

Texture Measurement of Cooked Noodles

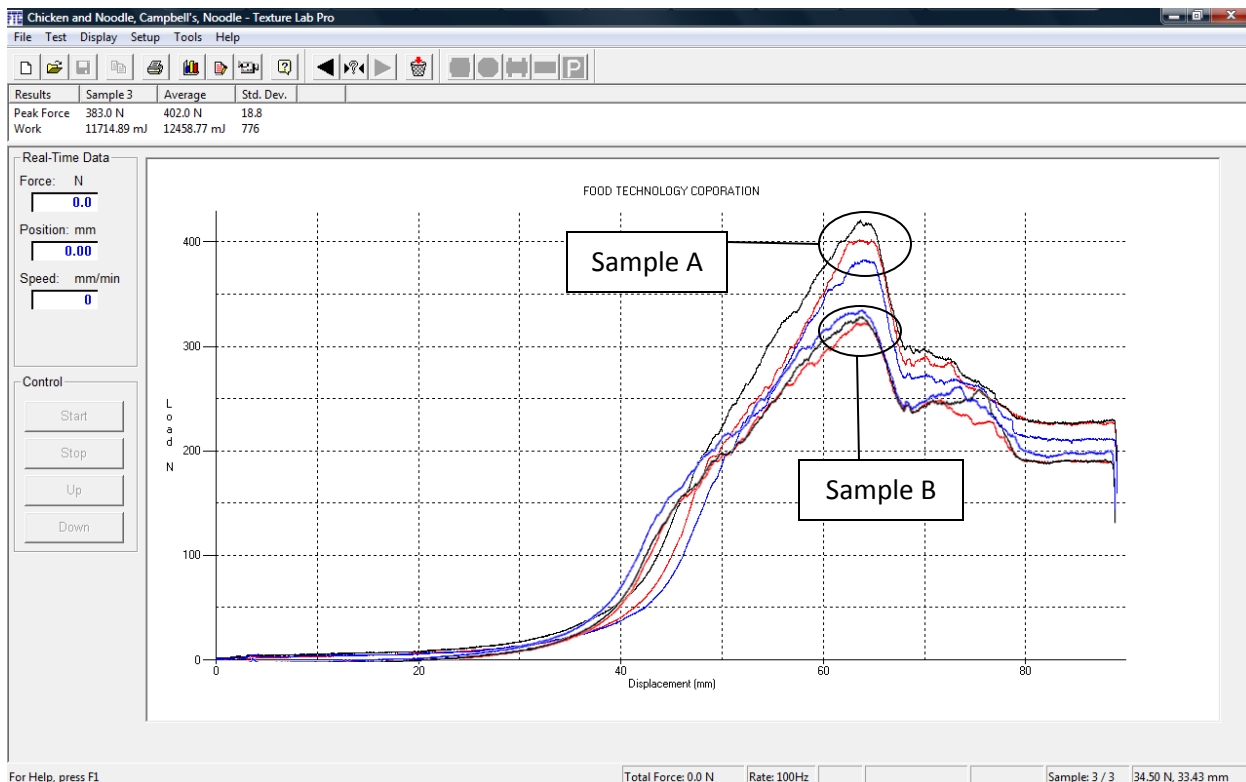
Introduction

The texture of cooked noodles is a very important quality characteristic for both processors and consumers. For the producer, texture is an indication of the correct processing parameters being applied to the raw product. Over time the incoming raw product can change dramatically and a process recipe that is correct one day can produce undesirable results on another day. Over processing will produce a product that is too soft and often breaks into little pieces, while under processing will cause the noodles to be too hard. Both of these can be undesirable traits for consumers. The ability to consistently and objectively measure texture and relate it to sensorial characteristics is an invaluable capability in controlling the process.

Test Parameters

Noodles marked Sample “A” and “B” were submitted to Food Technology Corporation to determine the textural differences between the two products. Cooked noodle samples from both products were prepared by first pouring the product in a sieve, rinsing it, and then allowing it to equilibrate to room temperature (~73 F.). After this the noodles were separated out. For each sample the test cell was filled based on volume, taking care to not compact the product. Care was taken to perform the test immediately after separation so that there were no changes in the texture in the noodles due to drying out. The tests were performed using the FTC Model TMS-Pro Texture System, equipped with an FX-2500 Newton load cell and the Model CS-1 Standard Shear Compression (Kramer) Cell. The testing speed was set to 178 millimeters per minute (7 in/min.) and the travel distance to a displacement of 89mm (3.5 in.).

Sample Graph of Cooked Noodle Shear Cell Testing



Sample Results for Cooked Noodles

	Sample A	Sample B
	Peak Force	Peak Force
Units	N	N
Sample 1	402	330
Sample 2	421	347
Sample 3	379	336
Sample 4	383	354
Sample 5	378	343
Average	393	342
Std. Dev.	19 (4.8%)	9 (2.6%)

Conclusions

The test data show that not only was there a difference in the two products, but it was a repeatable one. The two samples each had a standard deviation that was within 10% of the average, indicating that this test methodology is a valid and repeatable texture evaluation for this type of product.

Peak force is often viewed as one of the more important characteristics of food texture measurement. In this instance, it is the indicator of the firmness of the noodles, which in turn is a sign of the processing that noodles underwent. While being able to objectively measure these characteristics is important, the capability to repeat the results is equally important. This is crucial in controlling inherent variability that comes with measuring a biological product like food.

While these tests were all performed with the TMS-Pro Texture System, similar results could be produced by using any the FTC Texture Systems as long as the same test cell and test speed are used.