

# 53215 Hardness tester (no destructive)

This tester is used for the hardness determination of fruit and vegetables, the tests can be done in a vertical and horizontal position. The hardness is a very important index in the quality control.

The main characteristic of the instrument is that it is not destructive for the product, therefore we have these advantages:

- the various levels of maturation of a determined fruit can be followed directly on the plant during the whole growing's cycle
- measurements can be carried out on the products where the classic fruit pressure tester, destructive instrument, do not give acceptable results.

The use of the instrument is very simple: once taken the instrument, place the plunger against the fruit and progressively press until the fruit is completely against the grey basement of the plunger.

For a more meaningful control it is necessary to take various samples of fruit. On each fruit must be carried out two measurements on the opposite points of fruit. The determined value, average of the two measurements, is expressed in Shore degrees, range of reference for the hardness of a material.

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Technical Data :

<u>Display</u>: 4 digits, 10 mm <u>Range</u>: 10 – 90 Shore <u>Resolution</u>: 0.1 Shore

T.R. Turoni srl Via Copernico 26 47122 Forlì (FC) - Italy Tel. +39 0543 724848 Fax +39 0543 774670 info@trturoni.com - www.trturoni.com

(ES) Equipements Scientifiques SA - Département Bio-Tests & Industries - 127 rue de Buzenval BP 26 - 92380 Garches Tél. 01 47 95 99 90 - Fax. 01 47 01 16 22 - e-mail: bio@es-france.com - Site Web: www.es-france.com

## **1. SPECIFICATIONS**

<u>Display</u>: 4 digits, 10 mm <u>Range</u>: 0 – 100 Shore <u>Resolution</u>: 0.1 Shore <u>Power supply</u>: 4 x 1,5 AA <u>Operating conditions</u>: 0-50°C / less than 80% humidity <u>Size</u>: 162x65x28 mm (6.4x2.6x1 inches) <u>Weight</u>: 170 grams (without batteries) <u>Automatic power off</u>

### 2. HOW TO USE

- 1) turn on the meter
- 2) press the key MAX
- 3) hold the meter vertically
- 4) apply the presser foot on the fruit skin as rapidly as possible
- 5) hold for 1 or 2 seconds
- 6) the maximum reading will display
- 7) to take the next measurement just press ZERO

### 3. AVERAGE OF n (till nine) MEASUREMENTS

- 1) turn on the meter
- 2) press the key MAX
- 3) press N/AVE key till the n measurements desiderated (from 1 to 9 n)
- 4) wait for a bip
- 5) take the first measurement
- 6) press ZERO key
- 7) take the n measurements (after each measurement press ZERO)
- 8) after the last measurement, the average will be displayed
- 9) press N/AVE to exit average option

### 4. CALIBRATION

- 4.1) Zero calibration
- 1) hold the instrument vertically with the sensor hanging on the hair
- 2) the reading on the display should be "0"
- 3) if not, press ZERO key
- 4.2) Max calibration
- 1) make the measurement on flat glass
- 2) the reading on the display should be between 99.5 and 101
- 3) if not press CAL key to carry out max calibration

### **5. BATTERY REPLACEMENT**

The battery symbol will appears on the display