

The Agrosta®Micro is a versatile durometer that measures the softness of small size samples of material or alive organisms – With a wide range of hardness testing possibilities



Mark and patent registered.  
Designed and manufactured by AGROSTA

Congratulations for having acquired an AGROSTA®Micro !

Your box contains:

- The device itself composed by the Usb box with pug, and a the sensor
- The software to be installed (On a CD)
- A second spring provided for softer samples
- The manual

The AGROSTA®Micro has been completely designed and assembled in France. The electronic board has been manufactured through a highly robotized process.

The AGROSTA®Micro is not waterproof ! It is a precision instrument, avoid falls and shocks

The AGROSTA®Micro is guaranteed 2 years from the date of shipment

- Minimal measurement : 25 Grams (Threshold)
- Maximal measurement : 1000 Grams (With hardest spring hardly screwed)
- Resolution : 1 Gram
- Precision : 0.1 Gram
- Precision 24 Bits (10 million steps on the 100%)



**Measurement principle :**

- Press your sample on the tip till you reach the plastic abutment
- Once the pressure on the tip reaches 25 grams, the device starts to collect weight every millisecond
- Once the pressure comes back to less than 25 grams (When you stop pressing your sample), the device calculates and stores the maximum pressure reached during measurement



**TAKE CARE TO TAKE THE SENSOR IN THE RIGHT POSITION when you connect the device, and when you start the software (Tip free and in the same position as the one you will use to measure your sample)**

The device takes the origin when you switch it on (When you launch the software on your PC, and select the COM port). If the sensor is not in the right position when you start the device :

- According to the measurement principle, if the origin has been taken in the wrong position, the weight of the tip + screw + spring can be added or subtracted depending on the position you are using

**Example:**

If I start the device in this position (Tip looking down) :



And use it in this position (Tip looking up) :



You add the weight of the tip + spring + screw to each of your measurement  
Considering the fact that you are adding more than 25 grams,  
The pressure will never become less than 25 grams, and no data will be recorded (According to measurement principle)

**STARTING / INSTALLING SOFTWARE**

- 0) Don't connect your device to the computer
- 1) Install the soft completely
- 2) The soft starts automatically, and driver setup is launched (check that driver installation is not blocked by your system)
- 3) Connect your device
- 4) Wait one minute till your computer recognizes it, and till the internal software inside the device starts (If you don't wait, you will obtain bad values)
- 5) Launch the soft from your desktop
- 6) The soft starts immediately, you can choose the COM port corresponding to your device on top – left side – Click on the COM port corresponding to your device – If you have a doubt, start the device manager of your PC, and find the COM port corresponding to "Ftdi" – Or, more easy, try each COM port, wait 15 seconds, and press the tip on a table in order to see whether you obtain a measurement

The screenshot shows the AGROSTA MICRO FIRMNESS TESTING software interface. The window title is "AGROSTA MICRO FIRMNESS TESTING". The interface is divided into several sections:

- Left Panel:** A "Click on your device" section with a list containing "COM1" and "COM8". Below this is a circular gauge with a green needle pointing to a value of 47.
- Top Right Panel:** A form for recording a batch. It includes fields for "DATE" (05-06-16), "BATCH" (BA), "Id" (171477), and "DESCRIP.". There are also radio buttons for "1 Me/Fruit", "2 Me/Fruit", "3 Me/Fruit", and "4 Me/Fruit". A "RECORD BATCH" button is present.
- Center Panel:** A horizontal chart area with a "DELETE" button.
- Bottom Panel:** An email notification from "Laurent" with the subject "20160310". The email text reads: "Hi Amaresha, Sorry for late answer, When you are in measurement menu, just select the data you want to delete inside horizontal chart, and click on 'Delete' Once the batch is recorded, you have to open the file after having clicked on 'ACCESS TO BATCHES', and then remove the data manually, and". There is also a "SEND MESSAGE TO ALL AGROSTA 100 USERS" button and a "REFRESH" button.

**TAKE REFERENCE VALUE AND ADJUST FIRMNESS RANGE (If required)**

The reference value is when the tip is completely pressed on a hard surface (like a table)

As the durometer is a versatile system, you can adjust the pressure range to your requirements (According to procedure described hereafter)

This can be a problem if you want to compare values with other researchers / operators having the same device

In this case, be sure to work according to the same reference value as other operators, and using the same spring (There are 2 springs : the harder is mounted on the instrument, the softer is provided separately)

The instrument is provided with a reference value around 320 grams

You can change the range of pressure by turning the screw :



Always disconnect your device before turning the screw

If you cannot reach the range of pressures according to your requirements by turning the screw, you can change the spring, and put the softer spring provided

First, remove this part :



Then remove the spring, and replace it :



**START A NEW BATCH WITH RECORDING**

- 1) Enter the name of the batch to be measured in the field « BATCH » - Avoid accents, “, /, \*, ., : in the name of the batch, but you can put the date inside this name for example
- 2) Enter complementary information in the field « FRUIT » if necessary
- 3) « START » appears – click on START :

The screenshot shows the 'AGROSTA MICRO FIRMNESS TESTING' software interface. On the left, there is a 3D model of a fruit with a green arrow indicating firmness measurement. The main area contains a data entry form with the following fields:

- MINIMUM: 82,0
- MAXIMUM: 94
- Value to be added: 44
- NUMBER: 4
- AVERAGE: 90
- DEVIATION: 5
- H INDEX: 5,93
- DATE: 05-06-16
- BATCH: BA
- Id: 171477
- DESCRIPT.: (empty)
- Record only if more than: 5
- And less than: 100
- Measurement options:  1 Me/Fruit,  2 Me/Fruit,  3 Me/Fruit,  4 Me/Fruit

A red 'RECORD BATCH' button is visible. Below the form, a horizontal chart shows recorded values: 94, 91, 92, 82. A 'DELETE' button is next to the chart. At the bottom, there is an email notification area showing a message from 'Laurent' with a 'Gr 94' indicator.

- 4) Choose the number of measurements to be made on each sample – Only the average will be added to the list
- 5) Make the measurements

The screenshot shows the 'AGROSTA MICRO FIRMNESS TESTING' software interface after measurements. The main area features a bar chart titled 'GHT' showing the results of multiple measurements. The y-axis ranges from 0 to 140. The chart shows a series of bars with varying heights, representing individual measurements. A large 'Gr 130' indicator is displayed at the bottom left. The interface also includes a 3D fruit model, a 'Print' button, and an email notification area.

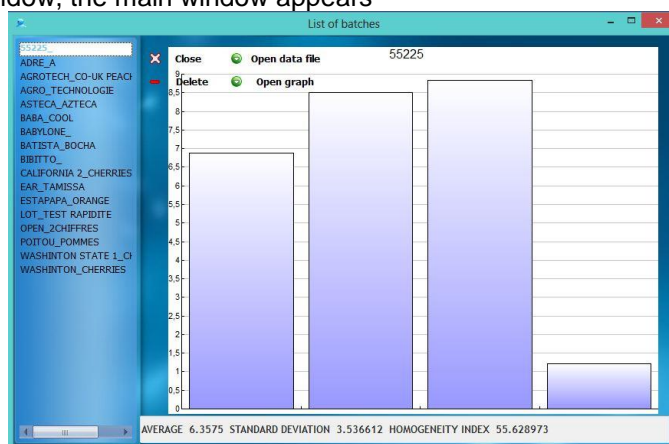
- 6) When the batch is finished, click on « RECORD BATCH » - the button disappears, and a graph is displayed
- 7) All data are available under Excel compatible format (.csv) in the following folder :
  - **C:\AGROSTASAVE**
- 8) Graphs & statistics are available in the following folder :
  - **C:\AGROSTA**
- 9) You can start a new batch by entering a new batch name



### CONSULT PREVIOUS BATCHES

Just press the button “ACCESS TO BATCHES” in order to access to previous batches graph and statistics  
You can as well delete old batches from this window

Close the consultation window, the main window appears



By clicking on “Open data file”, you can open the .csv file corresponding to your batch.  
Excel is launched if it is defined in your computer as default software for the .csv files

If you click on “Open graph”, the drawing software of your computer is launched, and the graph is displayed as a picture.