Production: CINNAMON ROLLS, REGULAR OR REDUCED FAT

Objective: Measure firmness of cinnamon rolls (without icing) by compression with a probe

Type of action: Penetration test

Test setting:

Speed	Test mode	Trigger	Target	Hold
1.7 mm/s	Distance (c)	20 gf	6.2 mm	0 sec

Accessory:

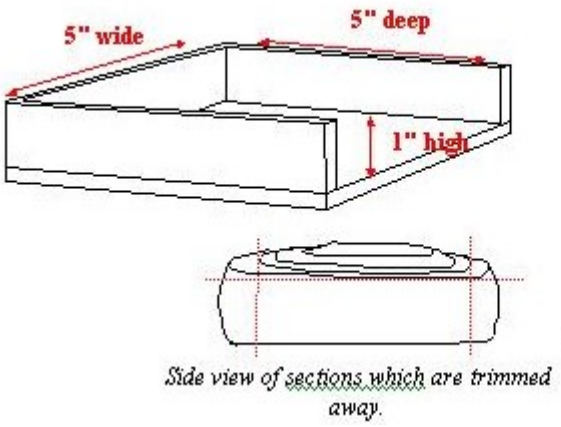
ϕ 25 mm cylinder probe. Acrylic, Platform

Sample Preparation:

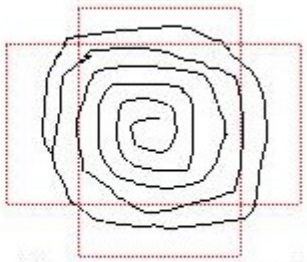
Cinnamon rolls were double wrapped in polyethylene bags and held at room temperature until further testing. Rolls were tested on days 3, 7, 10 and 14 after baking. On each testing date two pans (9 rolls per pan) of each variable were evaluated. Individual rolls were separated, all four sides were trimmed off and the roll was placed in a plastic box with 1" high walls. The top of each roll is trimmed to the height of the walls. The 1" thick rolls were compressed.

Test Set-Up:

Each cake sample was positioned centrally under the probe and the test commenced. Analysis was conducted only after all of the tests were completed and archived for each cake set.



Side view of sections which are trimmed away.



Top down view of sections of cinnamon roll which are trimmed away.

Data Analysis:

☒Max Force

Results

The peak force was recorded. The average and standard deviation for the 18 test repetitions are calculated.

Notes:

- This method is from a collection of procedures for testing the texture of common bakery products with the Texture Analyzer. These procedures have been developed by and are used at the American Institute of Baking's Experimental Bakery Lab in Manhattan, Kansas.
- It is the philosophy of the researchers at the AIB to have extremely flexible protocols for texture testing. Bakery products come in every imaginable type and shape, so meaningful textural comparisons must account for the different product geometry's. These test procedures typically manage differences in geometry by reducing the products' size to a common denominator.
- Generally, the objective of most of these tests is to measure the firmness and shelf life of a baked product. Since the bulk of these protocols address sample handling, they can and should be modified slightly if the test objective is different (eg springiness, cohesiveness, resilience, etc).
- These protocols are simply starting places for developing test methods which are suitable for your own products. A researcher should be comfortable modifying the sample handling protocols, test speeds and distances to accommodate any specific purposes.