THE INCIDENCE OF PSE IN SELECTED PIG ABATTOIRS IN VICTORIA

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The incidence of pork quality defects is of major concern to the pig industry in Australia. The 1 defect that causes the most concern is Pale, Soft, Exudative (PSE) pork. The incidence of PSE has been reported to vary from 0-62% between Australian abattoirs with an average of 32% (Trout 1992) and more recently the incidence of soft, exudative (SE) pork to vary between 41-64% with an average of 5 1% (Eldridge, *et al.* 1995). The large variations could be the result of differences in pig genotype, pig management and pig carcase management.

The aim of the National Pork Quality Improvement Program is to reduce the incidence of PSE by 50% in participating abattoirs implementing of management standards for pigs and pig carcases. This paper reports on the quality audits in Victorian abattoirs. Three abattoirs in Victoria agreed to participate in the program and were audited in 1995. The incidence of meat quality defects was measured and recommendations were made to reduce the incidence of these quality defects. The abattoirs were audited 4 months after the first audit to determine if any changes had occurred due to implementation of the program recommendations. The audit procedure included observation of live animal treatment from time of arrival at the abattoir, through lairage and all components of slaughter procedures until the carcase was in the chiller and chilled to a deep butt temperature of below 18°C.

A total of 1798 pigs (18.8% of the total slaughter) were measured during the first audit and 1926 (20.5% of the total slaughter) during the second audit. Each audit was over 3 consecutive slaughter days. Muscle pH was measured in 2 sites on the carcase 6 - 8 hours post slaughter; loin (*M. Longissimus dorsi* at the P2 site) and ham (*M. Semimembranosus* adjacent to the *tuber ischii*). Meat quality was described as normal if the pH was between 5.6 and 6.0, soft exudative (SE) if the pH was ≤ 5.6 and dark, firm and dry (DFD) if the pH was >6.0.

Carcases were described as having a quality defect extensively if the condition was found in both the loin and ham or localised if the condition was found in only 1 of the 2 sites. The incidence of meat quality defects is shown in Table 1.

Table 1. The percentage incidence of meat quality in three Victorian abattoirs

	Abattoir 1		Abattoir 2		Abattoir 3		Weighted Mean	
Audit series	1	2	1	2	1	2	1	2
n	666	751	493	528	639	647	1798	1926
Extensive SE	13.7	17.1	11.6	9.3	8.5	4.5	11.2	10.6
Localised SE	17.6	27.6	16.1	7.0	7.8	14.4	13.7	17.5
Normal	42.8	28.0	30.5	41.0	40.4	31.8	38.6	32.9
Localised DFD	14.9	18.4	23.1	24.0	17.2	25.3	18.0	22.3
Extensive DFD	11.1	8.9	18.7	18.7	26.1	24.0	18.5	16.7

Abattoir 2 was the only facility to implement changes based on the programme recommendations made after audit 1. The changes were in the pre-slaughter handling, race design and stunning and resulted in an increase in incidence of normal meat and the reduction of SE meat. The rate of chilling appeared to have an effect on the incidence of SE meat with abattoir 2 routinely spacing the carcases in the chillers ensuring adequate circulation. The relationship between transport time and lairage time and the effects on meat quality was not clear. In conclusion, these results suggest that when improvements in the pre-slaughter management of pigs are made, there is a positive effect on the incidence of normal pork.

TROUT, G. (1992). *In* " Meat Research Newsletter" 92/3. (CSIRO, Division of Food Processing, Meat Research Laboratory: Brisbane).

ELDRIDGE, G.(the late), MAYNARD, P., WARNER, R.D., PENGELLY, A., KNOWLES, H.M. (1995). *In* "Manipulating Pig Production V", (Eds D.P. Hennesy and P.D. Cranwell) p. 256 (Australasian Pig Science Association, Victorian Institute of Animal Science: Werribee, Victoria 3030).