

Soft Tortilla Extensibility by Tension

TVT Texture Analyzer

The TVT Texture Analyzer (Figure 1) offers rapid and objective analysis for different products. The following parameters can be characterized for your product category:

- Toughness
- Extensibility

Both international standard methods as well as customer tailor-made profiles are available.



Figure 1: TVT Texture Analyzer

Scope

- Determination of extensibility for tortilla and thin bakery products by single cycle tension.

Method Description

The recording of the measurement data commences once the probe reaches the pre-set trigger force. The probe will then pull the sample to a pre-defined distance. After the pull, the probe returns to its starting position.

Calibration

Make sure the instrument is correct calibrated before the measurements. How to perform the calibration can be found in the User's Manual.

Load cell (recommended) 5 - 10 kg

Probe

R-STRG, Self-tightening roller grip, open end 45 mm wide, aluminum (Figure 2a)

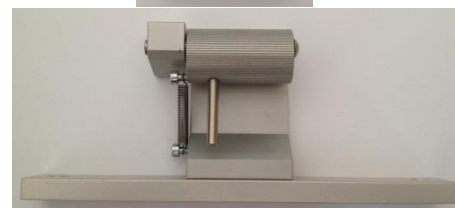
Figure 2a: R-STRG



Rig

R-STRG, Self-tightening roller grip, open end 45 mm wide, aluminum (Figure 2b)

Figure 2b: R-STRG



Part number set: 67.50.21

Profile settings

Setting Parameter

Single Cycle Tension

Sample height [mm]	50.0
Starting distance from sample [mm]	5.0
Extension [mm]	15.00
Initial speed [mm/s]	1.0
Test speed [mm/s]	1.7
Retract speed [mm/s]	10.0
Trigger force [g]	5
Data rate [pps]	333

Sample preparation

Cut the sample into rectangular strips with constant dimensions (length and width). In order to get a representative and uniform sample, the tortilla can be hold up towards the light when choosing a uniform area. Try to avoid any slack of the sample when attaching it to the rig, Figure 3. Storage and handling of the samples might influence the result and should thereby be kept constant.



Figure 3: Sample set-up

Curve Description

In Figure 4 a typical Force-Distance curve is illustrated. The maximum peak⁺ force value is here used for the determination of the extension resistance force of the sample, while the distance to the maximum force is the extensibility of the sample.

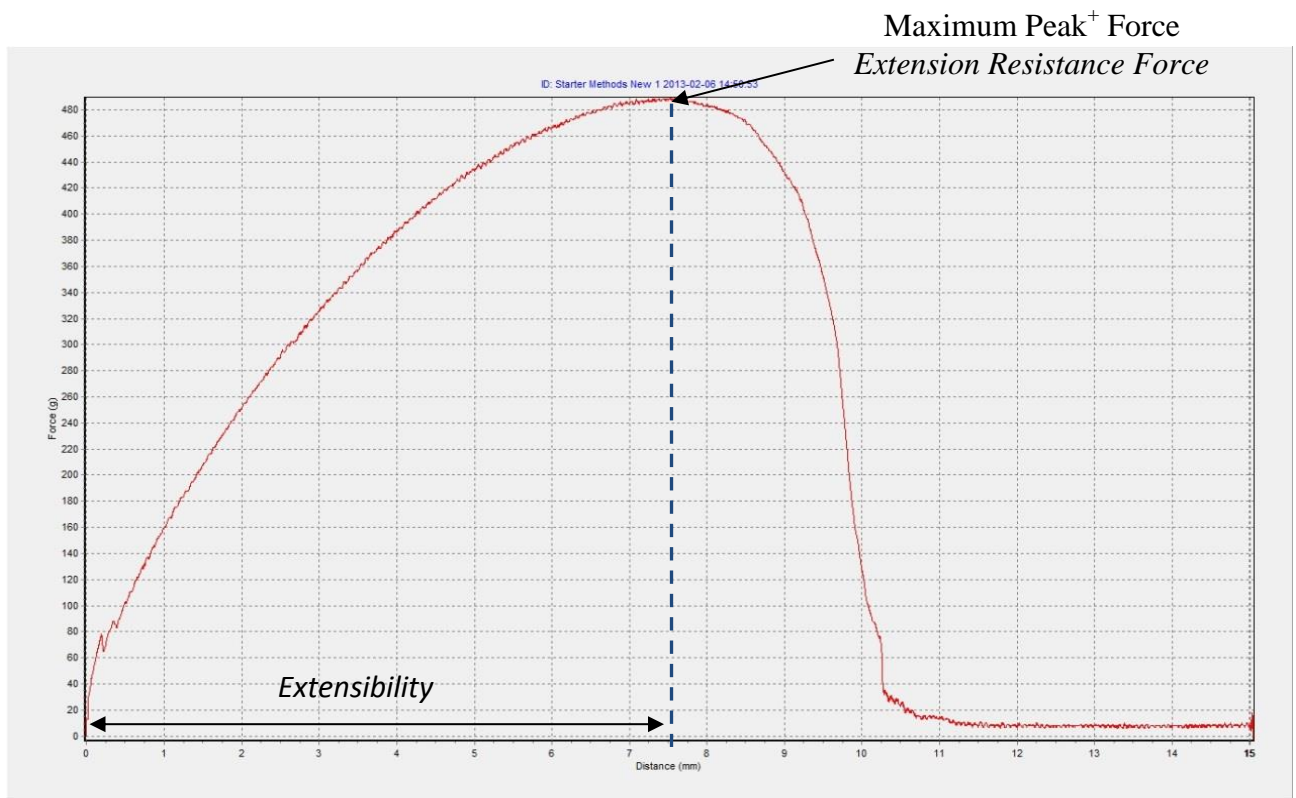


Figure 4: Extension test of soft tortilla.

Data Analysis

The force required to pull the sample to a certain distance/break is here defined as the extension resistance force and can be measured in the units [g] or [N]. The distance to the maximum peak⁺ force is the extensibility of the sample and is measured in [mm]. Except raw data (force, time and distance) the program also directly provides calculated results such as *mean value* and *standard deviation*.