

## **EFFECT OF SCALDING TEMPERATURE ON THE YIELD, FEATHER REMOVAL, AND QUALITY OF BROILER MEAT**

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The effect of scalding temperature on the yield, feather removal, and quality of broiler meat was evaluated. Broilers (Cobb 500, Body weight  $1.65 \pm 0.2$  kg,  $30 \pm 2$  days old,  $n=25$  per treatment) were slaughtered and scalded at five different temperature ranges;  $52.5 \pm 0.5^\circ\text{C}$ ,  $54 \pm 0.5^\circ\text{C}$ ,  $55.5 \pm 0.5^\circ\text{C}$ ,  $57 \pm 0.5^\circ\text{C}$ , and  $58.5 \pm 0.5^\circ\text{C}$  for 3 min. The live weight of the birds was obtained. After evisceration and chilling, carcasses were reweighed and yields were calculated. After de-feathering, the carcasses were scored from 1 to 4 according to the remaining feathers on the *Uropygium*. The breast meat was removed from the carcass and weighed within 4 h postmortem. Randomly selected five breast fillets in each treatment were used to determine pH, water-holding capacity and cooking loss. Parametric and non-parametric data were analysed using the one-way ANOVA and the Kruskal Wallis Rank Sum test, respectively. Results indicated that the yield parameters were significantly different among the treatment temperatures. Eviscerated ( $77.76 \pm 1.21\%$  vs.  $72.81 \pm 3.68\%$ ), chilled ( $85.00 \pm 0.69\%$  vs.  $76.49 \pm 3.74\%$ ), and breast meat ( $28.02 \pm 1.25\%$  vs.  $23.22 \pm 2.69\%$ ) yields were highest at  $52.5 \pm 0.5^\circ\text{C}$  and lowest at  $58.5 \pm 0.5^\circ\text{C}$ , respectively. There were significant differences ( $p < 0.05$ ) among treatments for feather removal, where  $57 \pm 0.5^\circ\text{C}$  and  $58.5 \pm 0.5^\circ\text{C}$  resulted in good feather removal whereas  $52.5 \pm 0.5^\circ\text{C}$ ,  $54 \pm 0.5^\circ\text{C}$ , and  $55.5 \pm 0.5^\circ\text{C}$  resulted in poor feather removal. Significantly higher ( $p < 0.05$ ) drip loss ( $7.55 \pm 0.05\%$ ) and cooking loss ( $19.92 \pm 0.03\%$ ) were observed at  $58.5 \pm 0.5^\circ\text{C}$ , where pH was higher ( $5.89 \pm 0.01$ ) at  $52.5 \pm 0.5^\circ\text{C}$ . Therefore, it can be concluded that the scalding temperature of  $52.5 \pm 0.5^\circ\text{C}$  is better for achieving higher yields and better meat quality, while  $57 \pm 0.5^\circ\text{C}$  and  $58.5 \pm 0.5^\circ\text{C}$  of temperatures are better for effective feather removal.

**Keywords:** Cook loss, De-feathering, Drip loss, Eviscerated yield, Water-holding capacity