MOISTURE UPTAKE ≠ RETENTION

Chilling is considered a critical step in poultry processing with both water and air are used as chilling media to lower carcass temperatures to < 4C. The extent of water uptake is economically the most important difference between the water immersion and air chilling of poultry. Since 2003, the USDA limits the amount of water that may be retained by post-chill poultry carcasses to a minimum necessary to meet HACCP and food safety objectives. Each plant must establish retained moisture levels and declare it on label of each product. Young and Smith (2004, Poultry Science 83:119-122) compared moisture uptake following water and air chilling and to determine the effects of storage and halving on moisture retention in 43 day old broilers. In this study, air chilled carcasses lost about 0.68% weight post-chill, but did not lose more during subsequent storage and cutting. The water chilled carcasses picked up about 11.7% moisture post-chill, but only retained about 7% through storage (24 hours at 1 C), 6% immediately after cutting into front-halves and leg quarters, and 3.9% after cut up and 24 hours of additional storage (48 hours post-mortem). Leg quarters showed higher purge than front-halves. The new air chilling systems (evaporative air chilling) now incorporate moistening systems to prevent weight loss typically associated with air chilling. Most companies monitor chiller water uptake as an important component of daily plant yield monitoring/calculation program. But in fact, it is the retained moisture that translates to bankable yield. Keep it cold and keep it moving!

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