Incidence of carcass damage in slaughter pigs

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Introduction

D_{uring} transport and lairage prior to slaughter pigs from different rearing groups are frequently mixed. The fighting which often ensues leads to Unside. unsightly lacerations on the carcass which, in severe cases, may lead to its downer, domgrading. The so-called rind-side damage makes the carcasses less suitable for run. for curing. The so-called rind-side damage makes the curtout have been for curing into bacon and there is also evidence that pigs which have been fighting. fighting preslaughter are more likely to produce meat with a high ultimate pH [karvis Warriss and Lister, 1983). Despite the economic importance of these effects there $h_{\rm Fre}^{a_{\rm S}}$ and Lister, 1983). Despite the economic importance of damaged carcasses. A survey to be no recent estimate of the incidence of damaged carcasses. A subvey carried out in the mid-seventies found that over 40% of pig carcasses sho_{eq} . showed some evidence of fighting damage (Meat and Livestock Commission, 1976) but the but the number which were bad enough to be downgraded was not recorded. The Problem $^{\rm Ten humber}$ which were bad enough to be downgraded was not the problem has been highlighted by the increasing use of entire males (boars) for $ba_{\rm Con,\,per}$ $b_{b_{COD}}$ production and the commonly-held belief in the meat trade that boars are non-¹⁰Production and the commonly-held belief in the mean transforme prone to fighting. Downgraded carcasses are given a Z-grading under the Meat and $M_{eat}^{\rm inform}$ to fighting. Downgraded carcasses are given a signate is not $M_{eat}^{\rm inf}$ and Livestock Commission pig classification scheme. This grade is not restrict. restricted to carcasses damaged through <u>ante-mortem</u> fighting but is given to all the a) those which are "scraggy, deformed, blemished, pigmented, coarse-skinned or parts." Nevertheless, ^{or partly condemned, or those with soft fat or pale muscle". Nevertheless, observer,} observation suggests that carcasses damaged by fighting make up the over-Melping Rajority of those which are given a Z-grade. Therefore we have recorded

 $r_{ec_0 rded}$ the incidence of Z-graded carcasses in order to estimate the current in_{portan} importance of the problem.

Materials and Methods

The frequency of Z-graded carcasses was recorded over one year (1982/83) in three backs of Z-graded carcasses was recorded over one year (1982/83) in three bacon factories each slaughtering approximately 100,000 pigs per annum. $b_{\rm Uring the}$ $\frac{v_{acon}}{v_{as}}$ factories each slaughtering approximately 100,000 prospective v_{as} period studied the overall number of pigs killed was 300,045. It $w_{a_3}^{\ 5}$ whe period studied the overall number of pigs killed was subject $(c_{a_3}, c_{a_3}, c_{a_3},$ $(c_{astrates}^{\rm result}$ and gilts combined). Differences between the proportions of boars

 $^{\text{and}}$ $_{\text{Non-boars}}$ given Z-grading were tested using Chi-squared tests. Results and Discussion

The results for the three factories are given in Table 1. Overall, the incidence of π About 21% of all slaughtered $^{\rm TeguIts}_{\rm hc_idence}$ of Z-graded carcasses was 4.67%. About 21% of all slaughtered pigs $^{\rm Were}_{\rm boare}$ $^{\rm reflec}_{\rm were \ bars}$ and of these 5.29% were awarded a Z-grading. The comparable $\ln_{cidence\ ec}$ 4.51%. The proportion of boa $n_{c1dence}^{voars}$ and of these 5.29% were awarded a Z-grading. The comparison of boars in $l_{c1dence}$ of Z-grades in the non-boars was 4.51%. The proportion of boars is not between the three factories by the second between the second betwe Hiled and the incidence of Z-grading varied between the three factories but in dec plant the incidence of Z-grading varied between the in non-boars and the ere and the incidence of Z-grading varied between the three ractor of the incidence of Z-grading varied between the three ractor and the differences the frequency was always higher in boars than in non-boars and the $^{\rm mag}_{\rm differences}$ were very highly significant (P<0.001). The incidence in boars $r_{\rm anged}$ from $^{\rm refences}_{\rm raged from 1.3}$ to 2.5 times the incidence in the combined gilts and castrates and the plane. $p_{\rm roportion, ac}$ in 1.3 to 2.5 times the incidence in the combined gives $p_{\rm roportion, ac}$ incidence overall had in fact the lowest proportion action is that, at very low $^{\rm Vne}$ plant with the highest incidence overall had in Tacc the highest of boars slaughtered. The implication is that, at very low incidences ne $h_{e(a}^{orthon}$ of boars slaughtered. The implication is that, at very ion e_{A} is h_{one} of Z-grades, reflecting good preslaughter handling, the effect of 2. $k_{k,i}^{\text{vences}}$ of Z-grades, reflecting good preslaughter handling, the effect of $k_{k,i}$ more important than where handling is less careful and the incidence of k_{i} and $k_{k,i}$ is here. $2_{\rm s}^{13}$ more important than where handling is less careful and the sociated $2_{\rm s}^{13}$ more is mortant than where handling is less careful and the sociated $1_{\rm b}^{13}$ boars is high. With good handling however, the extra problem associated $1_{\rm b}^{13}$ boars is With boars is high. With good handling however, the extra problem essence of the start of the second start of the start of ¹⁰⁰ Ogars is considerably reduced in absolute terms. This handling considerably reduced in absolute terms. This handling considerably seem to relate to the practice of keeping pigs in lairage for long series. We use the lowest incidence of Z-grading keeps are the lowest incidence $p_{e_1}^{e_3}$ seem to relate to the practice of keeping pigs in large $p_{e_1}^{e_1}$ seem to relate to the practice of keeping pigs in large $p_{e_1}^{e_1}$ see how that the plant with the lowest incidence of Z-grading keeps $p_{e_1}^{e_1}$ proposition $p_{e_1}^{e_1}$ to be a seasonal effect the plant with the plant with the plant be a seasonal effect. $h_{\rm phi}^{\rm rodg}$. We know that the plant with the lowest incidence of Z-graving set high proportion of its pigs overnight. The possibility of a seasonal effect to the incidence of its pigs overnight. The possibility of a seasonal effect to the incidence of In the proportion of its pigs overnight. The possibility of a seasone, the incidence of Z-grading was examined (Fig 1). There is no evidence that $b_{b_{0}}$ frequency. h_e^{dig} incidence of Z-grading was examined (Fig 1). There is no evidence of Z-grading was examined (Fig 1). There is no evidence $h_{a_{a_s}}^{b_{a_{a_s}}}$ and this is also true if $h_{a_{a_s}}^{b_{a_{a_s}}}$ and h_{non-b} . bears and non-boars are considered separately.

The variation in the incidence of damaged carcasses between the three plants by Survey In ^{variation} in the incidence of damaged carcasses between the three pro-barlier survey and also in the Meat and Livestock Commission survey referred to the sugner. $^{\rm ents}_{\rm survey}$ and also in the Meat and Livestock Commission survey, $1_{\rm aughter}_{\rm bands}$ that much of the problem could be avoided by different pre- $1_{aughter}^{1/er}$ suggests that much of the problem could be avoided by unitary $1_{aughter}^{1/er}$ handling procedures, whenever possible avoiding mixing groups of $M_{w_{co}}$ is the number of damaged carcasses $w_{hf_{aniliar}}^{ant_{er}}$ handling procedures, whenever possible avoiding mixing group $w_{hf_{aniliar}}^{bn}$ pigs. Certainly, reduction in the number of damaged carcasses as the economic devices and the start and the st $w_{0j|l}^{\rm millar}$ pigs. Certainly, reduction in the number of damaged concernance $k_{0j|l}$ be economically beneficial and might also lead to improved meat quality $k_{0j|l}$ as being the start of animal welfare.

as well as being desirable in the context of animal welfare. $A_{cknowledgements}$. I thank Mr J.M. Akers for data collection and Miss Jackie A_{bby} for help

Ashby for help with its collation.

References:

Meat and Livestock Commission 1976, Technical Bulletin Number 14. Handling pigs from farm to slaughterhouse.

Warriss, P.D. and Lister, D. 1983, Animal Production 36, 525. The physiological responses to fighting in pigs and the consequences for meat quality.

Table 1. The incidence of Z-graded carcasses in three plants each slaughtering about 100,000 pigs per year

Plant	% boars killed	% Z			Significance	Ratio of incidence
		overall	boars	non- boars	between sexes X ²	in non-boars
A	21.8	1.2	2.2	0.9	250.2 ***	2.5
В	29.4	4.1	5.0	3.7	98.7 ***	1.4
С	13.3	8.5	10.5	8.2	79.7 ***	1.3

157 C 10-2 % 5--B - A 0-AMJJASONDJFM

Fig. 1 The monthly incidence of Z-graded carcasses in the three plants

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MONTHS