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The effect of pre-stun shocks in electrical water-bath stunners on carcase and meat quality in broilers

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Abstract

The objective of this study was to identify the extent of pre-stun shocks in a commercial broiler processing plant and to collect any evidence of their effect on broiler carcase and meat quality. The results showed that the degree of bird movement on entry to the water-bath was related to the incidence of pre-stun shocks, with heavier male birds showing less movement and correspondingly lower levels of pre-stun shocks. In a separate trial, 500 birds identified as receiving a pre-stun shock were compared with 500 control birds (no pre-stun shock). They were assessed for carcase downgrading conditions, red wing tips, wing haemorrhages, shoulder haemorrhages, breast muscle haemorrhages, the incidence of broken pectoral bones and also for meat quality defects. All downgrading conditions were subjectively assessed using photographic standards. The results of this study have shown that the incidence of pre-stun shocks has a significant effect both on carcase downgrading conditions and on meat quality. Pre-stun shocks are preventable and the poultry processing industry can improve both bird welfare and carcase and meat quality by ensuring that they do not occur.

Keywords: animal welfare, carcase quality, electrical stunning, miss-stun, pre-stun shocks, water-bath stunner