A COMPARISON OF WET AND DRY AGING ON THE SENSORY PROPERTIES OF BONELESS PORK LOINS

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I. OBJECTIVES

Wet aging (WA) is the predominant form of postmortem aging for pork; however, there is growing consumer interest in dry-aged (DA) meat. The goal of this study was to compare differences between WA and DA boneless pork loins using consumer and trained panelist sensory analysis.

II. MATERIALS AND METHODS

Boneless pork loins, Institutional Meat Purchase Specifications 413 ($n = 45$), were cut across the medial plane and randomly assigned to either WA or DA treatments. Both treatments consisted of 15 loin sections aged for 10, 20, and 30 d, respectively. WA samples were stored at 3°C in vacuum-sealed packages. DA samples were stored (unpackaged) within an environmental chamber (Stagionello Maturmeat, Arredo Inox Srl., Crotone, Italy), at 3°C and 75% relative humidity. At the end of each aging period, loin sections were weighed and trimmed prior to being cut into 12-mm-thick sensory chops. Sensory samples were stored at −25°C for future sensory testing. Samples for consumer and trained sensory panels were prepared by thawing, for 24 h at 3°C, prior to being cooked to an internal temperature of 66°C, using a Taylor clamshell grill (Model #L820-23). Cooked chops were allowed to rest 1 min before being cut into $2.5 \times 2.5 \times 1.2$ cm^2 samples. Samples were evaluated using consumer acceptance tests ($n = 126$) and descriptive analysis with highly trained panelists ($n = 6$) following Spectrum® methods. Consumers were asked overall liking, flavor, freshness, texture, moisture, meaty flavor liking, and purchase intent of samples. Trained panelists evaluated the samples for aromatics, basic tastes, and texture. Pork loins were randomly assigned to a 2×3 factorial; fixed effects were aging method (DA and WA) and aging length (10, 20, and 30 d). Consumer and descriptive analysis data were analyzed using two-way analysis of variance, Kruskal-Wallis nonparametric, and chi-squared test of XL STAT (Addinsoft, New York, NY).

III. RESULTS

Physical properties of pork loins were greatly affected due to dehydration and trimming loss in loins. Samples aged 10, 20, and 30 d lost 10.12%, 21.92%, and 31.6% of their initial raw weight, respectively. Overall eating experience was not improved due to either aging method. When evaluating the consumer acceptance test, WA and DA were not significant ($P > 0.05$) factors for overall liking, flavor, freshness, texture, moisture, meaty flavor liking, and purchase intent of pork. DA panel results did not reveal any meaningful differences in pork aroma, flavor, or texture across aging methods or duration.

IV. CONCLUSION

WA and DA are both equally liked and accepted by pork consumers and trained panelists. Dry aging boneless pork loins does not appear to increase consumer acceptability.

Keywords: dry aging, pork, sensory analysis