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**GOVERNMENT NOTICES • GOEWERMENTSKENNISGEWINGS**

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**DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES**

NO. R. 911

12 AUGUST 2016

AGRICULTURAL PRODUCT STANDARDS ACT, 1990  
(ACT No. 119 OF 1990)**REGULATIONS RELATING TO THE GRADING, PACKING AND MARKING OF APPLES INTENDED  
FOR SALE IN THE REPUBLIC OF SOUTH AFRICA**

The Minister of Agriculture, Forestry and Fisheries 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- (c) read together with section 3(2) of the said Act, repealed the regulations published by Government Notice No. R. 725 of 17 June 2016 with effect from the date of commencement.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 in the Act, shall have a corresponding meaning, and --

"**apple**" means the fruit of the cultivars which are grown from the species *Malus sylvestris* and *Malus niedzwetzkyana*;

"**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;

"**bitter pit**" means a physiological state characterized by light yellow discoloured spots with darkbrown corky layer;

"**blemish**" means any external defect on the surface of the apples which detrimentally affects the appearance of the apples;

"**bruise**" means any indentation or discoloration directly under the skin;

"**calcium spot**" means small dark brown spots visible on the lenticels of the apple;

"**cold damage**" means any damage caused by low temperatures, excluding superficial cold storage scald;

"**consignment**" means --

- (a) a quantity of apples 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 apples 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, pallet loads, trademarks or types of packaging;

"**container**" means the immediate package in which apples are packed directly and outer packages in which prepacked units are packed;

"**core rot**" means --

- (a) progressive core rot (wet) that extends into the flesh of the apple or non-progressive core rot (dry) which extends more than 10 millimetres into the flesh of the apple; and
- (b) non-progressive core rot (dry) which doesn't extend more than 10 millimetres into the flesh of the apple;

"**count**" means the number of apples packed into a container;

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

"**diameter**" means the largest section measured at right angles to the longitudinal axis of the apple;

"**foreign matter**" means any material or substance not normally present in, on or between the apples;

"**Fusicladium**" means black spots, initially velvety becoming corky in texture;

"**hail marks**" means marks which have been caused by hail, which have healed completely or become callused and which exceed 2 millimetres in depth;

"**Injury**" means any wound which exposes the flesh, with the exception of such wounds which have healed completely or have become callused or skin punctures;

"**inspector**" means an officer under the control of the Executive Officer or an Assignee or a qualified employee of an Assignee;

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

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

"**weight**" means mass in grams measured on a calibrated balance; and

"**well-formed**" means that the apples have a shape which is normally typical of the cultivar concerned.

## PART I

### ***Control over the sale of apples***

2. (1) No person shall sell apples in the Republic of South Africa other than imported apples referred to in subregulation (3) --

- (a) unless the apples are sold according to the classes referred to in regulation 3;
- (b) unless the apples comply with the standards for apples regarding quality referred to in regulation 4;
- (c) unless such apples are packed in a container and in accordance with the packing requirements as set out in regulations 5, 6, 7, 8, 9, and 10; and
- (d) unless such apples are marked with the particulars and in the manner prescribed in

regulation 11.

(2) Apples sold by vendors in streets (excluding retailers and supermarkets) and other public places are excluded from the provisions in subregulation 2(1).

(3) Imported apples may be exempted from the provisions of subregulation 2(1): Provided that the apples --

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

(b) 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 apples as verified through inspection conforms to the relevant standard.

(4) 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 2(1).

## QUALITY STANDARDS

### *Classes for apples*

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

### *Standards for apples*

4. (1) Apples shall comply with the specifications set out in Tables 1, 2, 3, 4, 5 and 6.

(2) No consignment of apples "Class 1", "Class 2" or "Lowest Class" 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 apples 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.

## PART II

### PACKING REQUIREMENTS

#### *Requirements for containers*

5. Containers in which apples are packed shall --

(1) be clean, dry, undamaged and suitable;

(2) not impart a foreign taste or odour to the apples;

(3) be free from any visible sign of fungus growth;

(4) be free from Arthropoda infestation; and

(5) 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 apples are damaged or are at risk of being damaged, during normal storage, handling or transport.

#### *Packing requirements*

6. (1) Only apples of the same quality, cultivar, ripeness and size shall be packed together in the same container.
- (2) Each container shall be packed firmly and to capacity.
- (3) Apples shall be sized by diameter or weight: Provided that sizing shall be optional in the case of Class 2 and Lowest Class apples.
- (4) If apples 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.

#### ***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 apples.

#### ***Stacking of containers on pallets***

8. If containers containing apples are palletised --
- (1) the pallet shall be clean, undamaged and suitable;
- (2) the containers shall be stacked firmly and square with each other and the pallet;
- (3) only containers of the same dimensions shall be stacked in the same layer on the pallet; and
- (4) the containers shall not be stacked upside-down on the pallet.

#### ***Strapping of the pallet loads***

9. A pallet load of containers shall be strapped in a suitable manner.

#### ***Provisions concerning presentation***

10. 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.

### **MARKING REQUIREMENTS**

11. (1) Each container containing apples, shall be marked clearly, indelibly, legibly and neatly 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.
- (a) The expression "Apples".
- (b) The appropriate cultivar/variety (optional).
- (c) The applicable minimum and maximum diameter or weight: Provided that it --
- (aa) may be replaced with the applicable count, preceded by the expression "Count", in the case of apples packed in layers; or
- (bb) shall be replaced with the applicable minimum diameter or weight followed by the expression "and over", in the case of Class 2 or Lowest Class apples which are not sized.
- (d) The appropriate class in accordance with regulation 3.

- (e) The name and physical or postal address of the producer or owner of the contents of the container.
- (f) The country of origin: Provided that no abbreviations or the expression "South Africa" on its own shall be used e.g. "Produce of South Africa", "Produced in South Africa", or any other similar expression.
- (g) The applicable date of packing/date code or international recognised code (optional).

(2) Subject to the provisions of subregulation 11(1), each outer container and bulk 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.

#### ***Prohibition of false or misleading description for products***

12. No person shall use any name, word, expression, reference, particulars or indication in any manner, either by itself or in conjunction with any other verbal, written, printed, illustrated or visual material, in connection with the sale of a product in a manner that conveys or creates or is likely to convey or create a false or misleading impression as to the nature, substance, quality or other properties, or the class or grade, origin, identity or manner or place of production, of that product.

#### ***Display***

13. (1) If apples in containers for sale are 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 apples are displayed for sale other than in containers, --

- (a) any quantity thereof of a particular class, size group or cultivar, as the case may be, shall not be so displayed mixed with apples 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 on a notice board prominently placed at such quantity of apples.

### **PART III**

#### **SAMPLING PROCEDURES**

##### ***Obtaining a sample of the consignment***

14. At least two percent of the containers in a consignment shall be drawn at random for inspection purposes and an inspector shall be satisfied that the containers so drawn are representative of the consignment concerned.

##### ***Obtaining an inspection sample***

15. An inspection sample shall be drawn from each container obtained in accordance with regulation 14 and shall, in the case of --

- (1) containers with 50 apples or less, consist of the entire contents of the container; or
- (2) containers with more than 50 apples, consist of 50 apples drawn at random from the container.

##### ***Deviating sample***

16. 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 apples 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 only be based 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.

### **METHODS OF INSPECTION**

#### ***Determination of the external appearance, condition and size***

17. For the purpose of analysis in respect of external appearance, condition and size, the whole sample drawn in accordance with regulation 15, shall be used.

#### ***Determination of uniformity in size***

18. The uniformity in size of apples in the same container is determined by:

- (1) Selecting the 10 apples from the sample drawn in regulation 15 which prominently displays the greatest difference in diameter.
- (2) Tabulating the diameter of the 10 apples in one millimetre grading.
- (3) If three or more apples per any count in a sample of 10 apples drawn, do not comply with the variation in diameter, the count or counts shall be deemed not to be suitable.

#### ***Determination of internal quality defects including core rot***

19. The internal quality defects of apples shall be determined by selecting 10 apples in the sample drawn in terms of regulation 15, which in the opinion of the inspector are those most likely to have been affected and by bisecting them on their equatorial axes and calculating the number of such apples affected, as a percentage of the total number of apples selected.

#### ***Determination of minimum ripeness***

20. The minimum ripeness for apples shall be determined as follows:

- (1) Take as working sample 10 apples at random from the inspection sample obtained in accordance with regulation 15.
- (2) Cover the cut surface of one half of each of the 10 bisected apples evenly with an iodine solution of one percent.
- (3) Leave the apple halves for at least one minute before the results are recorded.
- (4) Determine the percentage surface of each of the apple halves which did not turn black in colour.
- (5) Add up the percentage obtained from all the apple halves and divide the figure by the number of readings.
- (6) Compare the results obtained in subregulation (4) with the minimum requirements in Table 3 for the particular cultivar.
- (7) The inspection sample shall be regarded as mature if the starch content of the apples at least complies with the minimum average percentage starch conversion for the cultivar concerned as set out in Table 3.

#### ***Determination of minimum diameter***

21. The minimum diameter of apples shall be determined by using a suitable apparatus with

round openings of which the diameter coincides with the minimum diameter prescribed in Table 1 as follows:

- (1) Take as working sample the apples that noticeably appear to be the smallest in diameter from the inspection sample obtained in accordance with regulation 15.
- (2) Place the apples of the cultivar concerned gently, one after the other, with their stems facing upwards on the corresponding opening of the suitable apparatus with round openings.
- (3) If an apple falls through the prescribed size of the opening through the action of its own gravity, the apple is deemed to be too small.
- (4) Calculate the number of apples thus found to be too small as a percentage of the total number of apples in the inspection sample.

***Determination of minimum and maximum weight***

22. The minimum weight of apples shall be determined by using a suitable calibrated balance as follows:

- (1) Take as working sample the apples that noticeably appear to be the smallest/largest from the inspection sample obtained in accordance with regulation 15.
- (2) Place each apple of the working sample gently, individually one after the other, on the suitable calibrated balance.
- (3) If an apple weighs less than the prescribed minimum weight, the apple is deemed to be too small.
- (4) Calculate the number of apples thus found to be too small/large as a percentage of the total number of apples in the inspection sample.

***Determination of over-maturity/overripeness***

23. Overripeness of all apple cultivars in a consignment shall be determined with a handheld penetrometer or a penetrometer mounted on a drill stand with a plunger of 11,2 millimeter in diameter as follows:

- (1) Take as working sample 10 apples at random from the inspection sample obtained in accordance with regulation 15: Provided that such apples shall be free from defects such as sunburn and pests or disease damage, which may have affected the normal ripening process.
- (2) Remove a thin slice of skin from opposite sides of each apple.
- (3) Hold the apple firm with one hand: Provided that if a handheld penetrometer is used, your hand should rest on a rigid surface.
- (4) Zero the penetrometer and place the plunger head of 11,2 millimeter in diameter on the spot where the skin was removed.
- (5) Apply steady downward pressure on the penetrometer until the plunger has penetrated the flesh of the apple up to the depth mark of the plunger.
- (6) Remove the plunger and note the reading on the penetrometer, to one decimal.
- (7) Repeat the process on the opposite side of the same apple after first zeroing the penetrometer.
- (8) Calculate the average of the two pressure readings of each apple.

- (9) The apples shall not be regarded as overripe, if they comply with the minimum pressure readings for the cultivar concerned as set out in Table 4.

### OFFENCE AND PENALTIES

24. 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 Agricultural Product Standards Act, 1990 (Act No. 119 of 1990).

**TABLE 1: QUALITY STANDARDS**

Quality factor	Class 1	Class 2	Lowest Class
(a) Appearance	Sound and attractive according to cultivar's requirements	Sound and fairly attractive and true to cultivar's requirements	-
(b) Shape	Well-formed according to cultivar's requirements	-	-
(c) Colour (all cultivars)	As set out in Table 5	As set out in Table 6	-
(d) Minimum weight/diameter	80 g or 54 mm	80 g or 54 mm	-
(e) Maturity	As set out in Table 3	As set out in Table 3	-
(f) Bruises	Larger than 20 mm in diameter or which has a surface area larger than 400 mm <sup>2</sup> : Provided that no apple may have a bruise larger than 28 mm in diameter	Larger than 25 mm in diameter or which has a surface area larger than 500 mm <sup>2</sup> : Provided that no apple may have a bruise larger than 35 mm in diameter	-
(g) Blemishes	Less than 250 mm <sup>2</sup>	Less than 300 mm <sup>2</sup>	-
(h) Sunburn	As set out in Table 5	As set out in Table 6	-
(i) Russeting	As set out in Table 5	As set out in Table 6	-
(j) Core rot			
(i) progressive core rot	May not deviate to the extent set out in Table 2	May not deviate to the extent set out in Table 2	May not deviate to the extent set out in Table 2
(ii) non-progressive core rot	May not deviate to the extent set out in Table 2	May not deviate to the extent set out in Table 2	May not deviate to the extent set out in Table 2
(k) Bitter pit or Chocolate spot	May not deviate to the extent set out in Table 2	May not deviate to the extent set out in Table 2	May not deviate to the extent set out in Table 2



(l)	Foreign matter	May not deviate to the extent set out in Table 2	May not deviate to the extent set out in Table 2	-
(m)	Any other external or internal quality defect	May not deviate to the extent set out in Table 2	May not deviate to the extent set out in Table 2	-
(n)	Hail marks - Isolated and scattered	As set out in Table 5	As set out in Table 6	-
(o)	Calcium spot	As set out in Table 5	As set out in Table 6	-
(p)	Fusicladium	50mm <sup>2</sup>	100mm <sup>2</sup>	-
(q)	Humps (single or multiple)	3mm in height with a 50mm (square mm)	5mm in height with a 100mm (square mm)	-

- No applicable quality standards.

**TABLE 2: MAXIMUM PERMISSIBLE DEVIATIONS BY NUMBER**

Quality factor		Class 1	Class 2	Lowest Class
(a)	Decay:			
	(i) Decomposition or fungus development	2%	4%	12%
	(ii) Internal insect damage	2%	4%	12%
(b)	Core rot			
	(i) Progressive core rot or bitter pit, lenticell pit individually and cold damage	6%	10%	20%
	(ii) Non-progressive core rot	10%	15%	30%
(c)	Internal breakdown, cold damage, or unspecified internal quality defects, individually	4%	6%	20%
(d)	Visible spray residue	3%	6%	6%
(e)	Injuries	6%	8%	20%
(f)	Blemishes	10%	15%	-
(g)	Bruises	10%	15%	-
(h)	Deviations in (a), (b),	10%	15%	20%

	(c) and (d) collectively of this table: Provided that such deviations shall individually be within the specified limits			
(i)	Minimum weight/diameter	10%	15%	-
(j)	Colour	20%	30%	-
(k)	Foreign matter	10%	15%	-
(l)	Any other external or internal quality defects	10%	15%	-
(m)	Immature fruit/over mature fruit	2%	2%	-
(n)	Deviation for the above (f), (g), (h), (i), (j), (k) and (l) collectively of this table: Provided that such deviations shall individually be within the specified limits.	20%	30%	-

- No applicable quality standards.

**TABLE 3: MINIMUM RIPENESS: THE IODINE TEST**

<b>Cultivar/ Variety</b>		<b>Minimum average percentage starch conversion (% white)</b>
(a)	Red Delicious and mutants (e.g. Oregon Spur, Starking, Starkrimson, Starkspur, Topred), Caudle (Cameo™)	8%
(b)	African Red (African Carmine™), Braeburn, Mahana Red, Fuji, Fuji Brak (KIKU®) Honeycrisp (Honeycrunch®), Cripps Pink, Rosy Glow (Pink Lady®), Fiesta, Gala, Golden Delicious, Panorama Golden, Tenroy (Royal Gala®), Olsentwo Gala (Pacific Gala™), Corder Gala, Royal Beaut	15%
(c)	Granny Smith, Mariri Red, Cripps Red (Joya®), Scifresh (Jazz®)	20%
(d)	Any other cultivar not mentioned	20%

TABLE 4: OVERRIPENESS STANDARDS

Cultivar/Variety	Minimum average pressure in kg per sample of 10 fruit	Maximum number of fruit per working sample allowed beneath the minimum pressure
(a) UEB32642 (Opal <sup>®</sup> ), Scifresh (Jazz <sup>®</sup> )	7,0	2
(b) Nicogreen (Greenstar <sup>®</sup> )	6,5	2
(c) Cripps Pink (Pink Lady <sup>®</sup> ), Rosy Glow (Pink Lady <sup>®</sup> ), Cripps Red (Joya <sup>®</sup> )	6,3	2
(d) Braeburn Nicoter (Kanzi <sup>®</sup> ), Cripps Pink, Cripps Red, Mahana Red, Mariri Red	5,9	2
(e) Honeycrisp (Honeycrunch <sup>®</sup> )	4	2
(f) African Red (African Carmine <sup>™</sup> ), Nicogreen	5,5	2
(g) Fuji Brak (KIKU <sup>®</sup> ), Caudle (Cameo <sup>™</sup> ), Corder Gala, Gala, Red Delicious and mutants (e.g. Early Red One, Oregon Spur, Starking, Starkrimson, Starkspur, Topred), Olsentwo Gala (Pacific Gala <sup>™</sup> ), Tenroy (Royal Gala <sup>®</sup> ), Royal Beaut, Granny Smith	5,4	2
(h) Fiesta, Fuji, Golden Delicious	5,0	2
(i) Any other cultivar not mentioned	5,0	2

® Indicates a registered trademark

™ Indicates a trademark

TABLE 5: ILLUSTRATIONS APPLICABLE TO APPLES: CLASS 1

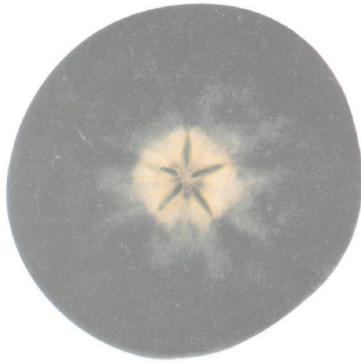
Colour Chart No.	Quality factor	Cultivar/Variety	Standard
A.19	Calcium spot	All cultivars	Maximum colour print no. 5
A.20	Sunburn	Golden Delicious, UEB32642 (Opal®)	Maximum colour print no. 6
A.27	Colour	Jonathan	Minimum colour print no. 2
A.28	Colour	Golden Delicious, Panorama Golden, Fiesta, Nicogreen (Greenstar®), UEB32642 (Opal®)	Maximum colour print no. 7
A.29	Hail marks – scattered	All cultivars	Maximum colour print no. 5
A.30	Hail marks – isolated	All cultivars	Maximum colour print no. 5
A.31	Stem-end russeting	All red cultivars	Maximum colour print no. 10
A.33	Sunburn	Granny Smith	Maximum colour print no. 7
A.34	Colour	Starking (Starking Delicious, Stark Delicious), Royal Beaut	Maximum colour print no. 9
A.34	Colour	Red Delicious	30% colour
A.35	Colour	Topred, Early Red One, Oregon Spur, Romeo	Minimum colour print no. 11 on the worst coloured side
A.36	Colour	Starkrimson  Splendour	Minimum colour print no. 8 on both sides  Minimum colour print no. 11 on one side
A.37	Retiform russeting	All cultivars	Maximum colour print no. 6 if present on both sides and no. 8 if present on one side
A.38	Colour	Granny Smith	Maximum colour print no. 7
A.40	Stem-end russeting	Granny Smith	Maximum colour print no. 11
A.42	Colour	Tenroy (Royal Gala®)	50% of the fruit must have red colouring
A.42	Colour	Gala	10% of the fruit must have red colouring
A.43	Stem-end russeting	Golden Delicious/Blushed Golden, UEB32642 (Opal®)	Maximum colour print no. 10: Provided that moustache shaped stem end russet is allowed as long as total surface does not exceed photo 10 and the moustache shaped russet should not exceed more than 20mm down the side of the apple if viewed from the side
	Colour	Braeburn, Fuji, Cripps' Pink, Honeycrisp (Honeycrunch®)	10% colour
	Colour	Cripps Red	25% colour
Pink Lady®	Sunburn	Cripps Pink	Maximum colour print no. 5
Pink Lady®	Sunburn	Cripps Red	5/Maximum colour print no. 5

**TABLE 6: ILLUSTRATIONS APPLICABLE TO APPLES: CLASS 2**

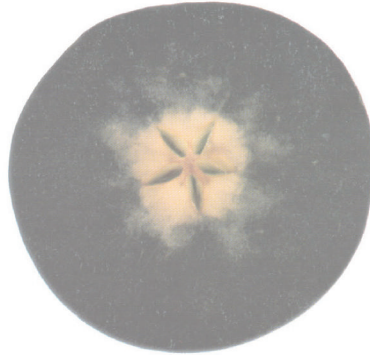
Colour Chart No.	Quality factor	Cultivar/Variety	Standard
A.19	Calcium spot	All cultivars	Maximum colour print no. 6
A.20	Sunburn	Golden Delicious/Blushed Golden, UEB32642 (Opal®)	Maximum colour print no. 7
A.28	Colour	Golden Delicious, Panorama Golden, Fiesta, Nicogreen (Greenstar®), UEB32642 (Opal®)	-
A.29	Hail marks – scattered	All cultivars	Maximum colour print no. 7
A.30	Hail marks – isolated	All cultivars	Maximum colour print no. 6
A.31	Stem-end russeting	All red cultivars	Maximum colour print no. 12
A.33	Sunburn	Granny Smith	-
A.34	Colour	Starking (Starking Delicious, Stark Delicious), Royal Beaut	Maximum colour print no.9
	Colour	Red Delicious	30% colour
A.35	Colour	Topred, Early Red One, Oregon Spur, Romeo	Minimum colour print no. 11 on the worst coloured side
A.36	Colour	Starkrimson	Minimum colour print no. 8 on both sides
		Splendour	Minimum colour print no. 11 on one side
A.37	Retiform russeting	All cultivars	Maximum colour print no. 7 if present on both side and no. 9 if present on one side
A.38	Colour	Granny Smith	-
A.40	Stem-end russeting	Granny Smith	Maximum colour print no. 12
A.42	Colour	Tenroy (Royal Gala®)	50% of the fruit must have red colouring
A. 42	Colour	Gala	-
A.43	Stem-end russeting	Golden Delicious, UEB32642 (Opal®)	Maximum colour print no. 12: Provided that moustache shaped stem end russet is allowed as long as total surface does not exceed photo 12 and the moustache shaped russet should not exceed more than 25mm down the side of the apple if viewed from the side
	Colour	Braeburn, Cripps' Pink, Fuji, Honeycrisp (Honeycrunch®)	12% colour
	Colour	Cripps Red	25% colour
Pink Lady®	Sunburn	Cripps Pink	Maximum colour print no. 5
Pink Lady®	Sunburn	Cripps Red	Maximum colour print no. 5
	Colour	Scifresh (Jazz®)	Minimum 40% bright orange/red fleck over background colour. Stripe must be visible

- No applicable quality standards.

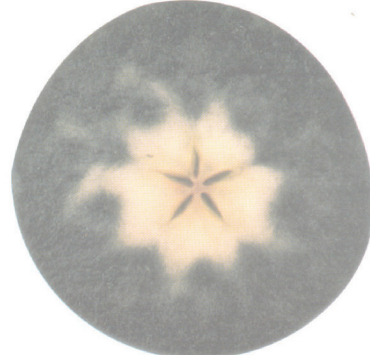
**PART IV  
STARCH CONVERSION CHART**



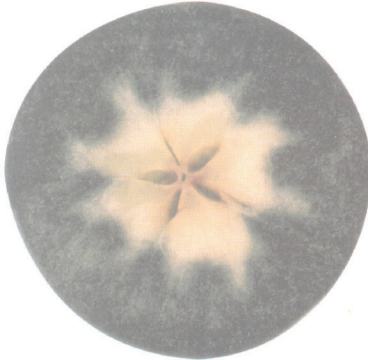
5%



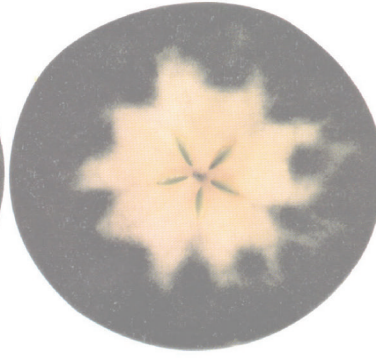
10%



20%



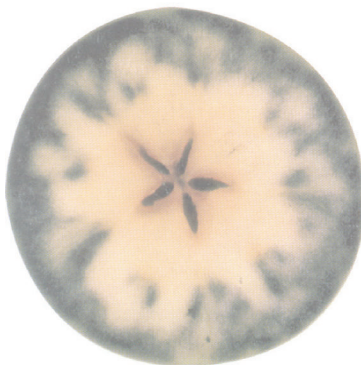
25%



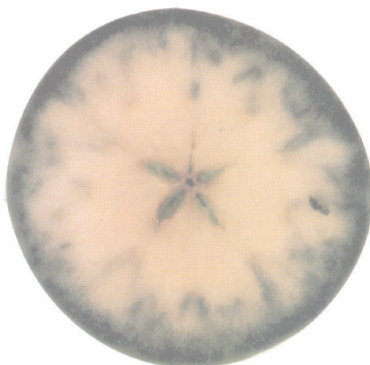
30%



40%



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70%



80%