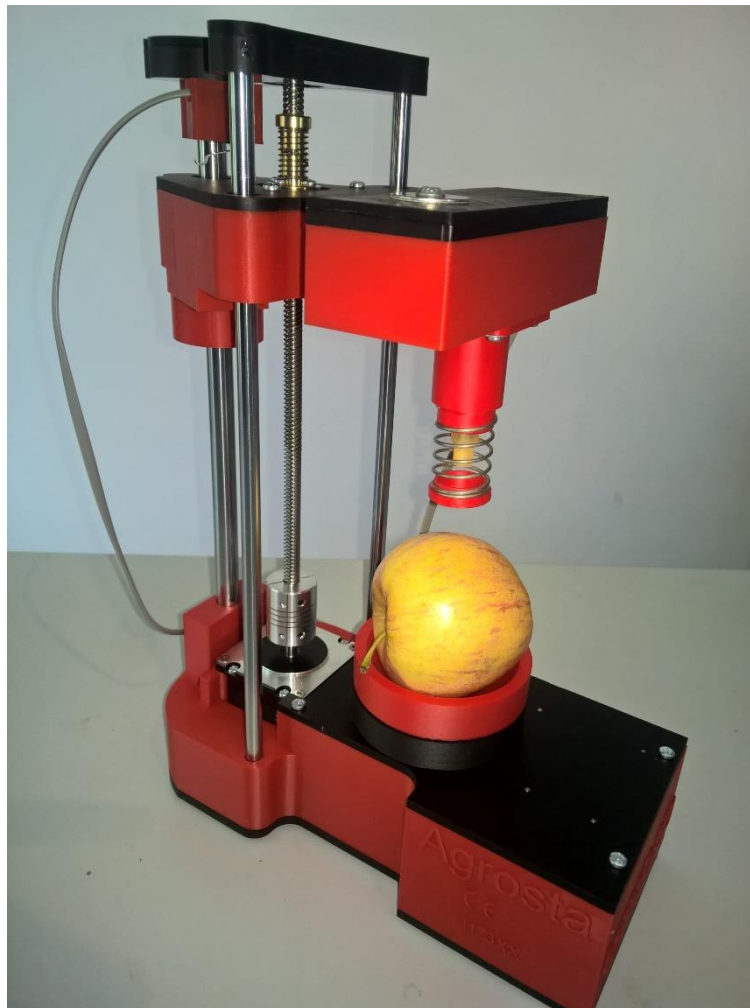


The Fruit Texture Analyzer has been designed in 2018
It comes with the best technology for measuring the **firmness / softness** of quite any kind of fruit or vegetable – It is a statistic instrument for measuring the crispiness of Apples, pears, potatoes, mangos, apricots, papaya, cucumber, peaches, kiwi, and the firmness of oranges, lemon, pomelo, cherry, strawberry... and many other fruits and vegetables



Many thanks for having acquired an Agrosta instrument

Your package contains :

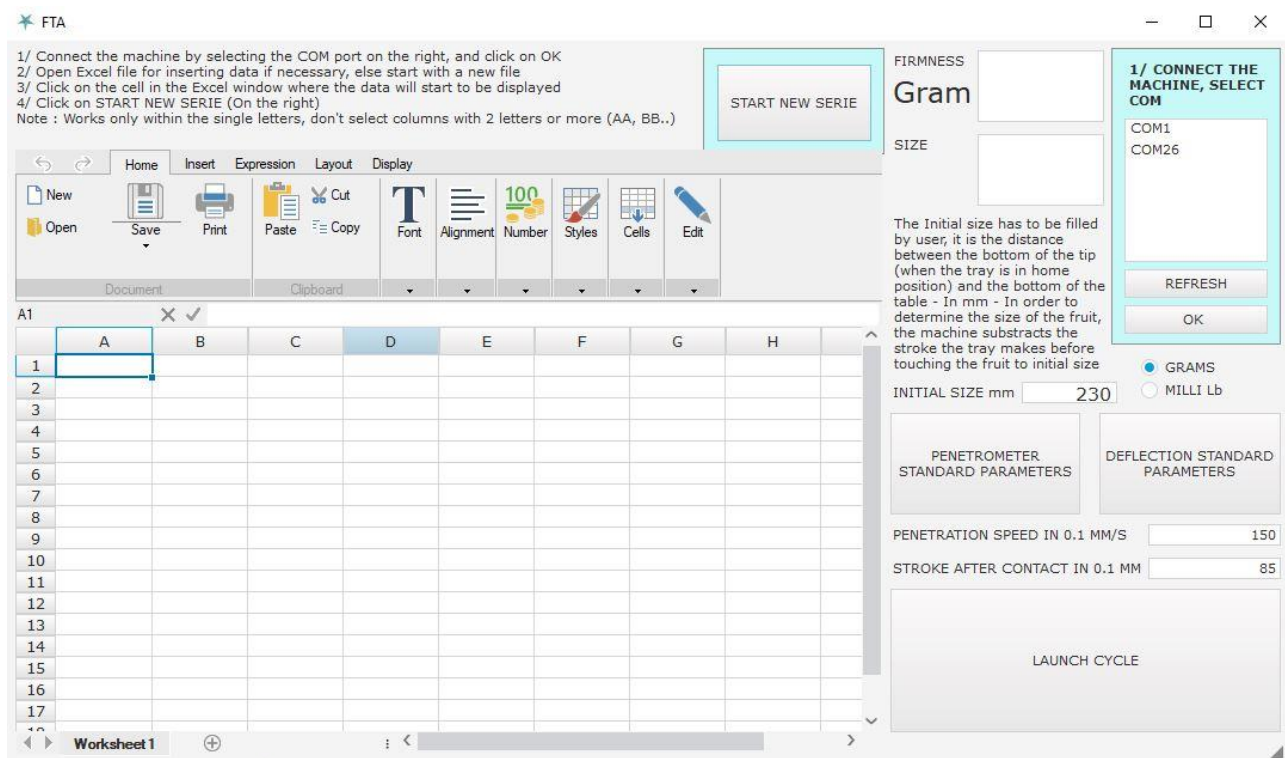
- The instrument itself
- 2 Tips : 8 and 11 (mounted on instrument), other tips on demand
- A USB Stick with the software for windows
- A USB cable for the texturometer
- A power supply
- A certificate of conformity
- A manual
- A removable table

The FTA is provided with 2 tips : A tip of 11 and a tip of 8 + specific tips according to your requirements

- The tip of 11 is recommended for : APPLE, PEAR, PEACH, KIWI, PAPAYA
- The tip of 8 is recommended for : MANGO, CUCUMBER, APRICOT, POTATO
- Other tips on demand (ORANGE, CHERRY, STRAWBERRY, MELON, AVOCADO..)

Main characteristics of the machine :

- Using Stepper Motor Nema 23
- Stepstick (Motor Electronics) from Asia
- Main electronic processor based on Arduino (Made in Italy)
- Electronic shield for pressure testing made in Hong Kong (Based on HX 711 24 bits precision)
- Design and software made by Agrosta in France
- Precision force sensors made in France
- Resolution : 1 gram
- Max pressure : 20 000 grams (Capacity 20 Kg, limited to 18 Kg by software)
- Min pressure measurement : 31 grams
- Precision : 0.2 grams
- Software compatible with Windows XP, 7, 8 and 10



1/ Connect the machine by selecting the COM port on the right, and click on OK
 2/ Open Excel file for inserting data if necessary, else start with a new file
 3/ Click on the cell in the Excel window where the data will start to be displayed
 4/ Click on START NEW SERIE (On the right)
 Note : Works only within the single letters, don't select columns with 2 letters or more (AA, BB..)

START NEW SERIE

FIRMNESS Gram

SIZE

The initial size has to be filled by user, it is the distance between the bottom of the tip (when the tray is in home position) and the bottom of the table - In mm - In order to determine the size of the fruit, the machine subtracts the stroke the tray makes before touching the fruit to initial size

INITIAL SIZE mm 230

PENETRATION SPEED IN 0.1 MM/S 150

STROKE AFTER CONTACT IN 0.1 MM 85

LAUNCH CYCLE

1/ CONNECT THE MACHINE, SELECT COM

COM1
COM26

REFRESH

OK

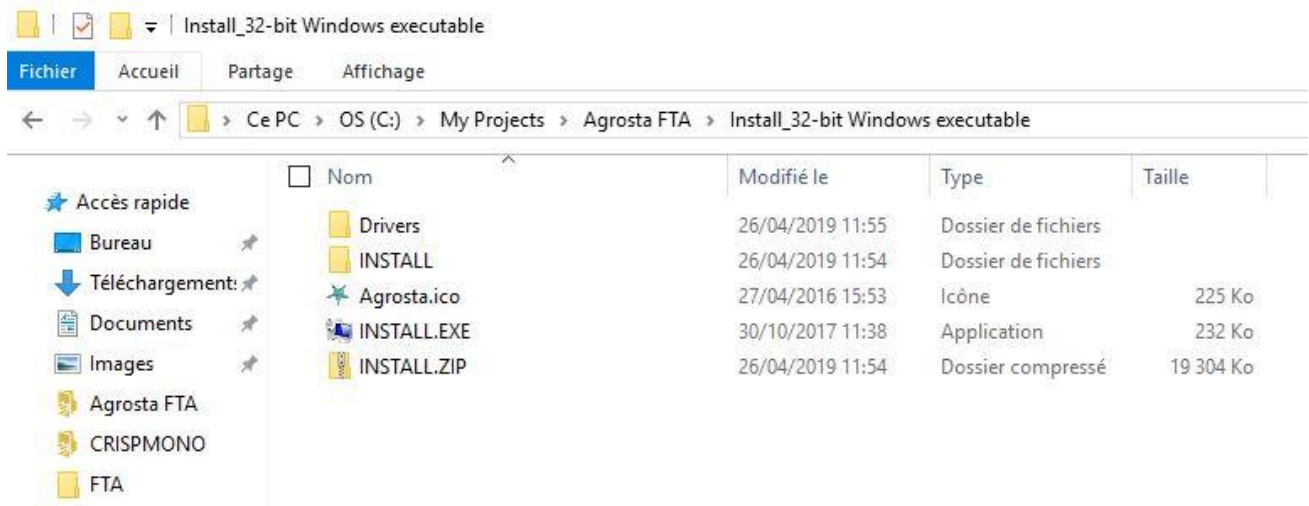
GRAMS
MILLI Lb

PENETROMETER STANDARD PARAMETERS

DEFLECTION STANDARD PARAMETERS

1) Machine Setup

1/ INSTALL DRIVERS



Double click on “Drivers”, and double click on DRIVER 32 Bits or DRIVER 64 Bits depending on your computer type - Follow setup procedure

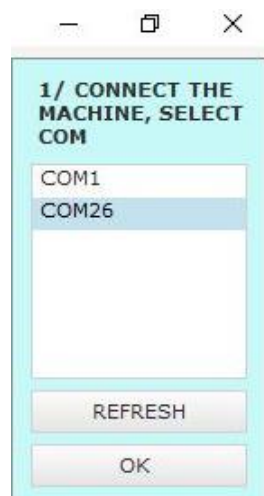
2/ DOUBLE CLICK ON “INSTALL” AND FOLLOW SETUP PROCEDURE

3/ THE SOFTWARE STARTS

4/ CONNECT THE FIRST USB PLUG BETWEEN THE MAIN MACHINE AND THE COMPUTER

5/ CONNECT POWER PLUG TO THE MAIN MACHINE

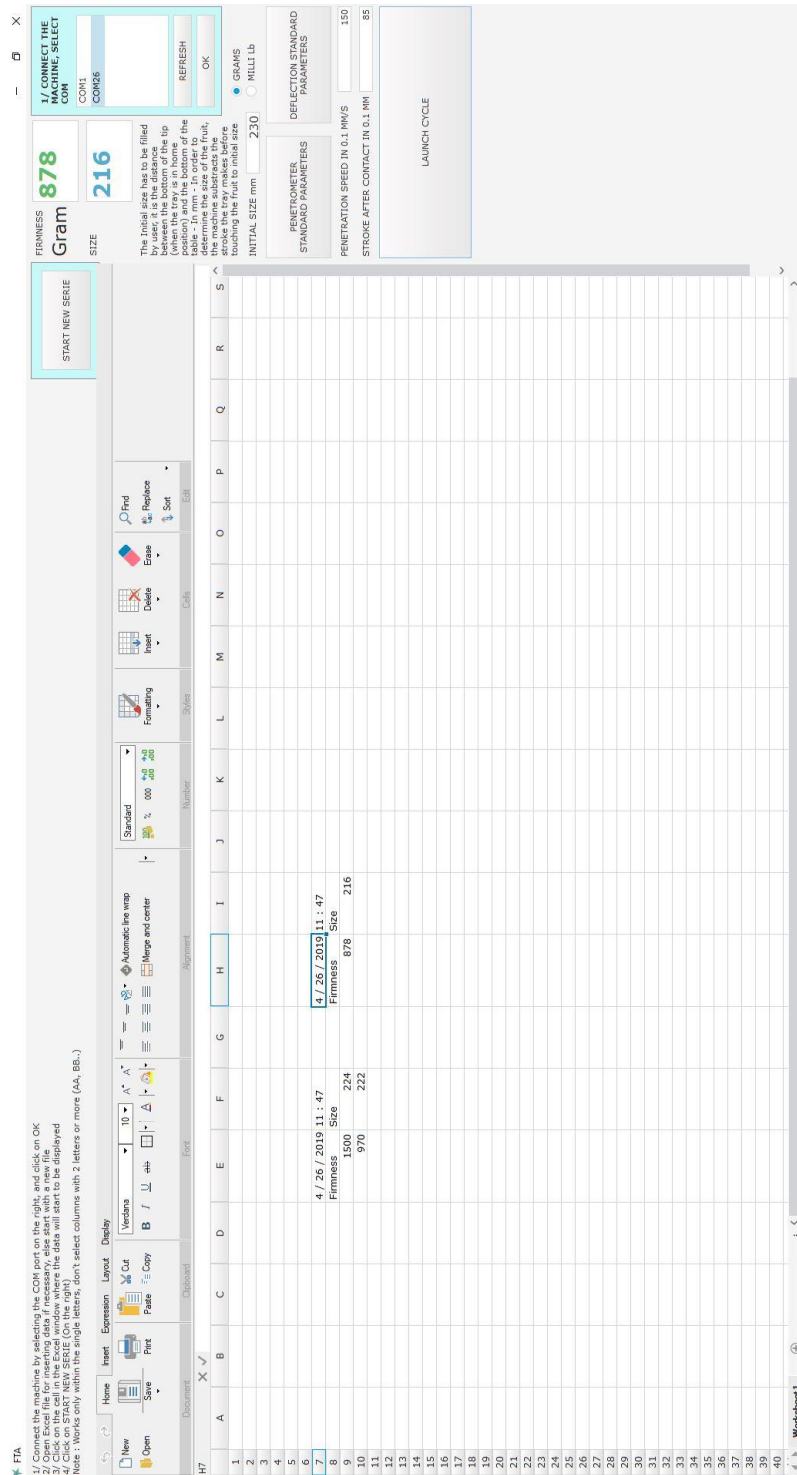
6/ Click on “REFRESH”



7/ A new COM port shall appear inside the list

8/ Click on it and then 2 times on OK

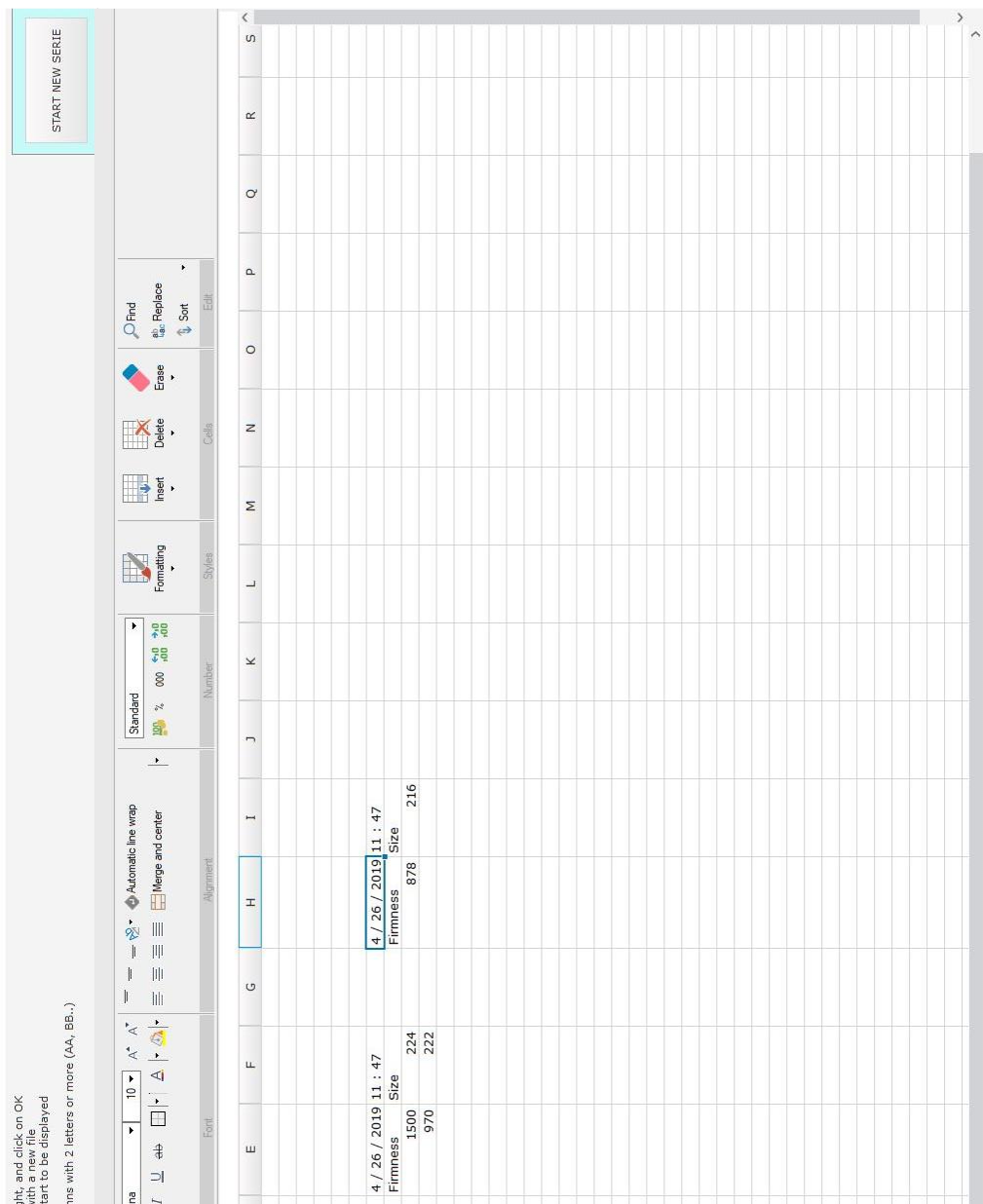
2) Software



The screenshot shows the software interface for the Fruit Texture Analyzer. At the top, there are controls for 'FIRMNESS Gram' (878) and 'SIZE' (216). A 'LAUNCH CYCLE' button is visible. Below these are various parameter settings like 'INITIAL SIZE mm' (230) and 'DEFLECTION REBOUND PARAMETERS'. The main area is a spreadsheet with columns labeled A through S and rows 1 through 40. The spreadsheet contains data for a test performed on '4 / 26 / 2019 11 : 47'. The data is as follows:

Row	Column	Value
7	H	4 / 26 / 2019 11 : 47 Firmness
8	H	878 Size
9	F	4 / 26 / 2019 11 : 47 Firmness
9	G	1500 Size
10	F	224
10	G	222
11	F	970
11	G	222

- The software comes with a light version of an OPENSOURCE EXCEL – So you don't need to have Excel on your computer, The software will generate Excel files, and you will have the opportunity to open and modify those files inside Agrosta Software (Only .xlsx files)
- Once your machine is connected (Procedure described before), you can either open an existing Excel file in order to add your measurements inside this file, or start with a new file
- Inside the EXCEL module, click on the cell where you want the measurements to be added for the coming Serie of fruits. The measurements will be added under the cell you have selected
- Then click on "START NEW SERIE" – The titles of the columns, as well as the date and time will be added



- You can now place your first fruit on the table, fill the initial size and adjust the parameters of speed and stroke after contact (Or click on one of the 2 buttons with preset parameters: Penetrometer or deflection)

The Initial size has to be filled by user, it is the distance between the bottom of the tip (when the tray is in home position) and the bottom of the table - In mm - In order to determine the size of the fruit, the machine subtracts the stroke the tray makes before touching the fruit to initial size

GRAMS
 MILLI Lb

INITIAL SIZE mm

PENETRATION SPEED IN 0.1 MM/S
 STROKE AFTER CONTACT IN 0.1 MM

- Now, you can click on “LAUNCH CYCLE”, the machine starts, and the values are displayed
- Measure your fruits one after each other :

4 / 26 / 2019	11 : 31	
Firmness	Size	
1475	212	
2374	211	
2211	215	

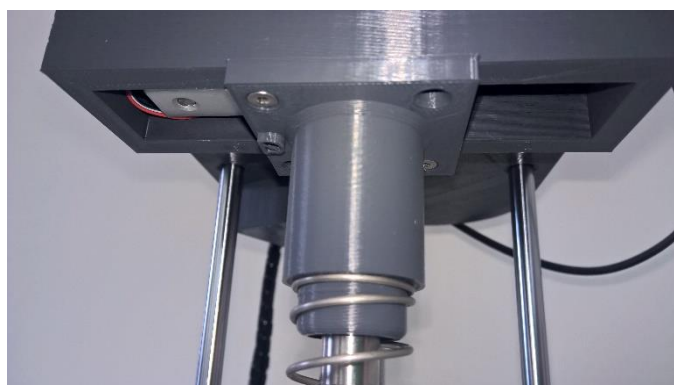
- You can start a new serie of fruits if you want by clicking on another cell inside Excel module, and then clicking again on “START NEW SERIE”
- You can modify your file, record it, add comments, insert columns or lines as you do in Excel: You can make calculations with functions like AVERAGE() or SUM() like you do in any Excel file
- Take care to limit your sheet to columns from A to Z, don't use columns starting from AA after Z

3) Maintenance

- You can pull on the spring in order to remove it, you can as well remove the spring support by removing the 2 screws maintaining it – The spring has been placed in order to maintain the fruits on the table during measurements, but some clients prefer to maintain the fruits in hand (traditional way of measuring)



- Remove the spring as well if you want to change the tip



- You can clean all machine components with hot water and soap