

Production: FROMAGE FRAIS

Objective: Comparison of penetration forces and consistency of three brands of fromage frais using a cylinder probe

Type of action: Penetration test

Test mode settings:

Speed	Test mode	Trigger	Target	Hold
1.5 mm/s	Distance (c)	5 gf	15 mm	0 sec

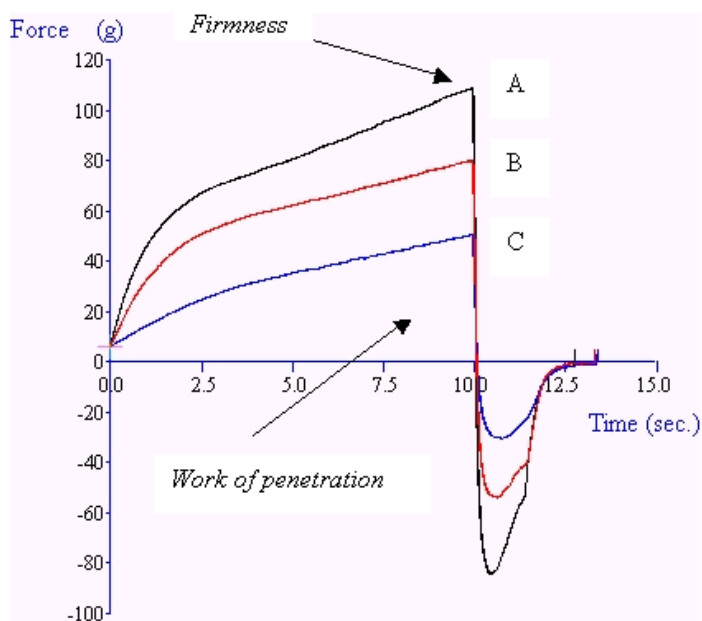
Accessory:

φ25 mm cylinder probe, Platform

Test Set-Up:

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

Typical plots:



The above curves were produced from 50g of 3 different brands of fromage frais, tested at 5C.

Observations:

Once the trigger force of 5g is attained the probe proceeds to penetrate 15mm into the sample. At this point it returns to its original start position. The force is seen to gradually increase as penetration depth increases in each case. Brand A appears to require the highest force to penetrate to the specified depth followed by B & then C, which recorded the lowest penetration value. The overall results of Brand C were wide-ranging showing an inconsistent quality in this product. The negative profile of the plot is as a result of sample adhesion to the probe on return or resistance of the probe to removal from the product due to the consistency of the sample and may be included in the data analysis if so required.

Data Analysis:☒Max Force☒Area (+)**Results**

Sample	Mean Max. Force 'Firmness' (+/- S.D.) (g)	Mean +ve Force Area 'Work of Penetration' (+/- S.D.) (g s)
Brand A	109.7 +/- 2.4	773.9 +/- 10.8
Brand B	80.7 +/- 1.4	590.4 +/- 18.4
Brand C	54.7 +/- 7.9	360.5 +/- 56.8

Notes:

- The test is best performed directly from the sample container. This is because transferring to another vessel may disrupt the set-nature of the product and therefore affecting to obtain validity of results. In turn, when comparing different samples, the container size and volume of product dispensed should be the same.
- If any excess surface water is present upon the sample, this should be carefully drained-off prior to commencing the test.
- During the tests' probe withdrawal stage (i.e. probe returning to start) the sample pot may be lifted-up, due to the condensed nature of the product & small size of container. This can be prevented by physically holding onto the lip edges.
- When attempting to optimize 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.