

Food Texture

Textural properties of foods

- ✓ related to the deformation, disintegration and flow of the food under a force
 - ✓ Tactile properties
 - ✓ Physical properties

Penetrometers

- ✓ Measure the distance that a cone or a needle penetrates into a product under the force of gravity for a standard time
- ✓ For margarines, butter, fruits and vegetables

Shear test

- ✓ Force needed to shear a sample is measured over time and correlated to the firmness of the product
 - Tenderometer- pea
 - Warner-Bratzler Shear, Allo-Kramer Shear, Razor Blade Shear: Meat and meat products

Texture Profile Analysis

- ✓ Texture profile analysis (TPA): The instrument compresses a bite-sized piece of food (usually 1 cm cube) twice to simulate the chewing action of the teeth
- ✓ Compression is usually 80% of the original length of the sample

Texture Profile Analysis

- ✓ Sensory properties such as gumminess, cohesiveness, hardness, etc., can be determined with TPA
- ✓ The force curve generated as a function of time is known as texture profile curve

Aspects of a Texture Profile Analysis Curve

- ✓ The instrument compresses the sample twice
- ✓ Peak forces and areas under the curve are used to determine various properties of foods

Parameters Measured by Texture Profile Analysis

- ✓ Hardness
- ✓ Elasticity
- ✓ Adhesiveness
- ✓ Cohesiveness
- ✓ Brittleness
- ✓ Cheviness
- ✓ Gumminess