

DRAFT

DEPARTMENT OF AGRICULTURE

No. R.

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

REGULATIONS RELATING TO THE GRADING, PACKING AND MARKING OF MANGOES 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; and
- (b) determined that the said regulations shall come into operation on the date of publication.

SCHEDULE

Definitions

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

"**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 skin defect on the surface of the mango which detrimentally affects the appearance of the mango;

"**bruise**" means any bruise or bruises which shows an indentation or results in discolouration directly under the skin;

"**clean**" means free from visible spray and wax residues, dirt or foreign matter;

"**consignment**" means --

- (a) a quantity of mangoes 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 mangoes which is divided into different cultivars, classes, pallet loads, counts, count groups, trademarks or types of packaging, every quantity of each of the different cultivars, classes, pallet loads, counts, count groups, trademarks or types of packaging;

"**container**" means the immediate container in which mangoes are packed directly and 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 mangoes packed in a container;

"**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 mangoes;

"**dirty fruit**" means mangoes that are visibly soiled or marked with foreign matter excluding chemical residues;

"**foreign matter**" means any material that is not normally present in, on or between the mangoes, 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;

(b) wax which is manufactured for the prevention of desiccation;

"injury" means any wound or puncture which has pierced the skin of the mango and exposes the flesh, as well as insect puncture marks which have pierced the skin, with the exception of such wounds or punctures which have become completely callused;

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

"jelly seed" means a stage where the colour of the flesh of the fruit near the pip, has changed from an opaque to a translucent yellow colour;

"mango" means the fruit of the cultivars which are grown from the species *Mangifera indica*;

"maturity" means a state of development of a mango to such an extent that it ensures the proper completion of the ripening process;

"over-mature" means the physiological stage of the fruit, where it has passed the optimal eating quality;

"sap burn" means stains or elongated streaks on the skin of the fruit, brought about by the running or trickling down of the turpentine juice, so as to "burn" the surface of the fruit when the pedicel has been snapped or broken off;

"softnose" means a condition where discolouring and spontaneous signs of softening occur at the flower-end of the mango;

"sound" means free from insect damage, external or internal physiological or other disorders, which may detrimentally affect the quality of the mangoes;

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

"sunburn" means a condition on the surface of the skin of a mango giving it a yellow, brown or black colour and which is caused by excessive exposure to the sun;

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

"well-formed" means that the mango has a shape which is typical of the cultivar concerned.

Restrictions on the sale of mangoes

2. (1) No person shall sell mangoes in the Republic of South Africa --
- (a) unless the mangoes are sold according to the classes referred to in regulation 3;
 - (b) unless the mangoes comply with the requirements regarding quality referred to in regulation 4;
 - (c) unless such mangoes are packed in a container and in the manner prescribed in regulations 5, 6, 7, 8 and 9 (excluding mangoes sold in loose quantities directly to the informal trade);
 - (d) unless such mangoes are marked with the particulars and in the manner prescribed in regulation 10;
 - (e) if such mangoes contain a substance so prescribed as a substance which it may not contain according to Act 36 of 1947;
 - (f) if the mangoes 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) Mangoes sold by vendors in streets and other public places are excluded from the stipulations in subregulation 2(1)(a), (b), (c), (d), (f) and (g): Provided that if such mangoes are marked in terms of items 10 and 11 it shall be subjected to the aforementioned stipulations.

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

PART I QUALITY STANDARDS

These standards shall be complied with at the packhouse stage or upon arrival in the municipal markets or any similar setting and/or conveyance.

Classes of mangoes

3. There are three classes of mangoes, namely "Class 1", "Class 2" and "Lowest Class".

Standards for classes of mangoes

4. (1) "Class 1", "Class 2" and unclassified mangoes --

- (a) shall respectively comply with the quality standards for classes, permissible cultivars, mass ranges and size codes set out in Tables 1, 3 and 4 of the Annexure; and
- (b) may deviate from the specifications prescribed in paragraph (a), to the extent set out in Table 2 of the Annexure.

(2) "Lowest Class" mangoes shall comprise of mangoes that do not comply with the specific standards and requirements for "Class 1" and "Class 2" mentioned in subregulation (1), but which are still edible, intact, normal in appearance and free from any foreign or off-flavours and odours which indicate the start or presence of decay.

(3) For the purpose of this regulation "unspecified defects" means any quality factor detrimentally affecting the quality of the fruit and which is not mentioned in Table 1 of the Annexure.

PART II PACKING REQUIREMENTS

Requirements for containers

5. (1) Mangoes shall be packed in containers that are:

- (a) suitable, clean, undamaged;
- (b) not impart a foreign taste or odour to the mangoes;
- (c) strong and rigid enough to ensure that the original shape shall be retained and shall not bulge out, dent in, break or tear during normal storage, handling or transport; and
- (d) provided with suitable lids, where applicable.

Packing requirements

6. (a) Mangoes in the same container shall be uniform with regard to ripeness, shape, size, appearance and cultivar.

(b) If each mango is wrapped separately, the wrapping material shall be suitable. Printed newspaper or scrap paper shall not be used for this purpose.

- (c) Each container shall be packed firmly and to capacity.
- (d) If mangoes are 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.
- (e) Where applicable, not more than 15 per cent of the ventilation holes of the carton containers in a consignment may be blocked by unpunched-out portions and/or mangoes.
- (f) Mangoes shall be graded and packed according to the mass ranges and size codes set out in Table 4 of the Annexure.
- (g) Mangoes may be treated with a suitable wax prior to packing for the prevention of desiccation.

Packing material

7. If packing material is used inside the containers, such packing material shall be new, dry, odourless, not transmit to the mangoes 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 mangoes.

Stacking of containers on pallets

8. If containers of mangoes are palletised --
- (a) the pallet shall be clean, undamaged and suitable and not transmit to the mangoes any harmful substance or any substance that may be injurious to human health;
 - (b) pallets manufactured from wood shall be without bark;
 - (c) pallets shall be free from any visible signs of fungus growth;
 - (d) pallets shall be free from Arthropoda infestation;
 - (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 a pallet; and
 - (g) the containers shall not be stacked upside-down on a pallet.

Strapping of pallet loads

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

MARKING REQUIREMENTS

10. (1) Each container containing mangoes shall be marked clearly, indelibly, legibly, neat and not untidy, upside down or askew, in the appropriate spaces, in block letters and numerals with the following particulars on one visible short or long end of the lid or container, where lids are not used, by printing, stamping or applying it by means of specially designed stickers:

- (a) The country of origin: Provided that no abbreviations or the expression "South Africa" on its own shall be used or the expression "for Domestic Sale".
- (b) The name and physical or postal address of the producer, packer or owner of the container.
- (c) The packing date on at least 50% of the containers: Provided that if the packing date

is expressed in a code, it shall be registered with the Executive Officer: Provided further that such packing date may be applied anywhere on the container.

- (d) The expression "Class 1", "Class 2" or "Lowest Class", as the case may be.
- (e) The expression "Mangoes": Provided that if the contents are visible from the outside, this expression does not have to be indicated on the container.
- (f) The appropriate cultivar.
- (g) The appropriate mass range set out in Table 4 of the Annexure.
- (h) The appropriate count, preceded by the expression "Count", if it differs from that of the appropriate size code.
- (i) (optional) The appropriate size code as set out in Table 4 of the Annexure, preceded by the expression "Size Code" or "Size reference".
- (j) The producer's code or the packhouse code 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 mangoes 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.

(2) 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.

Loose quantities of mangoes

11. When mangoes are 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 mangoes of any other class, cultivar or count; and
 - (b) adherence to the marking requirements is optional: Provided that if marked, the class and cultivar of such quantity of mangoes shall be indicated in clear, legible block letters and numerals of at least 10 millimetres in height on a notice board prominently placed at such a quantity of mangoes.

Prohibited particulars

12. 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 be marked on a container containing mangoes.

PART III SAMPLING PROCEDURES

Obtaining a sample of the consignment

13. An inspector shall draw at random for inspection purposes at least two per cent of the containers in a consignment and shall be satisfied that the containers so drawn are representative of the consignment concerned.

Obtaining an inspection sample

14. An inspection sample shall be drawn from each container obtained in accordance with regulation 10 and shall consist of the entire contents of the container. In the case of containers containing more than 20 mangoes, a sample shall consist of at least 20 randomly chosen fruit.

Deviating sample

15. 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 mangoes which are noticeably inferior to or differ from the contents of containers which represent the remainder of the pallet load, truck load or consignment, the inspection result shall be based only on the containers derived from the deviating portion of the pallet load, truck load or consignment and further samples required for inspection shall be drawn from this deviating portion.

**PART IV
INSPECTION METHODS*****Determination of internal quality***

16 (a) A sample shall be drawn from the consignment concerned in accordance with item 13

Determining the number of fruit to be tested

- (b) (i) Draw ten fruit at random from each container drawn in accordance with subitem (a).
- (ii) If a container contains less than ten fruit, the entire contents of the container shall be tested.

Testing for maturity

- (c) (i) The mango must be held firmly with one hand.
- (ii) Cut the mango through the equatorial axis (through the seed) with a suitable guillotine. (Note: In the case of the cultivar Isis, an equatorial cut must be made between the stem-end and the pip.)
- (iii) Then using the above-mentioned guillotine, make a polar cut on the ripest side of any half of the fruit, perpendicularly through the flesh, 50 percent between the skin and pip.
- (iv) Determine if each of the ten mangoes comply with the prescribed minimum colour requirements for the cultivar concerned, as set out in Table 2 of Annexure 1, by using the 1998 Mango Colour Chart.
- (v) Exclude fruit that show signs of spontaneous ripening (internal softening) from each sample.

**PART V
OFFENCE AND PENALTIES**

17. 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 the Act.

Appeal

18. (1) Any person who appeals in terms of section 10(1) of the Act against a decision or direction of an inspector, shall submit a written notice of appeal to an inspection within one day after he has been notified of the said decision or direction unless that day falls on a Saturday, Sunday or public holiday in which case the appeal shall be submitted on the first following working day.

(2) Such person shall pay the prescribed fee with the inspector or any office of the Executive Officer or the Assignee, as the case may be: Provided that such fee shall be paid in terms of each separate consignment, and provided further that if the notice of appeal and the fee are not submitted and paid within the period specified in subregulation (1), the appellant shall lose his right of appeal.

(3) An inspector may apply any mark or marks which he/she may deem necessary for identification purposes to the mangoes in respect of which an appeal has been submitted, or to the containers thereof, and such mangoes shall not without his/her consent, be removed from the place where they were inspected or where they are stored.

(4) The Executive Officer shall designate at least three persons to serve as an appeal board.

(5) Such an appeal board shall give the appellant or his representative at least two hours notice of the time and place determined for the hearing of the appeal and may, after the mangoes concerned have been produced and identified and all interested parties have been heard, instruct all persons to leave the place where the appeal is being considered: Provided that the appeal board may make use of persons to assist in an advisory capacity.

(6) An appeal board shall decide an appeal within 48 hours (excluding Sundays and public holidays) after it was submitted, and its decision shall be final.

(7) If the mangoes concerned are not produced at the time and place determined by the appeal board, the amount paid in respect thereof shall be forfeited.

ANNEXURE I

TABLE 1

STANDARDS FOR CLASSES OF MANGOES

Quality factor	Class 1	Class 2	Unclassified
(a) General appearance	Sound, attractive, clean and fresh	Sound, attractive, clean and fresh	-
(b) Shape	Characteristic of the cultivar concerned	Characteristic of the cultivar concerned	-
(c) Maturity	<p>(aa) Mature and sufficiently developed for the cultivar concerned</p> <p>(bb) When the fruit is bisected as set out in item 15(3), minimum of 50 per cent (half) of the flesh between the skin and the pip, on the ripest side of the fruit, shall be of a pale yellow colour (a minimum index 0,3 as depicted in the 1998 Mango colour chart): Provided that no signs of softening are present</p>	<p>(aa) Mature and sufficiently developed for the cultivar concerned</p> <p>(bb) When the fruit is bisected as set out in item 15(3), minimum of 50 per cent (half) of the flesh between the skin and the pip, on the ripest side of the fruit, shall be of a pale yellow colour (a minimum index 0,3 as depicted in the 1998 Mango colour chart): Provided that no signs of softening are present</p>	<p>(aa) Mature and sufficiently developed for the cultivar concerned</p> <p>(bb) When the fruit is bisected as set out in item 15(3), minimum of 50 per cent (half) of the flesh between the skin and the pip, on the ripest side of the fruit, shall be of a pale yellow colour (a minimum index 0,3 as depicted in the 1998 Mango colour chart): Provided that no signs of softening are present</p>
(d) Minimum fruit mass (All cultivars)	200 g	200 g	200 g
(e) Jelly seed Surface transport (All cultivars)	A surface area of 10 per cent jelly seed development of the flesh around the pip is permissible	A surface area of 10 per cent jelly seed development of the flesh around the pip is permissible	-
(f). Sunburn	(aa) The fruit shall not be malformed due to sunburn, as depicted in Annexure 2	(aa) The fruit shall not be malformed due to sunburn, as depicted in Annexure 2	-
	(bb) Primary sunburn	(bb) Primary sunburn	-

	(yellow) is permissible on all cultivars, as depicted in Annexure 2 (cc) No secondary burn shall occur (Any shade of brown/black burn on yellow)	(yellow) is permissible on all cultivars, as depicted in Annexure 2 (cc) No secondary burn shall occur (Any shade of brown/black burn on yellow)	-
(g) Sap burn	The total surface area shall not exceed 500 mm ²	The total surface area shall not exceed 500 mm ²	-
(h) Pink and/or yellow scale marks**	Maximum of 10 marks per fruit: Provided that individual and/or collective (concentrated) pink and/or yellow scale marks per fruit shall not exceed a combined surface area of 500 mm ²	Maximum of 10 marks per fruit: Provided that individual and/or collective (concentrated) pink and/or yellow scale marks per fruit shall not exceed a combined surface area of 500 mm ²	-
(i) Scale infestation	Maximum of 15 scales per fruit	Maximum of 20 scales per fruit	-
(j) Hail marks, healed or callused wounds or punctures:			
(aa) Depth (only hail marks)	Shall not exceed 5 mm as depicted in Annexure 2	Shall not exceed 5 mm as depicted in Annexure 2	-
(bb) Surface area	Shall not exceed a combined surface area of 300 mm ²	Shall not exceed a combined surface area of 300 mm ²	-
(k) Scattered discoloured lenticels	As depicted in Annexure 2	As depicted in Annexure 2	-
(l) Western flower thrip damage on the cheek and stem-end of the fruit	As depicted in Annexure 2	As depicted in Annexure 2	-
(m) Dimples in the peel	As depicted in Annexure 2	As depicted in Annexure 2	-
(n) Bumps			
(aa) Height	As depicted in Annexure 2	As depicted in Annexure 2	-
(bb) Number	A maximum of five per	A maximum of five per	-

(cc) Appearance	fruit are allowed Not permissible when bumps are damaged or discoloured	fruit are allowed Not permissible when bumps are damaged or discoloured	-
(o) Speckled spots (Keitt)	As depicted in Annexure 2	As depicted in Annexure 2	-
(p) Concentrated Spots (Keitt)	As depicted in Annexure 2	As depicted in Annexure 2	-
(q) Other blemishes:			
(aa) Concentrated and collectively	Shall not exceed 500 mm ² in surface area	Shall not exceed 500 mm ² in surface area	-
(bb) Windmarks	As depicted in Annexure 2	As depicted in Annexure 2	-
(r) Foreign matter	Practically free from any visible foreign matter	Practically free from any visible foreign matter	-
(s) Internal pip germination			
(aa) Limited to the pip	Permissible	Permissible	-
(bb) If flesh is penetrated	May deviate to the extent set out in Table 2	May deviate to the extent set out in Table 2	-
(cc) With tissue deterioration	Shall be regarded as decay	Shall be regarded as decay	-
(t) Split pip			
(aa) Split without discolouration	Shall not extend more than 75 per cent into the flesh ^s	Shall not extend more than 75 per cent into the flesh ^s	-
(bb) Split with discolouration	Shall not extend more than 50 per cent into the flesh ^s	Shall not extend more than 50 per cent into the flesh ^s	-
(cc) Split with flesh deterioration	Shall be regarded as decay	Shall be regarded as decay	-
(u) Unspecified appearance defects not mentioned above	May deviate to the extent set out in Table 2	May deviate to the extent set out in Table 2	-
(v) Copper residue	May deviate to the ex-	May deviate to the ex-	-

	tent set out in Table 2	tent set out in Table 2	
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Notes

** The prescribed standard is applicable to scale marks that markedly detract from the general appearance of the fruit: Provided that scale marks which do not contrast with the background colour of the fruit, be ignored: Provided further that natural pigmentation shall not be confused with scale marks.

\$ The shortest distance measured from the outside of the pip to the inside of the skin.

- No specification.

TABLE 2

PERMISSIBLE DEVIATIONS BY NUMBER

Quality factor		Class 1	Class 2	Unclassified
(a)	Decay	1%	5%	-
(b)	Injuries	3%	6%	-
(c)	Bruises and/or Soft Nose	3%	6%	-
(d)	Plant injurious organisms of phytosanitary importance	As specified by the Executive Officer of the Directorate Plant Health and Quality	As specified by the Executive Officer of the Directorate Plant Health and Quality	As specified by the Executive Officer of the Directorate Plant Health and Quality
(e)	Arthropoda infestation			
	(aa) Arthropoda infestation of fruit, including the organisms which according to subitem (1) do not form part of plant injurious organisms, excluding organisms which may be a source of danger to the human being	On 3% of the mangoes 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	On 3% of the mangoes 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	On 3% of the mangoes 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
	(bb) Organisms which may be a source of danger to the human being	One on average per inspection sample: Provided that not more than two Arthropoda shall be allowed per container	One on average per inspection sample: Provided that not more than two Arthropoda shall be allowed per container	One on average per inspection sample: Provided that not more than two Arthropoda shall be allowed per container
(f)	Weevil infestation			
	(aa) In the pip	5%	5%	-
	(bb) In the flesh	1%	1%	10%
(g)	Internal pip germination			
	(aa) Limited to the pip	Permissible	Permissible	Permissible
	(bb) If flesh is penetrated	5%	5%	-
	(cc) With tissue deterioration	1%	1%	10%

(h)	Split pip			
	(aa) Split without discolouration	5%	5%	-
	(bb) Split with discolouration	5%	5%	-
	(cc) Split with flesh deterioration	1%	1%	-
(i)	Maturity - lack of pale yellow colour: All cultivars	10%	15%	-
(j)	Jelly seed	5 %	10%	-
(k)	Internal breakdown	5 %	10%	-
(l)	Over-ripe, unspecified internal quality defects, individually	5%	10%	-
(m)	Internal chilling injury	1%	5%	-
(n)	Damaged or discoloured bumps	20%	20%	-
(o)	Appearance, malformation, healed or callused wounds or punctures, sunburn, sap burn, scale marks, pink and/or yellow scale-marks, scale infestation, hail marks, scattered discoloured lenticels, other blemishes, dimples in the peel, speckled spots, concentrated spots, wax residue, streaks, hot water injury - external, chilling injury - external, thrip damage, bumps, foreign matter or unspecified appearance defects, individually	20%	20%	-
(p)	Lack of uniformity in size or colour in the same container	10%	15%	-
(q)	Deviations from marking requirements as prescribed in item 10	One container per consignment		
(r)	Deviations in items (a), (b), (c), (d), (e)(aa), (f),	5%	10%	-

(g)(bb), (g)(cc), (h), (i) and (m) of this table collectively: Provided that such deviations shall individually be within the specified limits			
(s) Deviations in items (a), (b), (c), (d), (e)(aa), (f), (g)(bb), (g)(cc), (h), (i), (k), (l) and (m) of this table, including unspecified defects collectively: Provided that such deviations shall individually be within the specified limits	5%	10%	-

Note:

- No specification

TABLE 3

PERMISSIBLE CULTIVARS (ALL CLASSES)

Cultivars
Heidi
Irwin
Isis
Joa
Keitt
Kensington
Kent
Manzanillo
Neldica
President
Sabre
Sensation
Tommy Atkins
Zill
Any other suitable cultivar not mentioned above and which has been approved by the Executive Officer

TABLE 4

COUNTS, MASS RANGES AND SIZE CODES

Count	Size code	*Mass range
13 - 16	A	200 g - 350 g
8 - 12	B	351 g - 550 g
5 - 7	C	≥ 551 g

* The minimum weight of mangoes must not be less than 200 g