

Pudding Texture Analysis

Texture testing of pudding is essential to ensure desired consistency, firmness, and consumer satisfaction. By measuring viscosity and yield stress, manufacturers can confirm the pudding meets quality standards for smoothness and stability, which are critical for product appeal and consistency across batches.

Background:

- Pudding is tested for texture properties to maintain a consistent consumer experience.
- Two methods, using the HPQA and Vane Rheometry, provide insights into the firmness and flow behavior of different pudding types.



Method 1 (HPQA):

Equipment:

- Instrument: RVDV2T Viscometer
- Spring Torque Range: RV
- Spindle: T-D Spindle
- Accessory: HPQA
- Speed: 5 rpm
- Temperature: Room temperature (approx. 20°C)

Procedure:

1. Attach the T-D spindle and set up the HPQA.
2. Test pudding directly in its container (small cup).
3. Run the test at 5 rpm, recording data from the “plateau” region for consistency.
4. Average data from the plateau region for a QC viscosity value.

Observations:

- Figure 1: Shows viscosity data comparing two pudding samples.
- Pudding 1 has a significantly higher viscosity than Pudding 2, indicating a thicker, firmer texture.

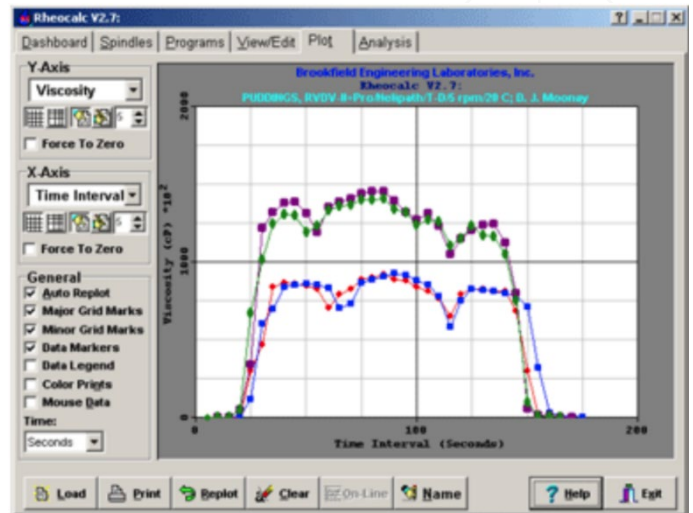


Figure 1: HPQA data comparing two puddings.

Method 2 (Vane Rheometry):

Equipment:

- Instrument: DVNext Rheometer
- Spring Torque Range: HB
- Spindle: V-72 Vane Spindle, immersed to the secondary mark
- Software: RheocalcT
- Speed: 1 rpm
- Temperature: Room temperature (approx. 20°C)



Figure 2

Procedure:

1. Insert the V-72 vane spindle to the secondary immersion mark in the pudding container.
2. Run the yield stress test at 1 rpm.
3. Record yield stress and modulus data directly on the instrument's display or through RheocalcT software.

Observations:

- Figure 2: Shows the setup with the V-72 spindle and HBXR-1 temperature probe.

Results:

- Method 1: Viscosity measurements highlight that Pudding 1 is firmer than Pudding 2, aligning with consumer preferences for texture.
- Method 2: Yield stress and modulus values reveal that Pudding 1 is firmer and more resistant to flow than Puddings 2 and 3, providing insight into the structural integrity of the pudding under stress.

Discussion:

The combined use of the HPQA and Vane Rheometry provides comprehensive texture profiling for puddings, ensuring consistent product quality. Higher viscosity and yield stress in Pudding 1 confirm its firmer, more cohesive texture, which may appeal more to consumers who prefer a thicker pudding.