Pomelo; Pummelo; Shaddock; Pompelmous Pink Pummelo; Pomelit; Pomelo; Pummelo; Shaddock; Pompelmous
Kumquats (a) Oblong (b) Round	Nagami Meiwa	Nagami Meiwa
Lemons	Eureka Eureka Seedless Fino Genoa	Eureka Eureka! Seedless™ Fino Genoa

Kind of fruit	Cultivar	Indication on container
	Limoneira 8A Lisbon Verna	Limoneria Lisbon Verna Lemons [#]
Limes (a) Small fruit (Mexican limes) (b) Large fruit (acid limes)	West Indian Bearss (Tahiti, Persian)	West Indian Bearss Limes [#]
Oranges 1. Navels (a) Common	Atwood, Bahianinha, Bruwer Early, Dream, Fukumoto, Leng, McClean Navelina, Newhall, Painter Early, Palmer, Santa Catarina, Tulegold, Washington	Navels; Cultivar followed by the word "Navels"
(b) Late (c) Red	Lane Late Autumn Gold, Barnfield Summer, Cambria, Chislett Summer, Gillemberg, Glenora Late, Powell Summer, Robyn, Royal Late, Witkrans Cara Cara	Lane Late; Navels; Navelate Redstar TM , Ruby Navel; Star Navel (Cara Cara)
2. Common Oranges (a) Pigmented (b) Non-pigmented	Moro Sanguinelli; Sanguinello Tarocco Tomango Tunisian Maltaise Clanor Delicia Delta Kiyomi MidKnight Salustiana Shamouti Tomango Amanzi, Benny, Du Roi, Kleynhans, Maroc Late, McClean, Olinda, Valentine	Moro Sanguinelli Tarocco Tomango *Protea Maltaise Clanor, *Protea Delicia Delta, Delta Seedless, Delta Valencia, Valencia, Valencia Seedless Kiyomi MidKnight, Valencia Salustiana Shamauti Tomango; *Protea, Valencia Valencia; Cultivar followed by the word "Valencia"
3. Seville Oranges (Bitter/sour oranges)	Bitter Seville (Daidai, Taitai)	#Seville

Kind of fruit	Cultivar	Indication on container
Soft citrus 1. Mandarins	Afourer™, Nardocott African Sunset Ambersweet Bay Gold Daisy, Fortune Ellendale Empress, Imperial Fairchild Fallglo Hadas Honey Gold Jacintos Kiyomi Minneola Tangelo Mor Murcott Nectar Nouvelle	\$Afourer™, Nardocott, Clemengold™, Delite™ #African Sunset #Ambersweet #Baby gold Tangerines Ellendale Empress Fairchild #Fallglo #Hadas #Honey Gold Jacintos Kiyomi Minneola #Mor Murcott #Nectar \$Nouvelle
	Nora or Clemenvilla Or, Orri, Clemen'Or™ Ortanique Page Rishan Roma Shani Sunset Sweet Spring Temple Sue-Linda, Thoro Temple Valley Gold Winola	Nora or Clemenvilla #Or, Orri, Clemen'Or™ Tambor Page #Rishon \$Roma #Shani #Sunset #Sweet Spring Minki; Royal; Scarlett; Temple #Valley Gold #Winola
2. Clementines	Arrufatina, Cadoux, Caffin, Clemenpons, Clementard, Clem Late, Corsica 2, Esbal, Guillermina, Hernandina, Marisoll, Nules, Orogrande, Oronules, Oroval, SRA selections Clemenpons	Clementines, Clem Lates, Clementine Late, Cleuropons™ Clemenpons
Satsumas	Dohashi-Beni, Imamura, Kuno, Mino Wase, Miyagawa Wase, Ohtsu, Okitsu Wase, Owari, Uenounshia	Satsumas

NOTE:

Indication of the cultivar is optional.

* The indication concerned shall only be used if a working sample of fruit on average contains 7 or more but less than 10 mature seeds per fruit.

\$ In case of Oranges no indication of a cultivar need to be marked on a container.

@ Oroblanco is a Grapefruit X Pummelo Hybrid

TABLE 8

BRIX HYDROMETER READING CORRECTION TABLES

TEMPERATURE CORRECTION FOR BRIX-HYDROMETER STANDARDISED AT 20°C

Temp. °C	Brix reading														
	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Subtract from Brix Reading														
5	.49	.51	.52	.54	.56	.58	.60	.61	.63	.65	.67	.68	.70	.72	.73
6	.48	.49	.51	.52	.54	.55	.57	.58	.60	.62	.63	.65	.66	.68	.69
7	.46	.47	.49	.50	.51	.53	.54	.55	.57	.58	.59	.61	.62	.64	.65
8	.44	.45	.46	.48	.49	.50	.51	.53	.54	.55	.56	.57	.59	.60	.61
9	.41	.42	.44	.45	.46	.47	.48	.49	.50	.51	.52	.53	.54	.55	.56
10	.39	.40	.41	.42	.43	.44	.45	.46	.47	.48	.49	.50	.50	.51	.52
11	.36	.37	.38	.39	.40	.40	.41	.42	.43	.44	.44	.45	.46	.47	.48
12	.33	.34	.34	.35	.36	.37	.37	.38	.39	.40	.40	.41	.42	.42	.43
13	.29	.30	.31	.32	.32	.33	.33	.34	.35	.35	.36	.36	.37	.38	.38
14	.26	.27	.27	.28	.28	.29	.29	.30	.30	.31	.31	.32	.32	.33	.33
15	.22	.23	.23	.24	.24	.25	.25	.26	.26	.26	.27	.27	.28	.28	.28
16	.18	.18	.19	.19	.20	.20	.21	.21	.21	.22	.22	.22	.23	.23	.23
17	.14	.14	.15	.15	.15	.16	.16	.16	.16	.17	.17	.17	.18	.18	.18
18	.09	.10	.10	.10	.10	.11	.11	.11	.11	.11	.12	.12	.12	.12	.12
19	.05	.05	.05	.05	.05	.05	.05	.06	.06	.06	.06	.06	.06	.06	.06
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Add to Brix Reading														
21	.05	.05	.05	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06
22	.10	.10	.10	.11	.11	.11	.11	.11	.12	.12	.12	.12	.12	.12	.12
23	.16	.17	.17	.17	.17	.17	.17	.18	.18	.18	.18	.18	.19	.19	.19
24	.22	.22	.23	.23	.23	.23	.24	.24	.24	.24	.25	.25	.25	.26	.26
25	.29	.29	.29	.30	.30	.30	.30	.31	.31	.31	.31	.32	.32	.32	.33
26	.35	.35	.35	.36	.36	.36	.37	.37	.37	.38	.38	.38	.39	.39	.39
27	.42	.42	.42	.43	.43	.43	.44	.44	.44	.45	.45	.45	.46	.46	.46
28	.48	.49	.49	.49	.50	.50	.51	.51	.51	.52	.52	.53	.53	.53	.54
29	.55	.56	.56	.56	.57	.57	.58	.58	.58	.59	.59	.60	.60	.60	.61
30	.62	.63	.63	.63	.64	.64	.65	.65	.65	.66	.66	.67	.67	.67	.68

In case of Grapefruit, Oranges and Soft Citrus.

TABLE 9

**TEMPERATURE CORRECTION TABLE WHERE THE REFRACTOMETER IS USED AT
TEMPERATURES OTHER THAN 20°C**

Temp °C	Percentage of sugar										
	0	5	10	15	20	25	30	40	50	60	70
	Subtract for percentage of sugar										
10	0.50	0.54	0.58	0.61	0.64	0.66	0.68	0.72	0.74	0.76	0.79
11	.46	.49	.53	.55	.58	.60	.62	.65	.67	.69	.71
12	.42	.45	.48	.50	.52	.54	.56	.58	.60	.61	.63
13	.37	.40	.42	.44	.46	.48	.49	.51	.53	.54	.55
14	.33	.35	.37	.39	.40	.41	.42	.44	.45	.46	.48
15	.27	.29	.31	.33	.34	.34	.35	.37	.38	.39	.40
16	.22	.24	.25	.26	.27	.28	.28	.30	.30	.31	.32
17	.17	.18	.19	.20	.21	.21	.21	.22	.23	.23	.24
18	.12	.13	.13	.14	.14	.14	.14	.15	.15	.16	.16
19	.06	.06	.06	.07	.07	.07	.07	.08	.08	.08	.08
	Add to percentage of sugar										
21	0.06	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08
22	.13	.13	.14	.14	.15	.15	.15	.15	.16	.16	.16
23	.19	.20	.21	.22	.22	.23	.23	.23	.24	.24	.24
24	.26	.27	.28	.29	.30	.30	.31	.31	.31	.32	.32
25	.33	.35	.36	.37	.38	.38	.39	.40	.40	.40	.40
26	.40	.42	.43	.44	.45	.46	.47	.48	.48	.48	.48
27	.48	.50	.52	.53	.54	.55	.55	.56	.56	.56	.56
28	.56	.57	.60	.61	.62	.63	.63	.64	.64	.64	.64
29	.64	.66	.68	.69	.71	.72	.72	.73	.73	.73	.73
30	.72	.74	.77	.78	.79	.80	.80	.81	.81	.81	.81

In case of Grapefruit, Oranges and Soft citrus.

TABLE 10
JUICE REQUIREMENTS

Type of fruit	Minimum juice content	Minimum ratio between total soluble solids content to acid content
(a) Grapefruit	40%	5,0:1
(b) Pummelos (Shaddocks)	35%	9,0:1
(c) Lemons	35%	-
(d) Limes	45%	-
(e) Oranges		
(i) Delta	48%	7,5:1
(ii) Midnight	48%	7,5:1
(iii) All other orange cultivars	42%	7,0:1
(iv) Seville Oranges	-	-
(f) Soft citrus	45%	7,0:1

Note:

- No specifications