

Textural Characteristics of Puff Pastry Margarines

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The experiment involved four puff pastry margarines: M1 with low trans fatty acid (TFA) content (<1%), M2 with relatively low (<5%), M3 and M4 with high TFA content (cca. 25%). Textural properties of puff pastry margarines was determined by measuring firmness, work of penetration and adhesiveness penetration tests at 10, 20, 25, and 30°C.

The maximum firmness of the examined margarine samples is detected on the storage temperature (at 10 °C).

By increasing the temperature to 20°C the firmness of margarine M4 is two times lower, firmness of margarine samples M1 and M3 decreases for two times, and for sample M2 even seven times decreases.

The average firmness of margarine samples M1, M2, M3, and M4 at 20, 25, and 30°C is significantly different ($p < 0.05$).

The maximum work of penetration (for about 1400gs) at 25 °C has sample M4, what is the consequence of maximum firmness and solid fat content. Margarine sample M2 at 25 and 30 °C has the lowest value for work of penetration (670 and 180gs, respectively). Adhesiveness of margarines M2 and M3 during the heating does not change, which indicates on good stability and spreadability of these systems.