

Pressure/thermal combinations on color, texture and water holding capacity of meat batters

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The aim of this experiment was investigate the effects of pressure/thermal treatment combinations, i.e. heat treatment before pressure treatment (H-P), pressure treatment before heat treatment (P-H) on meat batters. Simply heat treated and non-pressurized (H) meat batter was used as control. Pressure treatments were carried out at 450 and 600 MPa at room temperature for 5 mins holding-time. Heat treatments were performed to +72°C core temperature. The color, texture and water holding capacity (WHC) was determined. Statistical analysis was performed by analysis of variance (ANOVA) with sequence of pressure/thermal treatments and pressure levels as factors. ($p < 0.05$). Independently the sequence of processes the pressure treatment at 600 MPa significantly increased the lighness (L^*) and decreased the redness (a^*) of meat batters. Meat batters prepared P-H combination significantly increased the hardness compared to H-P and H samples. The H-P and P-H combinations improved the cohesiveness of meat batters. Effect of pressure treatment was statistically verifiable on cohesiviness. The H-P treatment combination improved the water holding property of meat batters compared to P-H and H samples. Based on statistical result the difference was not proved significant.

Industrial relevance: The heat treatment and pressure treatment are important parameters which can be combined in several ways in meat product processing. The sequence of pressure and thermal treatment might has a significant effect on the quality of meat products. These informations help the meat industry to adopt suitable pressure/thermal treatment combination to produce meat products.