EVALUATION OF HIGH PRESSURE PROCESSING FOR THE PASTEURIZATION OR STERILIZATION OF CUBED BEEF MEAT WITH BROTH

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High pressure technology could be used for the manufacturing of pasteurized or sterilized meat products with improved quality. The objective was to compare the effects of selected combinations of pressure heat treatment [600MPa-110°C-10min(PATP)&600MPa-70°C-10min] and conventional retort treatment (121°C-10min) on physicochemical and textural properties of cubed beef with broth. Beef bottom round cuts were cut (2.5cm cubes) and cooked in water bath (90±3°C-10min). Twenty-six cooked cubes (282.3±15.3g) with 15%(w/w) broth [11.3%(w/w) powder broth; NaCl 1.5%(w/w)] were vacuum packaged in EVOH bags and submitted to treatments described above. Samples were evaluated at day 2 (D2) and 7 (D7) of storage. Samples treated using both combinations of pressure-heat treatments yielded higher meat/broth values than retorted ones. Meat/broth values increased during storage (D7>D2) for all the evaluated treatments. Broth pH diminished during storage, without differences among treatments. Retorted and PATP meat cubes presented higher pH values, without differences between storage day. L* was higher for broth and meat cubes treated by PATP than retorted or pressure treated samples at 70°C. Broth from PATP samples presented lower a* values than samples pressure-treated at 70°C. Pressure treated meat cubes had higher a* values than retorted ones. Samples pressure-treated at 70°C presented higher Warner-Bratzler shear force values than PATP and retorted, and these values diminished during storage. PATP samples presented the lowest hardness, chewiness and cohesiveness values. Springiness values were similar for PATP and retorted samples, significantly lower than pressure treated at 70°C. PATS and retort samples were tenderer and less reddish than pressure treated at 70°C ones.