

ACHIEVING THE PROPOSED TEMPERATURE REQUIREMENTS FOR MEAT DELIVERY

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The Queensland Livestock and Meat Authority (QLMA) is seeking to include temperature requirements under its Conditions for Accreditation for Meat Processing. These conditions are the operational aspects of the *Meat Industry Act* 1993 (Queensland legislation). The proposed temperature requirements are that carcasses 10 kg to 45 kg and greater than 45 kg can be despatched from the facilities of initial chilling only when the deep butt temperature is less than 10°C and 20°C, respectively. The requirements also propose that air temperature within delivery vehicles be maintained at not more than 5°C. However, the meat processing industry is concerned about its ability to meet those requirements, especially the air temperature requirement for delivery vehicles because vehicle doors are frequently opened during deliveries.

The aim of this study was to ascertain whether delivery vehicles complied with the proposed temperature requirements. Deep butt temperatures of 146, 139 and 220 beef, sheep, and pig carcasses, respectively, were measured immediately before being loaded into 11 delivery vehicles. The delivery vehicles operated from 5 processing facilities, 1 in each of 5 regional centres. Seven of the vehicles delivered meat within metropolitan areas and the other 4 operated between cities. The deep butt temperatures were re-measured at the point of delivery and the vehicle's air temperature was logged every 10 minutes during transit using a temperature data logger.

The mean deep butt temperature of carcasses 10 kg to 45 kg and greater than 45 kg were 3.6°C and 14.9°C, respectively, at load-out, and 5.5°C and 10.3°C, respectively, at the point of delivery. These results indicate that there is scope to reduce deep butt temperatures at load-out, especially for those carcasses greater than 45 kg. The percentage of carcasses 10 kg to 45 kg and greater than 45 kg which exceeded the temperature requirement were 1.5% and 38.3%, respectively, at load-out, and 2.0% and 0.0%, respectively, at the point of delivery. This also shows that delivery vehicles were able to reduce the deep butt temperature of carcasses greater than 45 kg.

Table 1. The mean air temperature of meat delivery vehicles operating within metropolitan areas and inter-city (standard deviations shown in parentheses)

Delivery area	Number of meat delivery vehicles surveyed	Mean time from load-out to point of delivery (hours)	Delivery vehicle air temperature (°C)	
			Mean temperature	Percentage of time > 5°C
Metropolitan	7	6 (3.0)	9.7 (3.05)	94 (14.1)
Inter-city	4	17 (8.8)	3.4 (2.97)	27 (32.9)

Table 1 shows that air temperature within delivery vehicles was too high, especially those delivering within metropolitan areas. This study found that it may be difficult for delivery vehicles to achieve the proposed requirement on air temperature of not more than 5°C. However, lowering deep butt temperature at load-out may help to maintain a lower air temperature during transit.

Following the completion of this study, national health and hygiene standards for meat processing were developed by the Agricultural and Resource Management Council of Australia and New Zealand (ARMCANZ), and those standards propose that carcasses, sides and quarters should not exceed 7°C surface temperature following initial chilling. Subsequently, the QLMA is considering using surface temperature as the temperature requirement under its Conditions for Accreditation for Meat Processing.