

Texture Evaluation of Gel

The Application

A processor of different types of simulated blood clot “gels” wanted a quantifiable, consistent way to measure and ultimately better control the texture of their different products in regards to firmness. Current methods involved simple visual inspections and very subjective human sensory evaluation.

Problem

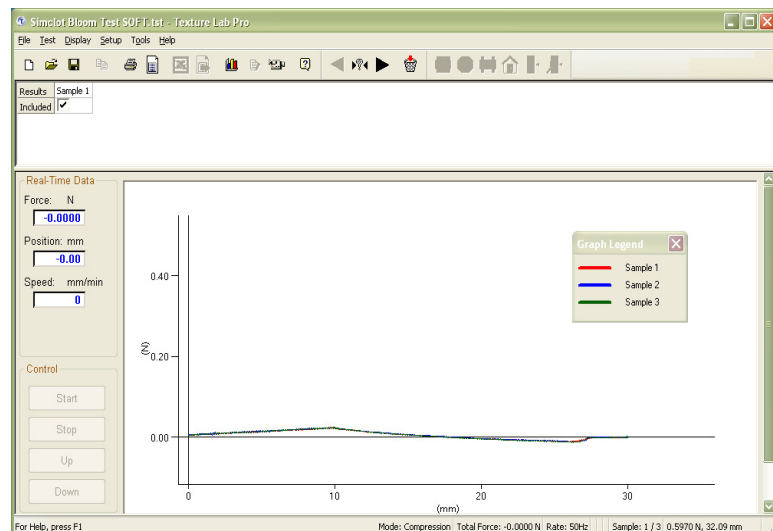
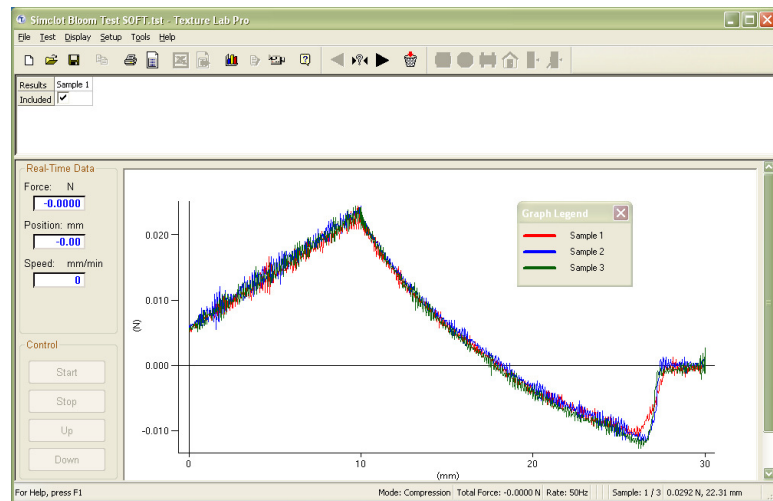
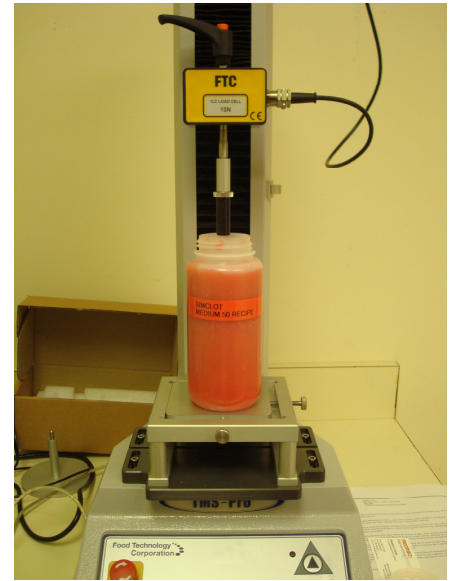
The processor had two different types of simulated blood clot gels made from different formulations with known textural difference detected through sensory analysis. However, they wanted to quantify the data and visualize the difference in the in texture. Also, they wanted to be able to measure textural properties within the same batches/formulations to see if they were consistent. They wanted to know if a “Bloom” penetration test would give them this data.

Solution

Testing was done using a TMS-Pro with a 12.7mm diameter bloom cylinder probe. A 10N load cell was used for the gel thought to be stiffer, and a 2N load cell was used for the soft gel. The probe first came down, sensed the top of the product, ran 10mm into the product at 100mm/min, and then back up to zero. The top graph to the right illustrates the curves generated from the stiffer gel test. The negative curve indicates the stiffer gel was a very sticky product. The bottom graph shows the small curve generated from the soft gel. The gel was so soft and more liquid than gel-like, that it produced a significantly different curve than the stiff gel. This test gives ideal results to the processor that a Bloom penetration test would be ideal to show difference in texture of the stiff versus the soft gel.

Benefits

- Allows for more concise control of textural attributes of the product within formulations
- Allows processor to see what formulations meet QC standards and which do not
- Quick and easy test that gives repeatable and objective results



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