Application manual No. 122

Production: GNOCCHI

Objective: Firmness comparison of two brands of gnocchi by compression

Type of action: Compression test

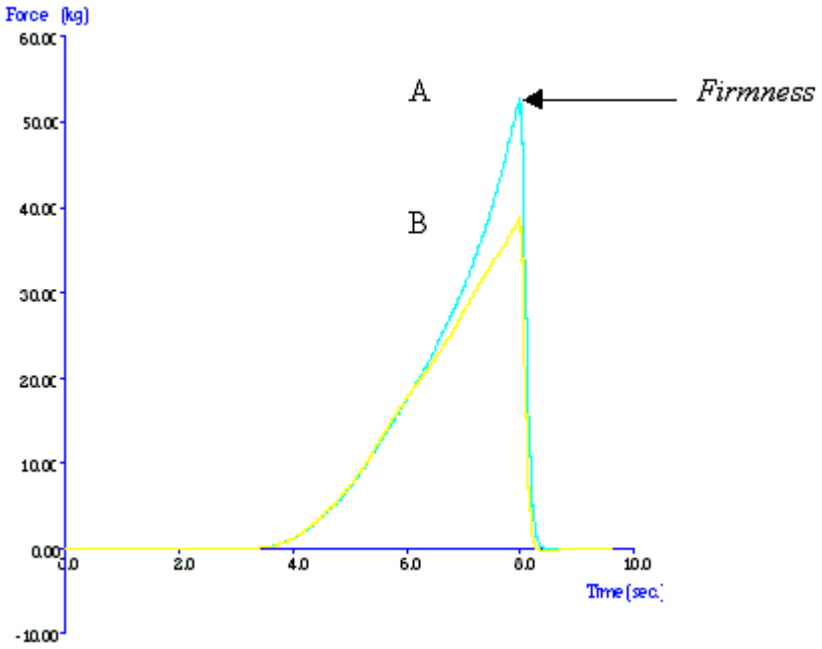
Test mode settings:

Speed	Test mode	Trigger	Target	Hold
2 mm/s	Distance (c)	0 gf	16 mm	0 sec

Accessory:
ϕ100 mm compression plate, Platform

Test Set-Up:
Secure the Heavy Duty Platform to the base of the machine. Calibrate the probe to recognize the blank plate of the platform as zero. To do this, click on 'Calibrate Height'. Input a return distance e.g. 20mm is recommended. Position three pieces of the sample on the blank plate of the platform centrally under the probe. Commence the compression test.

Typical plots:



The above curves were produced from testing two different brands of uncooked gnocchi (three pieces per test).

Observations:
Once the test has commenced, the probe proceeds to move down onto the sample to the distance 10mm from the starting point. A rapid rise in force is observed as the sample deforms under the applied force. Once the specified compression distance is reached (i.e. 4mm above the blank plate of the Heavy Duty Platform) the probe withdraws from the sample and returns to its start position. The maximum peak force relates to the firmness of the sample. The results of this test show brand A to be firmer that brand B due a greater maximum peak force.

Data Analysis:
☒Max Force

Results

Sample	Mean Max. Force 'Firmness' (+/- S.D.) (kg)
A	48.2 +/- 2.7
B	42.4 +/- 2.5

Notes:

- Firmness itself varies from gnocchi to gnocchi, so large variations in firmness may sometimes be found among individual gnocchi within the same batch. For this reason three (or more) gnocchi are tested at one time.
- When using a button trigger, it is critical that the start distance of each test is constant for comparison purposes. Hence the need to calibrate the probe before testing.
- Carefully controlled sample preparation is fundamental in maintaining a low variation in the results and should always be reported for comparison purposes.
- 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.