Production: NOODLES

Objective: Comparison of hardness and adhesiveness of noodles using a Cylinder Probe

Type of action: Compression test

Test mode settings:

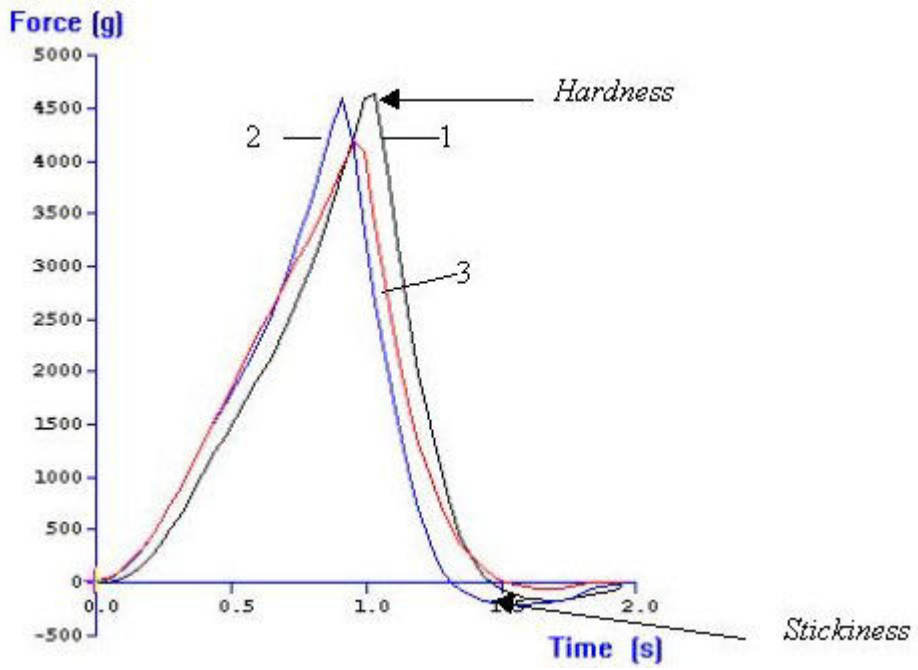
Speed	Test mode	Trigger	Target	Hold
2 mm/s	Strain (c)	10 gf	75%	0 sec

Accessory:
ϕ 36 mm cylinder probe, Platform

Test Set-Up:
Before carrying out a compression test in strain one must calibrate the probe to acknowledge the base of the machine as zero. (see below for instructions as to how to do this).
Test two noodle strands close together at a time, ensuring that the strand test region is positioned centrally under the probe.

Probe Calibration:
Lower the probe, so that it is close to the bed surface. Click on **CALIBRATE HEIGHT** and specify the distance that you want the probe to return to after sample compression for each test - e.g. **15mm** is suggested.

Typical plots:



The above curves were produced from 3 types of dry packaged noodles. Each batch was cooked for 10 minutes in boiling water, drained and rinsed and then left to stand for 15 minutes prior to testing.

Observations:
Once the trigger force of 10g is attained the graph proceeds to plot the effect on the noodle under compression to 75% strain. The maximum force correlates to the hardness of the sample, the greater this value the harder is the sample. In terms of maximum force values ('Hardness') there appear to be no distinct differences between noodle types. It is quite clear however, that Type 3 noodles are considerably less sticky than Types 1 and 2 (which is the most sticky) which is seen from the negative areas of the plots.

Data Analysis:
☒Max Force

Results

Noodle Type	Mean Maximum Force 'Hardness' (+/- S.D.) (g)	Mean Negative Area 'Adhesiveness' (+/- S.D.) (g·s)
1	4473.1 +/- 241.9	6.6 +/- 1.2
2	4372.8 +/- 285.4	8.5 +/- 1.2
3	4344.1 +/- 236.2	4.3 +/- 0.8

Notes:

- When laying the samples across the bed surface ensure that they are completely flat. A slightly raised sample will cause an earlier trigger compared to that of a flat sample and hence will cause differences in the compression distance at 75% strain. The samples should also be positioned the same distance apart each time.
- It is important for comparison purposes to keep the sample preparation, (i.e. duration of cooking, drainage time before testing etc.) the same for each batch as this could introduce error into the test.
- 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.