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Texture analyzer used for investigation flow properties of fresh and frozen dough

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This research aimed to investigate flow properties of fresh and frozen dough by Texture analyzer. Texture analysers are commonly used to investigate the mechanical response directly linked to the surface or the internal structure of materials. In the food industry, these instruments are used in product development and in quality control. Freezing dough after its preparation and storing it under frozen conditions until it is baked and consumed, is essential for commercial competitiveness, quality, and safety of baked products produced for retail, food service, and in-store bakeries. During frozen storage, gradual loss of dough strength has been attributed to decrease gluten cross-linking caused by ice recrystallization and redistribution of the water provoked by a modification in the water binding capacity of dough constituents. However, the quality of the resulting food product will not be the same as that produced with fresh dough. Axisymmetric squeeze flow with constant contact area between the dough sample and plates was used to measured force, distance, and time. From these parameters velocity, biaxial strain, stress, extensional viscosity was calculated. The experiments were done at constant strain rate of 1%, 4%, 7%, and 10%. Results obtained shown viscoelastic properties of fresh and frozen dough.

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