

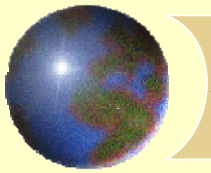
# **CITRUS FRUIT PRODUCTION AND QUALITY STANDARDS**

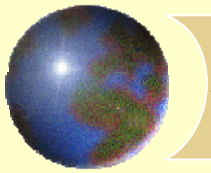
**Yalçın GÜBE**

**Undersecretariat For Foreign Trade**

**DG of Standardization For Foreign Trade**

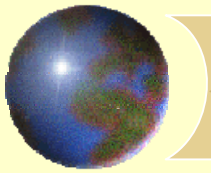
**Republic of Turkey**





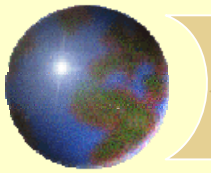
## Production Areas in Turkey

- **Citrus is produced primarily in the Mediterranean and Aegean Regions in Turkey**
- **The primary production area is Cukurova, which produces about 70 percent of Turkey's total citrus crop including more than 90 percent of the grapefruits and lemons, and about 60 percent of the oranges and tangerines.**



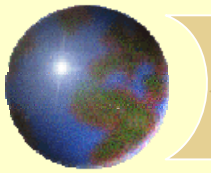
## Production Areas in Turkey

- **Antalya, located west of Cukurova produces about 20 percent of Turkey's total citrus crop, primarily oranges (about 30 percent of the total orange production).**
- **Izmir, located on the Western Aegean Coast produces only about five percent of the total citrus production, primarily tangerines (about 20 percent of total tangerine production).**



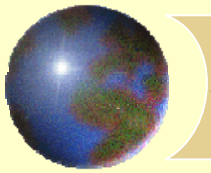
## Production Areas in Turkey

- **The number of fruit bearing trees continues to increase because of high domestic and export demand.**
- **Oranges are the primary citrus crop grown in Turkey comprising nearly one half of total production. Lemons and tangerines represent 22 percent of total production while grapefruit production is slightly more than five percent.**



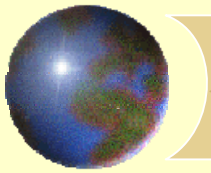
## Varieties

- **The main varieties of oranges grown in Turkey are Washington (about 50 percent, Navel is the main sub variety) and Valencia (about 30 percent).**
- **Enterdonate, which is the primary export variety, comprises about 25 percent of total lemon production.**



## Varieties

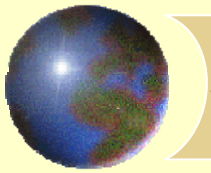
- Star Ruby is the main grapefruit variety (about 60 percent),
- Clementine and Fremont (about 60 percent combined), and Satsuma (about 35 percent) are the main tangerine varieties.



## Usage Of Citrus Fruits

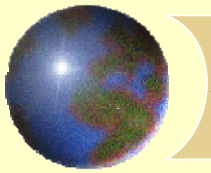
- Turkey's processing industry consumes only a minor part of overall citrus production.
- Most of the processed juice is used for frozen concentrate.
- A small portion is consumed as fresh squeezed especially during the heavy tourism season.





## **Consumption**

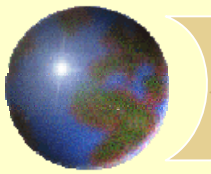
- **Fresh fruit consumption, including citrus, is very popular in Turkey.**
- **Per capita consumption of citrus is increasing because income levels, in general, have increased leading to higher consumer demand.**
- **Increased domestic demand has provided the major incentive for increased production.**
- **At the same time, as production has increased prices have dropped making citrus more attractive to consumers.**



# Citrus Fruit Standards

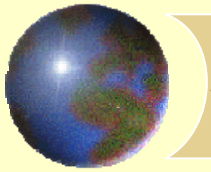
## DEFINITION

- The UNECE standard applies to the following fruit, classified as "citrus fruit", to be supplied fresh to the consumer.
- The standard includes;  
lemons, limes, mandarins, orange,  
grapefruit, pummelos



## Selection of Citrus Fruit

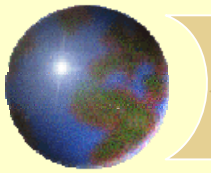




## **PROVISIONS CONCERNING QUALITY**

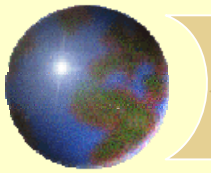
**A-Minimum requirements,  
the citrus fruit must be:**

- intact**
- free of bruising and/or extensive healed overcuts**
- sound; produce affected by rotting or deterioration such as to make it unfit for consumption is excluded**



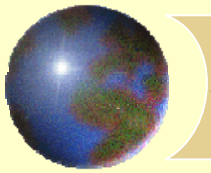
## **PROVISIONS CONCERNING QUALITY**

- clean, practically free of any visible foreign matter**
- practically free from pests**
- practically free from damage caused by pests**
- free of signs of internal shrivelling**
- free of damage caused by low temperature or frost**
- free of abnormal external moisture**
- free of any foreign smell and/or taste.**



## **PROVISIONS CONCERNING QUALITY**

- **The citrus fruit must have been carefully picked and have reached an appropriate degree of development and ripeness account being taken of criteria proper to the variety, the time of picking and the growing area.**
- **The development and state of ripeness of the citrus fruit must be such as to enable them:**
  - **to withstand transport and handling, and**
  - **to arrive in satisfactory condition at the place of destination.**



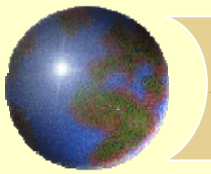
## **PROVISIONS CONCERNING QUALITY**

### **B-Minimum maturity requirements**

**Maturity of citrus fruit is defined by the following parameters specified for each species below:**

- **minimum juice content**
- **minimum total soluble solids content (TSS), i.e. minimum sugar content**
- **colouring.**

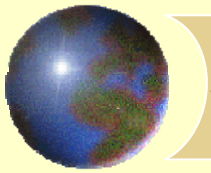
**The degree of colouring shall be such that, following normal development the citrus fruit reach the colour typical of the variety at their destination point.**



# Lemons



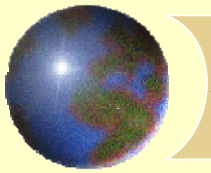




## **PROVISIONS CONCERNING QUALITY**

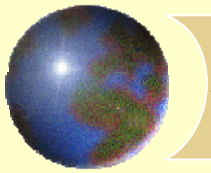
### *Lemons*

- **Minimum juice content**  
**Verdelli and Primofiore lemons 20%**  
**Other lemons 25%**
- **Colouring**  
**Must be typical of the variety. However fruit with a green (but not dark green) colour are allowed provided they satisfy the minimum requirements as to juice content.**



# Limes





## PROVISIONS CONCERNING QUALITY

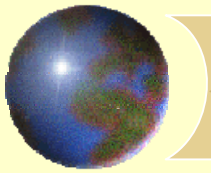
### *Limes*

- **Minimum juice content**

42%

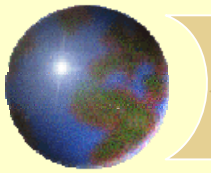
- **Colouring**

Must be typical of the variety on at least two-thirds of the total fruit surface. The fruit should be green but may show discolouring (yellow patches) up to 30% of its surface.



# Satsumas, clementines, other mandarin varieties and their hybrids





## **PROVISIONS CONCERNING QUALITY**

*Satsumas, clementines, other mandarin varieties  
and their hybrids*

- **Minimum juice content**

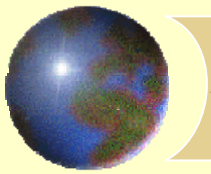
**Satsumas, other mandarin varieties and their  
hybrids; 33%**

**Clementines 40%**

- **Colouring**

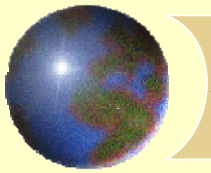
**Must be typical of the variety on at least one-  
third of the surface of the fruit.**





# Oranges





## **PROVISIONS CONCERNING QUALITY**

### *Oranges*

- **Minimum juice content**

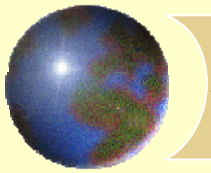
**Blood oranges 30%**

**Navels group 33%**

**Other varieties 35%**

- **Colouring**

**Must be typical of the variety. However, fruit with light green colour not exceeding one-fifth of the total surface area of the fruit are allowed, provided they satisfy the minimum requirements as to juice content mentioned above**

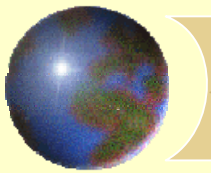


## **PROVISIONS CONCERNING QUALITY**

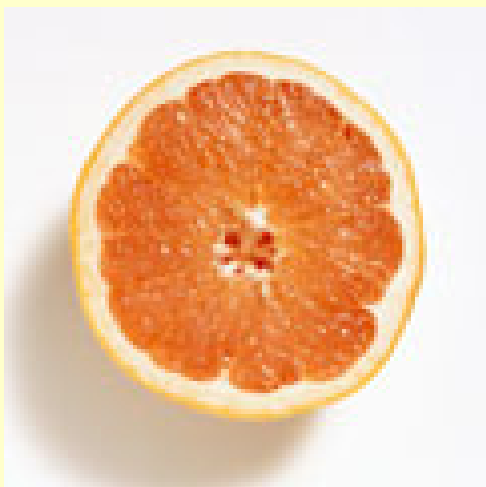
**Oranges produced in areas with high temperatures and high relative humidity conditions during the developing period having a green colour exceeding one-fifth of the surface area of the fruit are allowed provided they satisfy the minimum requirements as to juice content mentioned below.**

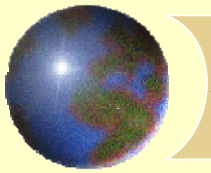
- **Minimum juice content**  
**Mosambi, Sathgudi and Pacitan 33%**  
**Other varieties 45%**





# Grapefruit





## **PROVISIONS CONCERNING QUALITY**

### *Grapefruit and its hybrids*

- **Minimum juice content**

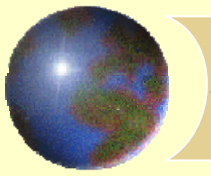
**33%**

- **Minimum sugar content (TSS)**

**Oroblanco 9%**

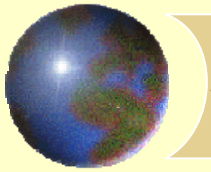
- **Colouring**

**Must be typical of the variety. However, fruit with a greenish colour (green in Oroblanco) are allowed, provided they satisfy the minimum requirements as to juice content.**



# Pummelos





## PROVISIONS CONCERNING QUALITY

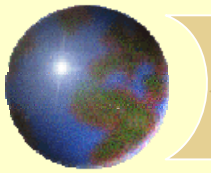
### *Pummelos (Shaddock) and their hybrids*

- **Minimum sugar content (TSS)**

8%

- **Colouring**

Must be typical of the variety on at least two-thirds of the surface of the fruit.

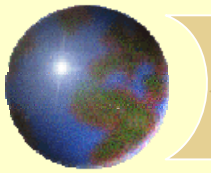


# PROVISIONS CONCERNING QUALITY

## C- Classification

### *Extra Class*

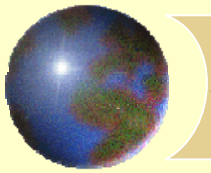
- Citrus fruit in this class must be of superior quality.
- In shape, external appearance, development and colouring they must be characteristic of the variety and/or commercial type.
- They must be free from defects with the exception of very slight superficial defects, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package.



## PROVISIONS CONCERNING QUALITY

### *Class I*

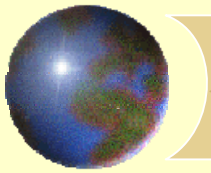
- Citrus fruit in this class must be of good quality.
- They must be characteristic of the variety and/or commercial type.
- The following slight defects, however, may be allowed, provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package:



## **PROVISIONS CONCERNING QUALITY**

### *Class I*

- **slight defect in shape**
- **slight defect in colouring**
- **slight skin defects occurring during the formation of the fruit, such as silver scurfs, russets, etc.**
- **slight healed defects due to a mechanical cause such as hail damage, rubbing, damage from handling, etc.**

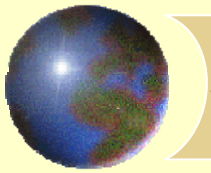


## PROVISIONS CONCERNING QUALITY

### *Class II*

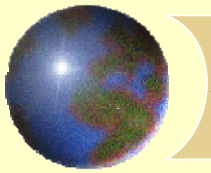
- **This class includes citrus fruit which do not qualify for inclusion in the higher classes but satisfy the minimum requirements specified above.**
- **The following defects may be allowed, provided the citrus fruit retain their essential characteristics as regards the quality, the keeping quality and presentation:**





## **PROVISIONS CONCERNING QUALITY**

- **defect in shape**
- **defect in colouring**
- **skin defects occurring during the formation of the fruit, such as silver scurfs, russets, etc.**
- **healed defects due to a mechanical cause such as hail damage, rubbing, damage from handling, etc.**
- **superficial healed skin alterations**
- **rough skin**
- **slight and partial detachment of the pericarp for oranges**

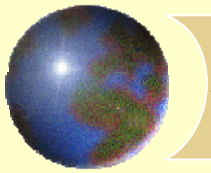


## **PROVISIONS CONCERNING SIZING**

### **A-Minimum size**

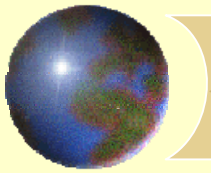
**Fruit of less than the following minimum sizes are excluded:**

- **Lemons      45 mm**
- **Limes        42 mm**
- **Satsumas, other mandarin varieties and their hybrids      45 mm**
- **Clementines 35 mm**
- **Oranges       53 mm**



## *PROVISIONS CONCERNING SIZING*

- Grapefruit and its hybrids 70 mm
- Pummelos and their hybrids 100 mm

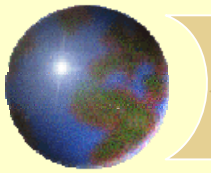


# PROVISIONS CONCERNING SIZING

## B-Size scales

### *Lemons*

<b>Size Code</b>	<b>Diameter in mm</b>
<b>0</b>	<b>79 – 90</b>
<b>1</b>	<b>72 - 83</b>
<b>2</b>	<b>68 - 78</b>
<b>3</b>	<b>63 - 72</b>
<b>4</b>	<b>58 - 67</b>
<b>5</b>	<b>53 - 62</b>
<b>6</b>	<b>48 - 57</b>
<b>7</b>	<b>45 - 52</b>



## PROVISIONS CONCERNING SIZING

### *Limes*

**Size Code**

**Diameter in mm**

**1**

**58 – 67**

**2**

**53 – 62**

**3**

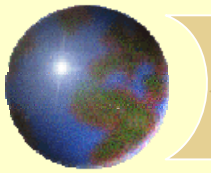
**48 – 57**

**4**

**45 – 52**

**5**

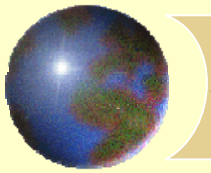
**42 – 49**



## **PROVISIONS CONCERNING SIZING**

### *Satsumas, clementines, and other mandarin varieties and their hybrides*

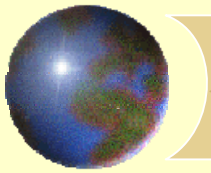
<b>Size Cod</b>	<b>Diameter in mm</b>
<b>1 – XXX</b>	<b>78 and above</b>
<b>1 – XX</b>	<b>67 - 78</b>
<b>1 or 1 – X</b>	<b>63 - 74</b>
<b>2</b>	<b>58 - 69</b>
<b>3</b>	<b>54 - 64</b>
<b>4</b>	<b>50 - 60</b>
<b>5</b>	<b>46 - 56</b>
<b>6</b>	<b>43 - 52</b>
<b>7</b>	<b>41 - 48</b>
<b>8</b>	<b>39 - 46</b>
<b>9</b>	<b>37 - 44</b>
<b>10</b>	<b>35 - 42</b>



# PROVISIONS CONCERNING SIZING

## *Oranges*

<b>Size Code</b>	<b>Diameter in mm</b>
<b>0</b>	<b>92 – 110</b>
<b>1</b>	<b>87 – 100</b>
<b>2</b>	<b>84 – 96</b>
<b>3</b>	<b>81 – 92</b>
<b>4</b>	<b>77 – 88</b>
<b>5</b>	<b>73 – 84</b>
<b>6</b>	<b>70 – 80</b>
<b>7</b>	<b>67 – 76</b>
<b>8</b>	<b>64 – 73</b>
<b>9</b>	<b>62 – 70</b>
<b>10</b>	<b>60 – 68</b>
<b>11</b>	<b>58 – 66</b>
<b>12</b>	<b>56 – 63</b>
<b>13</b>	<b>53 – 60</b>



# PROVISIONS CONCERNING SIZING

## *Grapefruit and its hybrids*

**Size Code**

**Diameter in mm**

**0**

**>139**

**1**

**109 – 139**

**2**

**100 – 119**

**3**

**93 – 110**

**4**

**88 – 102**

**5**

**84 – 97**

**6**

**81 – 93**

**7**

**77 – 89**

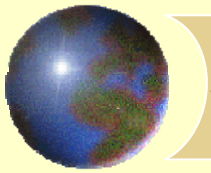
**8**

**73 – 85**

**9**

**70 – 80**

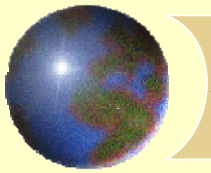




## **PROVISIONS CONCERNING SIZING**

### ***Pummelos and their hybrids***

<b>Size Code</b>	<b>Diameter in mm</b>
<b>0</b>	<b>&gt;170</b>
<b>1</b>	<b>156 – 170</b>
<b>2</b>	<b>148 – 162</b>
<b>3</b>	<b>140 – 154</b>
<b>4</b>	<b>132 – 146</b>
<b>5</b>	<b>123 – 138</b>
<b>6</b>	<b>116 – 129</b>
<b>7</b>	<b>100 – 118</b>

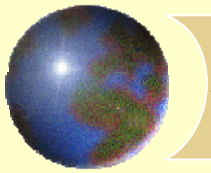


## **PROVISIONS CONCERNING SIZING**

### **C-Uniformity**

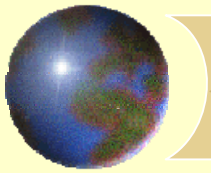
**Uniformity in size is achieved by the above mentioned size scales, unless otherwise stated as follows:**

**(i) For fruit arranged in regular layers in the package, including unit consumer packages, the maximum difference between the smallest and the largest fruit, within a single size code or, in the case of citrus fruit packed by count, within two adjacent codes, must not exceed the following maxima:**



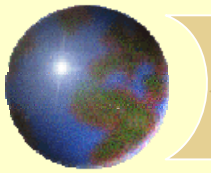
## PROVISIONS CONCERNING SIZING

	<b>Size Code</b>	<b>Maximum difference between fruit in the same package in mm</b>
<b>Lemons</b>	<b>0 – 7</b>	<b>7</b>
<b>Limes</b>	<b>1 – 5</b>	<b>7</b>
<b>Satsumas, clementines, other mandarin varieties and their hybrids</b>	<b>1-XXX - 4</b>	<b>9</b>
	<b>5 – 6</b>	<b>8</b>
	<b>7 – 10</b>	<b>7</b>
<b>Oranges</b>	<b>0 – 2</b>	<b>11</b>
	<b>3 – 6</b>	<b>9</b>
	<b>7 – 13</b>	<b>7</b>



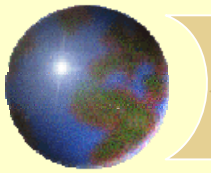
## **PROVISIONS CONCERNING SIZING**

**(ii) For fruit not arranged in regular layers in packages and in individual rigid packages for direct sale to the consumer, the difference between the smallest and the largest fruit in the same package must not exceed the range of the appropriate size code in the size scale or, in the case of citrus fruit packed by count, the range in mm of one of the two adjacent consecutive size codes concerned.**



## **PROVISIONS CONCERNING SIZING**

**(iii) For fruit in bulk bins and fruit in individual non-rigid (nets, bags,...) packages for direct sale to the consumer, the difference between the smallest and the largest fruit in the same package must not exceed the range obtained by grouping three consecutive sizes codes in the size scale.**



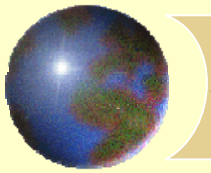
# **PROVISIONS CONCERNING TOLERANCES**

**Tolerances in respect of quality and size shall be allowed in each package for produce not satisfying the requirements of the class indicated.**

## **A-Quality tolerances**

### **"Extra" Class**

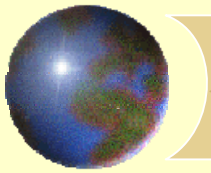
**5 per cent, by number or weight, of citrus fruit not satisfying the requirements of the class, but meeting those of Class I or, exceptionally, coming within the tolerances of that class.**



## **PROVISIONS CONCERNING TOLERANCES**

### **Class I**

**10 per cent by, number or weight, of citrus fruit not satisfying the requirements of the class, but meeting those of Class II- or, exceptionally, coming within the tolerances of that class.**



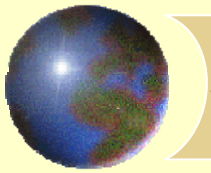
# **PROVISIONS CONCERNING TOLERANCES**

## **Class II**

**10 per cent by, number or weight, of citrus fruit satisfying neither the requirements of the class, nor the minimum requirements, with the exception of produce affected by rotting or any other deterioration rendering it unfit for consumption.**

**Within this tolerance, a maximum of 5 per cent is allowed of fruit showing slight superficial unhealed damage, dry cuts or soft and shrivelled fruit.**

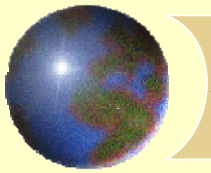




# **PROVISIONS CONCERNING TOLERANCES**

## **B-Size tolerances**

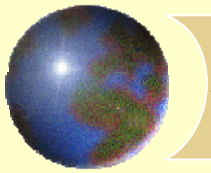
**For all classes and types of presentation: 10 per cent, by number or weight, of citrus fruit corresponding to the size immediately below and/or above that (or those, in the case of the combination of three sizes) mentioned on the package is allowed.**



## **PROVISIONS CONCERNING TOLERANCES**

**In any case, the tolerance of 10 per cent applies only to fruit not smaller than the following minima:**

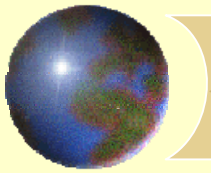
- **Lemons**                      **43 mm**
- **Limes**                         **40 mm**
- **Satsumas, other mandarin varieties and their hybrids**  
**43 mm**
- **Clementines**                **34 mm**
- **Oranges**                        **50 mm**
- **Grapefruit and its hybrids**        **67 mm**
- **Pummelos and their hybrids**        **98 mm**



# PROVISIONS CONCERNING PRESENTATION

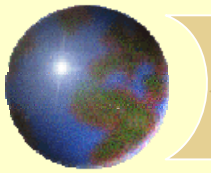
## A-Uniformity

- **The contents of each package must be uniform and contain only citrus fruit of the same origin, variety or commercial type, quality, and size, and appreciably of the same degree of ripeness and development.**
- **In addition, for the "Extra" Class, uniformity in colouring is required.**



## **PROVISIONS CONCERNING PRESENTATION**

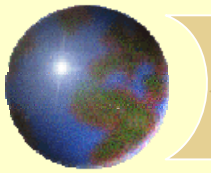
- **The visible part of the contents of the package must be representative of the entire contents.**
- **Sales packages of a net weight not exceeding 3 kilogrammes may contain mixtures of citrus fruit of different species, provided they are uniform in quality and, for each species concerned, they are uniform in origin, variety or commercial type and size, and appreciably of the same degree of ripeness and development.**



# PROVISIONS CONCERNING PRESENTATION

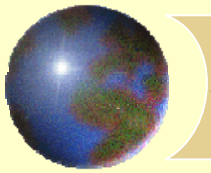
## B-Packaging

- **The citrus fruit must be packed in such a way as to protect the produce properly.**
- **The materials used inside the package must be new, clean and of a quality such as to avoid causing any external or internal damage to the produce.**
- **The use of materials, particularly of paper or stamps bearing trade specifications, is allowed provided the printing or labelling has been done with non-toxic ink or glue.**



# **PROVISIONS CONCERNING PRESENTATION**

- **Stickers individually affixed on the produce shall be such that, when removed, they neither leave visible traces of glue, nor lead to skin defects.**
- **If the fruit are wrapped, thin, dry, new and odourless paper must be used.**
- **The use of any substance tending to modify the natural characteristics of the citrus fruit, especially its taste or smell, is prohibited.**
- **Packages must be free of all foreign matter. However, a presentation where a short (not wooden) twig with some green leaves adheres to the fruit is allowed.**

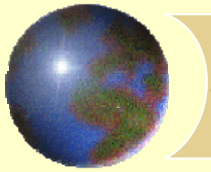


# **PROVISIONS CONCERNING PRESENTATION**

## **C-Presentation**

**The citrus fruit may be presented:**

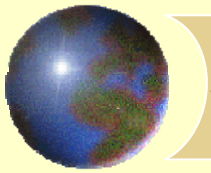
- arranged in regular layers in packages.**
- not arranged in regular layers in packages or in bulk bins. This type of presentation is only allowed for Classes I and II.**
- in individual packages for direct sale to the consumer of a weight less than 5 kg either**
  - made up by number of fruit or**
  - made up by weight of fruit.**



## **PROVISIONS CONCERNING MARKING**

- **Each package must bear the following particulars, in letters grouped on the same side, legibly and indelibly marked, and visible from the outside.**

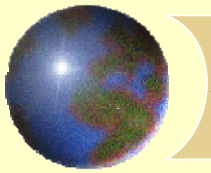




# PROVISIONS CONCERNING MARKING

## A-Identification

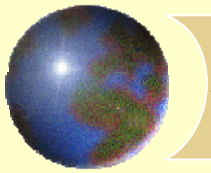
<b>Packer</b>	)	<b>Name and address or</b>
<b>and/or</b>	)	<b>officially issued or</b>
<b>Dispatcher</b>	)	<b>accepted code mark</b>



# **PROVISIONS CONCERNING MARKING**

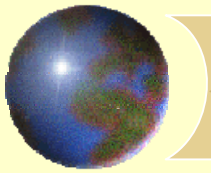
## **B-Nature of produce**

- **Name of the species if the produce is not visible from the outside, except for satsumas, clementines, other mandarin varieties and their hybrids for which the name of the species or variety is compulsory.**
- **In case of sales packages containing a mixture of citrus fruit of different species, the names of the different species shall appear in addition to the details listed above.**



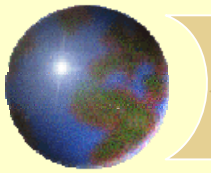
## **PROVISIONS CONCERNING MARKING**

- **Name of the variety, for oranges.**
- **Name of the type:**
- **for lemons: the indication "Verdelli" and "Primofiore" where appropriate,**
- **for clementines: the indication "Clementines, pipless", "Clementines" (1 to 10 pips), "Clementines with pips" (more than 10 pips) where appropriate,**



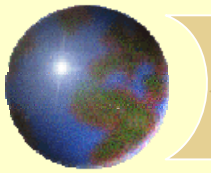
## **PROVISIONS CONCERNING MARKING**

- **for grapefruit and its hybrids: the indication “pink” or “red” where appropriate,**
- **for pummelos and their hybrids: the indication “pink” or “red” where appropriate.**



## **PROVISIONS CONCERNING MARKING**

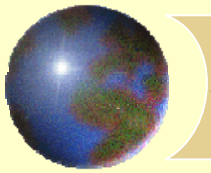
In case of sales packages containing a mixture of citrus fruit of different species, the names of the different species shall appear in addition to the details listed above.



# **PROVISIONS CONCERNING MARKING**

## **C- Origin of produce**

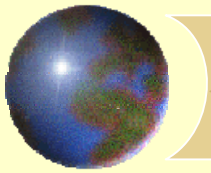
- **Country of origin and, optionally, district where grown, or national, regional or local place name.**
- **In the case of sales packages containing a mixture of citrus fruit of different species of different origins, the indication of each country of origin shall appear next to the name of the species concerned.**



# **PROVISIONS CONCERNING MARKING**

## **D-Commercial specifications**

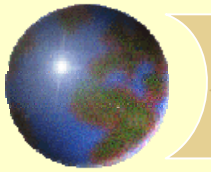
- **Class.**
- **Size code (or, when fruit packed by count fall under two adjacent codes, size codes or minimum and maximum diameter in mm) for fruit presented in accordance with the size scale or the lower and the upper limiting size code in the case of three consecutive sizes of the size scale.**



## **PROVISIONS CONCERNING MARKING**

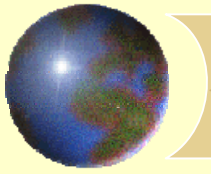
- **Size code (or, when fruit packed by count fall under two adjacent codes, size codes or minimum and maximum diameter in mm) and number of fruit, in the case of fruit arranged in layers in the package.**





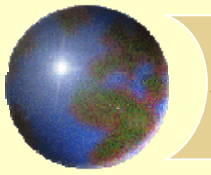
## **PROVISIONS CONCERNING MARKING**

- **Where appropriate, mention of the preserving agents or other chemical substance used, where such use is compatible with the regulations of the importing country.**



# PROVISIONS CONCERNING MARKING

**E-Official control mark (optional)**



**THANK YOU**

**Undersecretariat For Foreign Trade  
DG of Standardization For Foreign Trade  
Republic of Turkey**

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