Production: TORTILLA CHIPS

Objective: Fracturability of Tortilla Chips

Type of action: Penetration test

Test mode settings:

Speed	Test mode	Trigger	Target	Hold
1 mm/s	Distance (c)	5 gf	3 mm	0 sec

Accessory:
Potato chips crispness rig, Platform

Sample Preparation:
Select samples with most uniformity, i.e. in terms of size and shape and remove from packets just prior to testing.

Test Set-Up:
Position the Heavy Duty Platform so that when lowered, the ball probe passes centrally through the crisp support rig.
Place the sample centrally onto the crisp fracture rig and commence the test.

Typical plots:
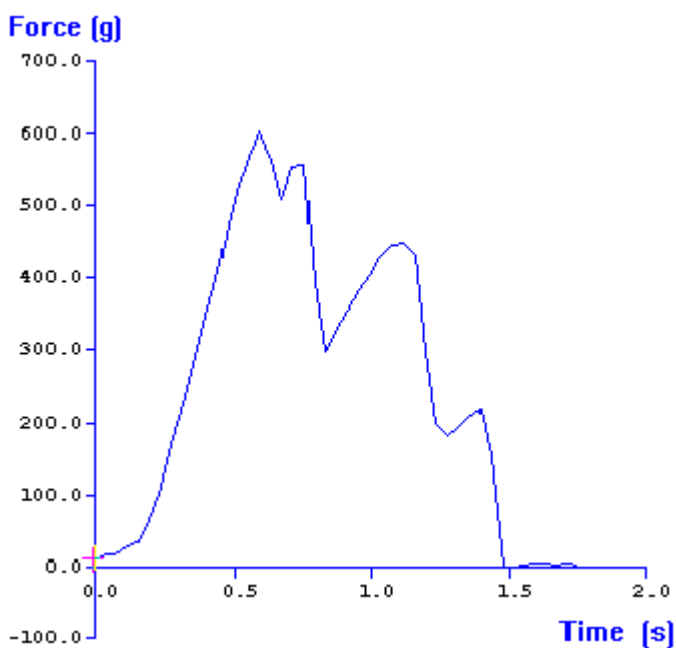
The above curve was produced from testing a tortilla chip just after removal from the packet.

Observations:

The initial fracture of the sample is indicated by the first peak force. From initial fracture there then appears in some cases to follow a series of more minor fractures. Despite the lack of uniformity in fracture profiles due to the irregular shape of the samples there still appears to be repeatability in the maximum force values. The greater this value the harder the sample is to fracture.

Data Analysis:

Results

Sample	Mean Maximum Force 'Hardness' (+/- S.D.) (kg)
A	587.7 +/- 49.7

Notes:

● The distance at break is an indication of fracturability, and so may also be of interest. Mark Value Distance can be added to the end of the macro above. The shorter the distance to fracture, the more easily the product is fractured.

● The Break Detect facility can be activated so as to minimize test time. If the main fracture event occurs at a distance less than that pre-set in the TA settings, it serves to detect this fracture and return the probe to the start position, regardless of the pre-set distance.

● 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.