

Effect of sonication on physico-chemical properties of chicken meat

Summary

The effect of low frequency (45 kHz) and medium intensity ($2 \text{ W}\cdot\text{cm}^{-2}$) ultrasound treatment on some properties of chicken meat (*m. pectoralis*) was investigated in order to verify if and to what extent modifications in pH, water holding capacity (WHC), color (CIE $L^*a^*b^*$) and shear force and energy can occur. The meat pH decreased and WHC increased after sonication. Differences between treated and untreated samples were detected only for brightness L^* of meat. No significant changes were observed in color expressed in a^* and b^* values. The Warner-Bratzler shear test showed decreased values of mechanical strength of chicken meat after sonication. The maximum shear force and its work of the sonicated meat was smaller in comparison with untreated meat. Changes in chicken meat properties after sonication resulted from modification its cell and tissue followed physical influence of ultrasound waves.