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## Postmortem Aging Does Not Improve Palatability of Texas-Style Barbecue Briskets

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## Objectives

The demand for beef brisket among barbecue enthusiasts throughout Texas has increased, and pitmasters have questioned if aging briskets optimizes tenderness. The objective of this study was to evaluate the effect of postmortem aging on the palatability of Texas-style smoked briskets.

## Materials and Methods

Paired briskets ( $n = 24$ ) were collected from USDA Choice carcasses, stored under refrigeration ( $2^{\circ}\text{C}$  to  $4^{\circ}\text{C}$ ) for 7 d, 21 d, or 35 d, then frozen ( $-40^{\circ}\text{C}$ ) and stored ( $-10^{\circ}\text{C}$ ) until subsequent palatability evaluations were performed. Three postmortem aging period comparisons were made: 7 d vs. 21 d (Set 1), 21 d vs. 35 d (Set 2), and 7 d vs. 35 d (Set 3). Briskets were prepared Texas-style by seasoning with kosher salt and coarse ground pepper before smoking with post oak wood at a temperature of  $98.8^{\circ}\text{C}$ . Briskets were cooked over a long period ( $\sim 11$  h) using a commercial barbecue pit. After cooking, flat (*M. pectoralis profundus*) and point (*Mm. pectorales superficiales*) portions were separated, sliced (1.27-cm) for serving to consumer panelists ( $n = 83$ ;  $n = 6$  samples per consumer) for assessment of tenderness, juiciness, flavor, and overall liking. An additional slice (2.54-cm) was cut from the flat and point portions for Warner-Bratzler shear (WBS) force determination. Data were analyzed using the PROC GLM function of SAS (v9.3; SAS Inst. Inc., Cary, NC) with  $\alpha < 0.05$ . Three analyses were conducted that compared 7 d vs. 21 d aging, 21 d vs. 35 d aging, and 7 d vs. 35 d aging. Main effects included in the model were aging time, portion (flat vs. point) and their interaction. Least squares means were calculated and separated using the PDIFF option ( $P < 0.05$ ) where appropriate.

## Results

There were no ( $P > 0.05$ ) interactions between aging treatment and portion for consumer sensory or WBS force measurements for any of the 3 aging period comparisons. Consumer panelists did not ( $P > 0.05$ ) detect differences in overall liking, flavor liking, tenderness liking, or juiciness liking between briskets of differing post-mortem aging treatments. However, consumer panelists were able to detect palatability differences between brisket point and flat portions regardless of the postmortem aging treatment. When comparing point and flat portions from Set 1, point portions were preferred over flat portions for juiciness liking ( $P = 0.0004$ ), while flat portions were preferred over point portions for flavor liking ( $P = 0.0348$ ). When comparing the point and flat portions from Set 2, panelists assigned higher ratings to point portions for juiciness liking ( $P < 0.0001$ ), but lower ratings for overall liking ( $P = 0.0499$ ). When comparing brisket portions from Set 3, panelists rated the point portion as juicier ( $P = 0.0112$ ), yet assigned higher overall liking ratings to the flat portion ( $P = 0.0296$ ). Across all 3 age-day comparisons, WBS force measurements did not differ ( $P > 0.05$ ) between aging treatments. However, WBS force measurements were lower ( $P < 0.0001$ ) for point portions compared to flat portions no matter the aging treatment.

## Conclusion

Although differences in palatability between point and flat portion were observed, postmortem aging did not improve consumer acceptance of beef brisket. Overall, we concluded that preparing USDA Choice Texas-style beef briskets resulted in products with high consumer palatability ratings and low WBS values, which helps demonstrate why barbecued briskets are so popular.