Texture Evaluation of Cheese

The Application

A processor of different types of cheeses 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.
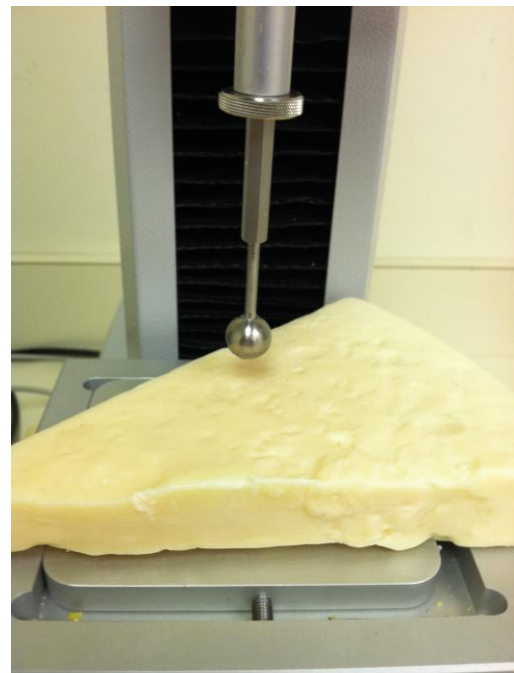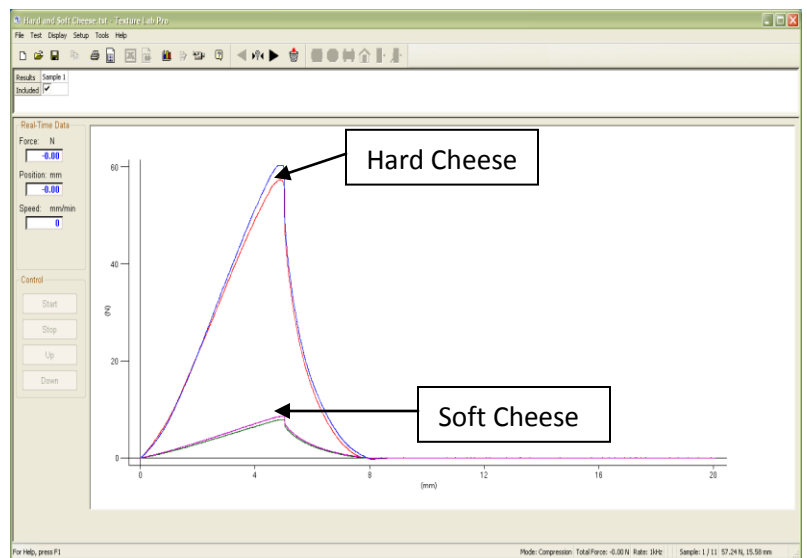
Problem

The processor had different types of cheeses from different formulations with known textural difference detected through sensory analysis. However, they wanted to quantify the data and visualize the difference in the firmness of the cheeses. Also, they wanted to be able to measure textural properties within the same batches/formulations. A consistent and repeatable method of measuring and therefore controlling the texture is essential.

Hard Cheese

Soft Cheese

Solution

All testing was done using a TMS-Pro with a .5 inch steel ball probe. The probe first came down, sensed the top of the product, ran 5mm into the product at 200mm/min, and then back home. The graph to the right illustrates the firmness comparison between the hard cheese and the soft cheese. The taller curve represents the harder cheese with higher forces compared to the smaller curve of the soft cheese. This test gives ideal results to the processor so that he can see how the cheeses compare to one another but also use this as a baseline for measuring within the respective batches.

Benefits

- Allows for more concise control of textural attributes of the product
- Reduces the possibility of downtime due to a product that does not meet quality standards
- Quick and easy test that gives repeatable and objective results