

51 The characterization of the growth of Salmonella spp in hot-boned, pre-rigor pork sausage. G. A Anderson*, R. B. Cox, M. C. Newman, and G. Rentfrow, *University of Kentucky, Lexington, KY, USA.*

The objectives of this study were to characterize the growth of Salmonella spp. during cooling of hot-boned, pre-rigor pork sausage (HBP) and to characterize the temperature decline of HBP over the first 24 h of postmortem storage. One crossbred gilt (111.4 kg) was harvested at the University of Kentucky Meats Laboratory, and the lean and fat were removed immediately post harvest (approximately 1 h), ground, and pork sausage seasoning was hand mixed then ground two additional times. HBP (14 kg) was inoculated with a mixed Salmonella cocktail (*S. choleraesuis* sp. *choleraesuis* ATCC 13312; *S. Cholerae*, subtype *choleraesuis*, serotype typhimurium ATCC 13311; *S. cholerae*, subtype *cholerae* ATCC 13076; and *S. paratyphi*) at 1 h postmortem, then subdivided into three 2.28 kg samples, placed in plastic bags, and stored in refrigeration (4°C). Samples for Salmonella analysis (25g) were taken from each bags at 0 h, 2.5 h (time of median temperature decline), 7 h (time at which samples reached ambient temperature), and 24 h post inoculation. Samples were stomached in 225 mL 0.1% peptone water for 1 min and plated on XLT-4 agar at dilution rates of 10² to 10⁵. Plates were stored at 35°C for 24 h, and colony forming units (CFU) were evaluated. The remaining HBP (15.9 kg; not inoculated) was placed in a plastic container (56.5 × 34.5 × 20.0 cm), stored at 4°C, and temperature was monitored hourly for 24 h to determine the temperature decline of HBP in a large storage container. Temperature was monitored by thermocouples placed in the geometric center of the HBP until the temperature of the HBP declined to the ambient cooler temperature (4°C). Data was analyzed using the Proc Reg procedure of SAS. Growth of Salmonella spp. showed a linear decrease from 4.9590 log₁₀ at 0 h to 4.1461 log₁₀ CFU at 24 h (P<0.001). Temperature of HBP stored in a plastic container decreased linearly from an average of 25.3°C at 0 h to 5.2°C in 24 h (P<0.001). The results of this study indicate that Salmonella growth was not supported during cooling of hot-boned, pre-rigor pork sausage.