

Fromage Frais Texture Analysis

Understanding the texture of Fromage Frais is crucial for maintaining product consistency and quality. Firmness and adhesiveness are key attributes that affect the consumer's experience, especially as variations in fat content impact the overall texture. This analysis helps manufacturers control the texture during production to ensure a smooth, soft product.

Test Principle:

- The firmness and consistency of Fromage Frais were evaluated by penetration using a 25.4 mm cylinder probe. The test measures how the product responds to applied stress, providing data on firmness, work done, and adhesiveness.

Equipment:

- Instrument: CTX Texture Analyzer with a 5 kg load cell
- Probe: 25.4 mm Cylinder Probe (TA-11)
- Fixture: Fixture Base Table (TA-BT-KIT)
- Software: Texture Pro

Settings:

- Test Type: Compression
- Pre-Test Speed: 1.0 mm/s
- Test Speed: 1.5 mm/s
- Post-Test Speed: 1.5 mm/s
- Target Distance: 15 mm
- Trigger Force: 5 g

Procedure:

1. Attach the cylinder probe to the load cell.
2. Secure the fixture base table and align the sample on it.
3. Position the probe a few millimeters above the sample surface.
4. Begin the penetration test, where the probe moves to a 15 mm depth.
5. The test records the force required to penetrate the sample and the force during probe withdrawal.



Observations:

Figure I: Shows the firmness of Fromage Frais tested at room temperature. The maximum force represents sample firmness, while the area under the positive peak measures the work done to deform the sample. The negative peak shows the adhesive force, with the area under it representing adhesiveness.

Figure II: Load vs. Distance graph highlights sample firmness (positive curve) and adhesiveness (negative curve).

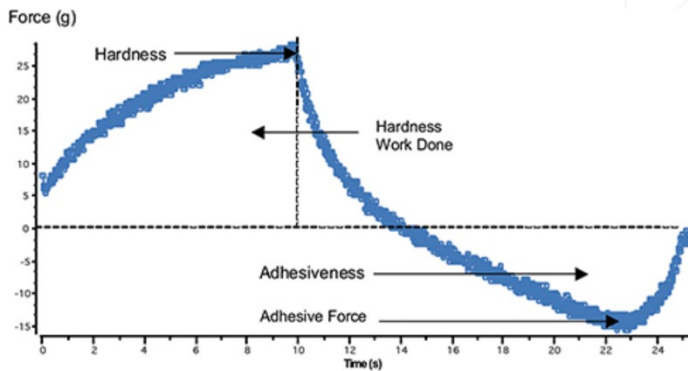


Figure I

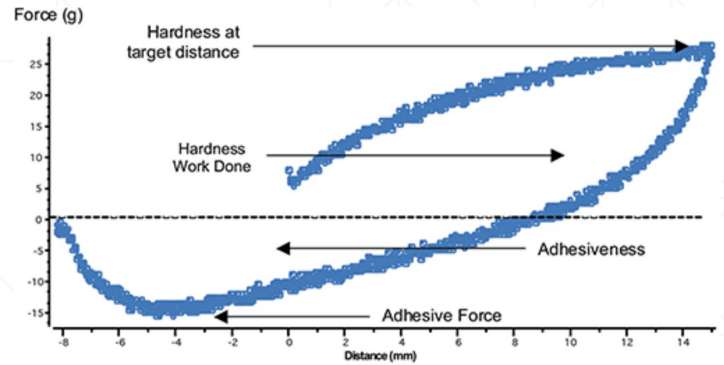


Figure II

Results:

Fromage Frais Texture Results:

- Hardness: 28 g
- Work Done: 2.9 mJ
- Adhesive Force: 16 g
- Adhesiveness: 1.4 mJ

Discussion:

The maximum force indicates sample firmness, where higher values suggest firmer samples. The work done reflects the energy required to compress the sample, while the adhesive force measures how strongly the sample sticks to the probe during retraction. These parameters provide insights into the product's consistency and texture profile.

Conclusion:

Monitoring the firmness and adhesiveness of Fromage Frais ensures consistent product quality. This method allows manufacturers to control the texture, adapting it to consumer preferences and product requirements.