Sausages Firmness – Shearing

TVT Texture Analyzer

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

- Hardness
- Springiness
- Resilience
- Cohesiveness
- Chewiness

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

Figure 1: TVT Texture Analyzer

Scope

- Determination of sausages firmness by single cycle shearing.

Method Description

The recording of the measurement data commences once the measurement starts. The probe will then cut/shear the samples to a pre-defined distance. After shear, 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. *NOTE: Do the zero probe calibration by turning the probe 90°. After probe calibration, make sure the blade passes through the hole in the insert without touching it.*

Load cell 15-20kg (recommended)

Probe
Warner Bratzler triangular blade (Figure 2a)
Part number: 67.13.05

Rig (Figure 2b)
Heavy Duty Stand, Part number: 67.50.80
Blade insert, Part number: 67.50.10

Recommended alternative:
Blade set, Part number: 67.13.00
Heavy Duty Stand, Part number: 67.50.80

Figure 2a: 67.13.05 WB triangular blade

Figure 2b: HDS with blade insert

Profile settings

Setting Parameter	
Single Cycle Compression	
Sample height [mm]	30.00
Starting distance from sample [mm]	5.0
Compression [mm]	40.00
Initial speed [mm/s]	1.5
Test speed [mm/s]	1.5
Retract speed [mm/s]	10.0
Trigger force [g]	40
Data rate [pps]	200

Sample preparation

Remove the samples from place of storage just prior to the measurement. Place the sample centered under the triangular knife blade.

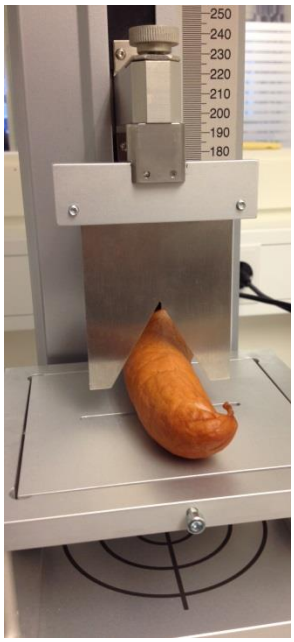

Figure 3: Sample set-up

Curve Description

In Figure 4 typical Force-Time compression cycle curves are illustrated. The maximum peak force is here related to the skin firmness and the area under the curve is the total work of the shearing. The red curve sample is a beer sausage and the blue curve sample is a chorizo sausage (see Figure 3).

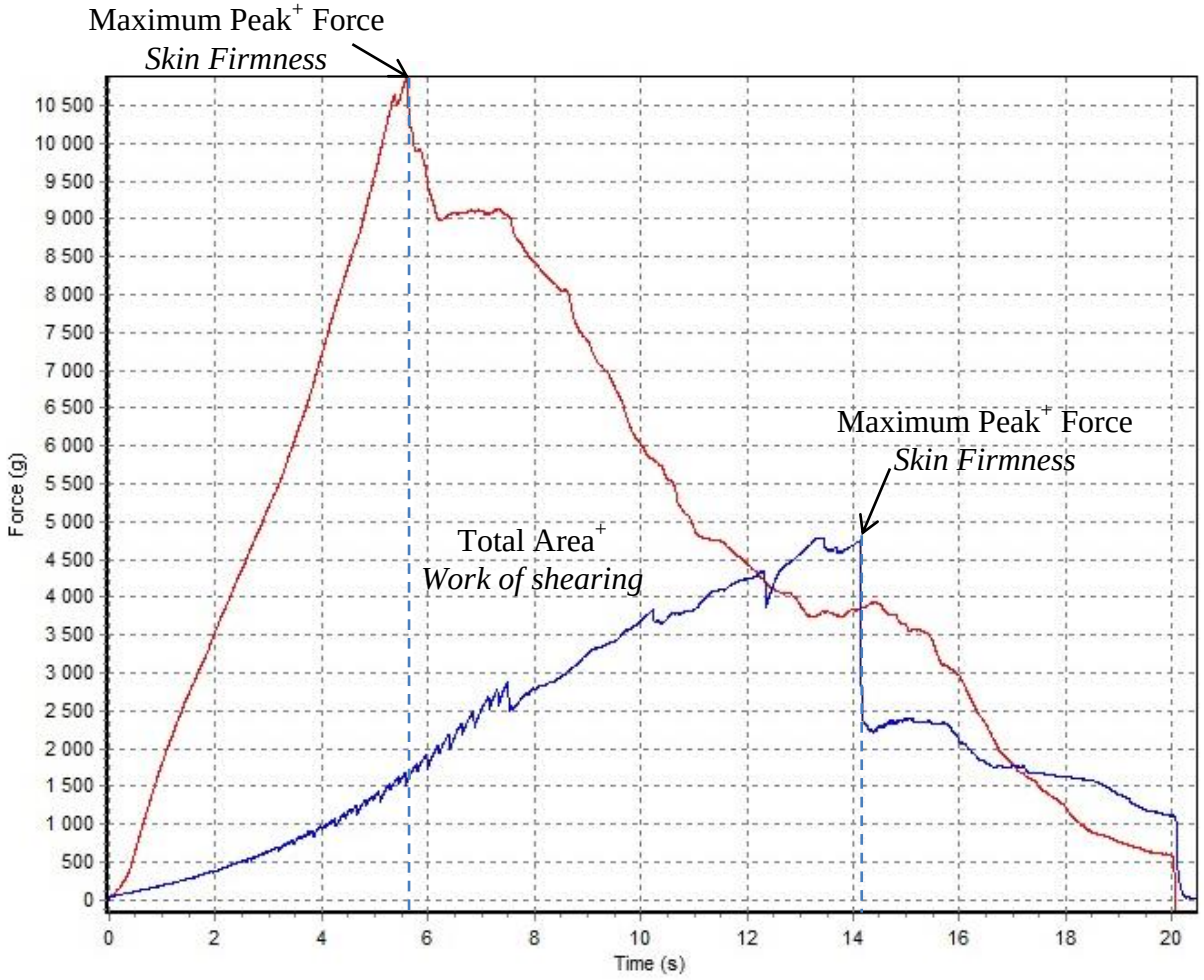

Figure 4: Shearing test of sausages.

Data Analysis

The maximum force required to shear through the skin of the sample is here defined as skin firmness and can be measured in the units **[g]** or **[N]**. Except raw data (force, time and distance) the program also directly provides calculated results such as ***mean value*** and ***standard deviation***.