

Beef Products Incorporated (BPI) Lean finely textured beef and ground beef quality

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Objective –

To determine the effects of incorporating BPI's lean, finely textured beef (LFTB) on the fresh and cooked quality of ground beef patties.

Methods –

Beef knuckles (97% lean) were coarse ground and mixed with 50:50 trim and LFTB to prepare 25-lb batches of ground beef using combinations of either 82 or 93% lean and 0, 10, or 20% LFTB in 6 treatment combinations (5 batches per treatment). Ground beef was formed into 1/3-lb patties using an automatic patty-making machine, and patties were either wrapped in foam trays with PVC overwrap for retail display or frozen and vacuum packaged for cooking at a later date. Patties were placed in retail display for 4 days and instrumental color was measured each day. Furthermore, patties were removed from display after 0, 1, 2, and 4 days to measure oxidation (TBARS). Frozen patties were thawed and cooked to 160°F to measure cooking loss, Lee-Kramer shear force (a measure of texture), internal cooked color, and cooked oxidation.

Results –

Increased LFTB percentage also resulted in patties that were lighter, redder, and less yellow in color during display. Fatter patties were also lighter in color than leaner patties. During the display time, all patties became more oxidized, but the values for oxidation were lower in patties with increased LFTB percentage, indicating that the LFTB decreased the rancidity of patties in retail display.

In cooked patties, those with 20% LFTB had the least cooking loss. Increased LFTB percentage resulted in patties that required less force to shear. Similarly, fatter patties were easier to shear than leaner patties. Patties containing LFTB were similar to control patties (no LFTB) in internal, cooked color, indicating that they would be perceived to have the same degree of doneness when cooked to the same end-point temperature. Lastly, including LFTB in ground beef did not affect the rancidity of the cooked patties.

Conclusions –

Adding LFTB to ground beef patties at 10 and 20% only produced positive changes in fresh and cooked ground beef quality measures. The results of this study indicate that the inclusion of lean finely textured beef up to 20% could lend many positive quality characteristics to both fresh and cooked ground beef patties

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