Characterization of Argentinian Pork Cutability

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Objectives

The Argentinian pork industry is experiencing a phase of rapid growth. Over the last 10 yr the number of pigs slaughtered has increased from 2.1 to 5.1 million annually and per capita consumption of pork has increased from 5.6 to 10.6 kg per year. However, no peer reviewed literature exists characterizing cutability of pork produced in Argentina. Thus, the objectives of this study were to characterize commercial cutting techniques and to quantify mean and variability differences of carcass cutability from pigs of 4 Argentinian pork suppliers.

Materials and Methods

Pigs ($N = 100$) were slaughtered at a commercial pork processing facility. Four suppliers with differing production programs were used in the study ($n = 25$ pigs/supplier). Supplier A was vertically integrated and B, C, and D were not. After slaughter, carcasses were chilled using an air-chilled method ambient temperature of 4°C. Fat depth was measured on the left side of the carcass at the 3/fourth and last ribs. Left carcass sides were fabricated into primals: jamón (ham), carre (loin), pecho con manta (belly), bondiola (shoulder near the vertebrae), and paleta (shoulder, similar to the picnic), and weights were recorded. Primals were further fabricated into subprimal pieces: jamón into cuadril, peceto, bola de lomo, cuadrada, and nalga; pecho con manta into matambre and pecho; carre into bonless carre and solomillo; the bonless bondiola, and the boneless paleta. Carcass cutting yield was calculated as: [(Σweights of subprimal pieces × 2) / HCW] × 100. Data were analyzed in the MIXED procedure of SAS v. 9.4 (SAS Inst. Inc., Cary, NC). A multi-variance model with supplier as the fixed effect was used. Variability differences between suppliers were determined on raw data using the Levene's test in GLM.

Results

Average of the population: The HCW was 89.30 kg, the jamón primal was 12.02 kg (27.00% of HCW [head included]), the carre was 4.76 kg (10.70% of HCW), the pecho con manta was 7.74 kg (17.21% of HCW), the bondiola was 3.00 (6.75% of HCW), and the paleta was 7.03 kg (15.79% of HCW). Total weight of subprimal pieces of a carcass was 34.09 kg and carcass cutting yield was 38.38% of HCW. *Within supplier:* Hot carcass weight was lighter in supplier D compared to all other suppliers ($P < 0.01$). However, supplier D numerically had the least variability and supplier B had the greatest variability. Fat depth at the third/fourth rib was greater in suppliers A and B than C and D ($P < 0.01$), and there was not difference in variability due to supplier ($P = 0.12$). Fat depth at the last rib was greater in supplier B than D ($P < 0.01$), with no difference in variability among suppliers ($P = 0.61$). Carcass cutability was the greatest in carcasses from suppliers A, C, and D, and cutability was the lowest from supplier B. There was no difference in variability of carcass cutability between suppliers.

Conclusion

Supplier had an effect on the means of HCW, fat depth, and carcass cutability. However, there were minimal differences in variability of carcass cutability traits due to supplier. The understanding of commercial cutting techniques and mean differences among suppliers will allow the Argentinean pork industry to work toward targeting mean cutability traits to produce a more consistent product.