

Production: CREAM CHEESE

Objective: Comparison of softness of full-fat and low-fat cream cheese

Type of action: Penetration test

Test setting:

Speed	Test mode	Trigger	Target	Hold
1 mm/s	Distance (c)	3 gf	10 mm	0 sec

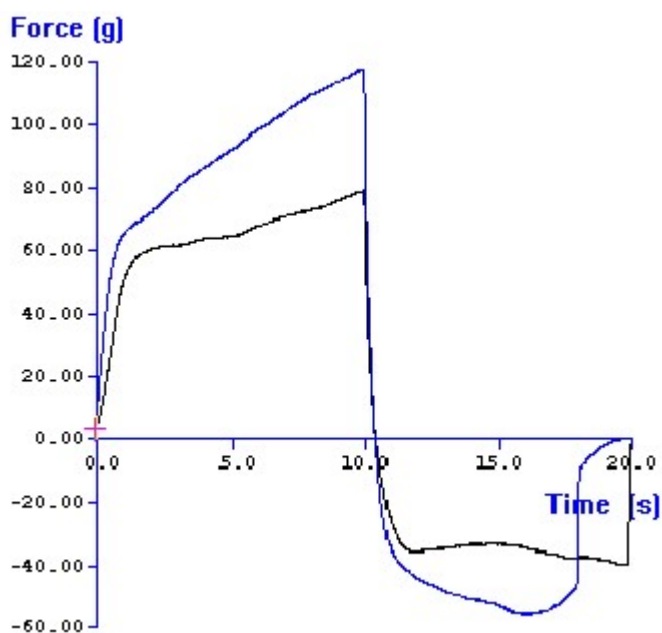
Accessory:

φ5 mm cylinder probe, Platform

Test Set-Up:

Remove the samples from the place of storage just prior to testing. Position the sample container centrally under the probe and commence the penetration test.

Typical plots:



The above curve was produced from 200g of full-fat and low-fat cream cheese, tested at 5.0C.

Observations:

When a 3g surface trigger is attained the probe proceeds to penetrate to a depth of 10mm. At this point (maximum force), the probe returns to its original position at constant speed (1.0 mm/s). The lower this value the softer is the sample. The negative region of the graph, produced on probe return, is an indication of the adhesive property of the cream cheese and/or as a result of a certain weight of sample which has adhered to the probe on return. It appears that Low-Fat cream cheese is considerably softer to penetrate than its full-fat counterpart.

Data Analysis:

☒ Max Force

Results

Sample	Mean Max. +ve Force 'Softness' (+/- S.D.) (g)
Full fat	104.1 +/- 13.1
Low fat	81.8 +/- 5.1

Notes:

- When testing, penetration into the same sample container more than once may be required. If doing this, however, consideration should be taken of the test hole proximities, i.e. penetration must not be carried out too close to neighbouring test holes or too close to the side walls of the container.
- If the sample container is a different size to the ones used here adjustment to the penetration depth may be necessary. When doing this, consideration should be taken regarding the base effect of the container i.e. distance of penetration should not exceed 75% of the depth of the sample. In order to make comparisons between tests, the penetration distance must be kept constant.
- When attempting to optimise test settings it is suggested that the first tests are performed on the hardest samples to anticipate the maximum testing range required and ensure that the force capacity allows testing of all future samples.