



Pig Carcase Authentication Service



A series on carcase classification from the Meat and Livestock Commission

Pig Carcase Classification for the Meat Industry

The MLC's Independent Authentication Service

MLC has been classifying pig carcasses throughout Great Britain since 1971. The information provided by the Pig Carcase Authentication Service is used widely as the basis for transactions between producers and slaughterers.

The current service incorporates all of the mandatory requirements of the EC Pig Carcase Grading Scheme which was introduced in Great Britain in 1989.

What does the service provide?

The service provides pig slaughterers with technically trained MLC staff who independently establish all of the important criteria for trade between pig suppliers and abattoirs.

The service includes

Identification

Carcasses are individually serially numbered and slap marks are recorded to identify each consignment of pigs.

Weighing

Carcasses are individually weighed. Hot weights are recorded, with hot weight rebates and dressing coefficients deducted to establish the payment weight (see page 5 for hot weight rebates and dressing coefficients). Regular scale and tare checks form an integral part of the service.

Mature boars and sows are not covered by the mandatory scheme, but a weighing service is available as part of the Authentication Service.

Backfat measurement and lean meat percentage

MLC classifiers are trained to operate all of the approved grading equipment (see Methods and Probes). (Technical advice is available for abattoirs considering installation of automatic measuring equipment.)

Visual Appraisal

Identification of pigs with carcase faults. These are described as "Z" carcasses. Carcasses that are scraggy, deformed, blemished, pigmented, coarse skinned, those with soft fat or pale muscle and those devalued by being partially condemned are recorded as "Z" on the carcase record (PCC1 or computer equivalent).

Young boars are identified and recorded.

Carcasses with poor conformation are recorded as "C" carcasses at the request of the abattoir.

Dressing Specification

Carcase dressing specifications are closely monitored by MLC staff and provide a vital element of the carcase record (see pages 6 and 7).

Carcase Marking

The P2 or sum of P1 and P3 (mm) is marked on the carcase.

Methods and Probes

MLC offers four methods, (provided by five pieces of equipment) of pig carcass classification for the prediction of lean meat percentage in accordance with EU legislation



Optical Probe



*Hennessey
Grading Probe (HGP)*



Fat-O-Meter (FOM)



UltraFOM



CSB Ultra-Meater

Each method involves taking carcass measurements with EU approved equipment at specified positions on each carcass. Equipment approved for use in the UK is:

Optical Probe, Hennessey Grading Probe (HGP), Fat-O-Meater (FOM), UltraFOM, CSB Ultra- Meater.

The HGP, FOM, UltraFOM and CSB Ultra-Meater are all automatic recording probes.

Method 1

Optical Probe is used to measure back fat and rind thickness at the P1 and P3 positions, level with the head of the last rib. The probe is inserted 4.5cm and 8cm from the dorsal mid-line respectively (see fig 1). The sum of the P1 and P3 measurements is recorded.

Method 2

Optical Probe is used to measure back fat and rind thickness at the P2 position, level with the head of the last rib. The probe is inserted 6.5cm from the dorsal mid-line respectively (see fig 1).

Method 3

HGP, FOM or UltraFOM are used to measure:

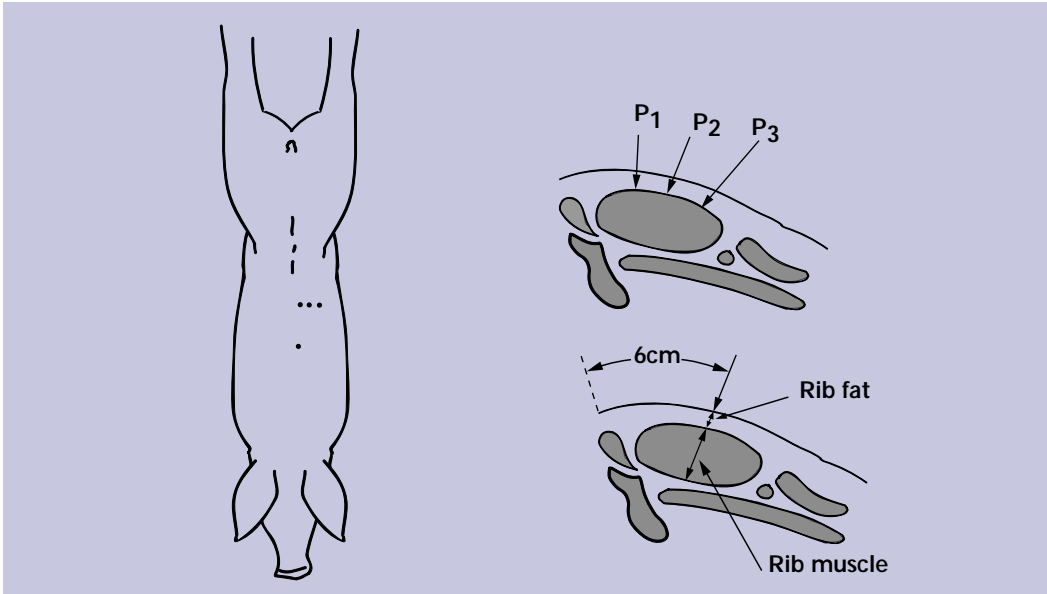
- a Back fat and rind thickness at the P2 position as for Method 2. The HGP or FOM probes are inserted 6cm from the dorsal mid-line (see fig 1).
- b Back fat and rind thickness at a point 6cm from the dorsal mid-line between the third/fourth last rib (see fig 1). This measurement is referred to as rib fat.
- c Longissimus dorsi (eye muscle) depth at a point 6cm from the dorsal mid-line between the third and fourth last rib (see fig 1). This measurement is referred to as rib muscle.

The **UltraFOM** measures at the same points ultrasonically.

Method 4

CSB Ultra-Meater is also an ultrasonic technique. It measures back fat and muscle thickness longitudinally 6cm from the mid-line in the region of the third fourth last rib.

Figure 1 Location of probing sites on a pig carcass



Lean Meat Percentage and EU grade

Lean meat percentage is calculated as follows:

Optical Probe

Cold carcass weight and P2 (or P1+P3) fat depths are used to estimate lean meat percentage.

Automatic Equipment

The automatically recorded measurements P2, rib fat and rib muscle are used for calculation of lean meat percentage.

An EU grade can be allocated to a carcass by using the lean meat percentage figure.

| Lean meat percentage | EC grade |
|----------------------|----------|
| 60% and above | S |
| 55 - 59% | E |
| 50 - 54% | U |
| 45 - 49% | R |
| 40 - 44% | O |
| 39% or less | P |

Hot Weight Rebates

The carcase shall be weighed to the nearest 0.5kg rounded down. When carcases are weighed 'hot', the 'cold' weight will be ascertained by making rebates as follows:

Clean Pigs

| Hot weight carcase range in kg | Interval (in minutes) between slaughter and weighing the carcase | | | |
|--------------------------------|--|----------|-----------|---------------|
| | 0 - 45 | 46 - 180 | 181 - 330 | More than 330 |
| Rebate in kg | | | | |
| >56 | 1.0 | 0.5 | 0.5 | 0 |
| 56.5 - 74.5 | 1.5 | 1.0 | 0.5 | 0 |
| 75> | 2.0 | 1.5 | 0.5 | 0 |

Tongue (Tng)/Flare Fat, Kidney and Diaphragm (FFKD) Coefficients

| Hot weight carcase range in kg | Tng Out | Tng In | Tng Out | Tng In |
|--------------------------------|----------|----------|---------|---------|
| | FFKD Out | FFKD Out | FFKD In | FFKD In |
| Deductions in kg | | | | |
| >56 | 0 | 0.3 | 0.7 | 1.0 |
| 56.5 - 74.5 | 0 | 0.3 | 1.1 | 1.4 |
| 75> | 0 | 0.3 | 1.6 | 1.9 |

Breeding Pigs

| Hot weight carcase range in kg | Interval (in minutes) between slaughter and weighing the carcase | | |
|--------------------------------|--|----------|-----------|
| | 0 - 60 | 61 - 240 | 241 - 360 |
| Rebate in kg | | | |
| >56 | 1.0 | 1.5 | 0.0 |
| 56.5 - 71 | 1.5 | 1.0 | 1.5 |
| 71.5 - 94 | 2.0 | 1.5 | 1.0 |
| 94.5 - 107 | 2.5 | 2.0 | 1.5 |
| 107.5 - 120 | 3.0 | 2.5 | 2.0 |
| 120.5 - 140 | 3.5 | 3.0 | 2.5 |
| 140.5 - 160 | 4.0 | 3.5 | 3.0 |
| 160.5 - 180 | 4.5 | 4.0 | 3.5 |
| 180.5 - 200 | 5.0 | 4.5 | 4.0 |
| 200.5> | 5.5 | 5.0 | 4.5 |

- NOTE. a) If weighed 'cold', carcases shall be weighed within 24 hours of slaughter.
 b) Carcases which are to be skinned can be weighed with the hair on, but a deduction of 1.5kg will be made for the weight of hair.

DRESSING SPECIFICATION

Including
FFKD:
Flare Fat
Kidney
Diaphragm



Excluding
FFKD



NECK TRIMMING

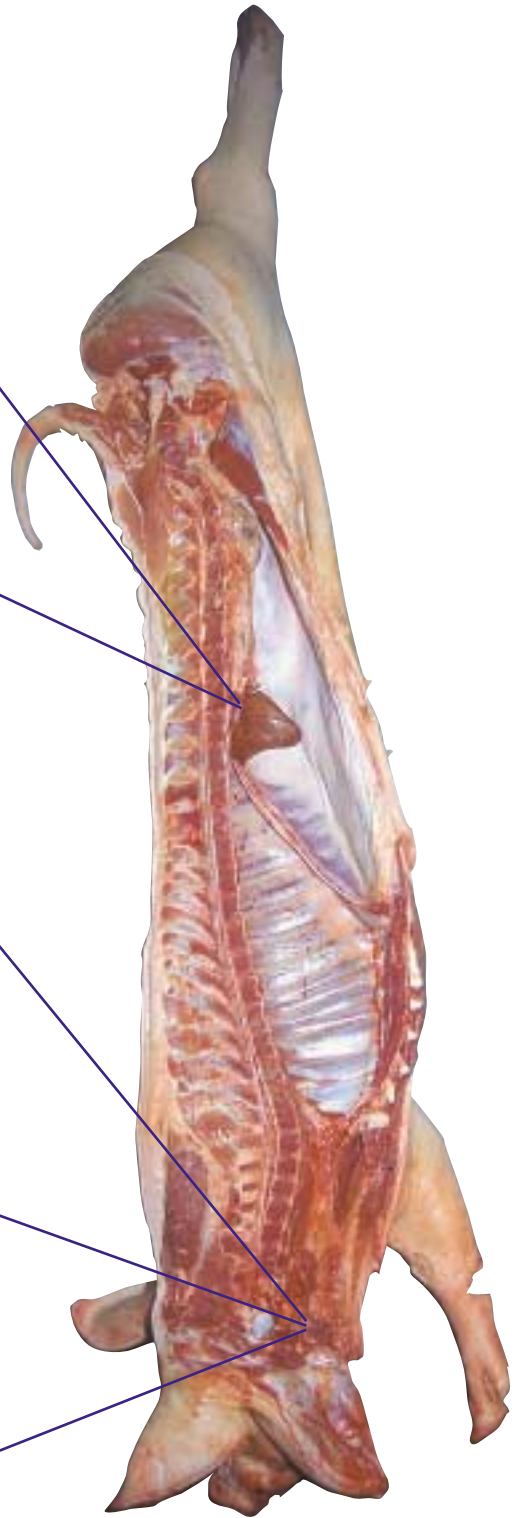
Untrimmed



Trimmed to
specification



Overtrimmed



CARCASE DAMAGE - FIGHTING

The natural inclination of pigs to establish a pecking order will result in fighting when peer groups are mixed. The resulting carcass damage can result in the production of Z carcasses (blemish).



Loin



Ham

CARCASE IDENTIFICATION

Slaps

Correctly and clearly applied slaps are essential for carcasses to be accurately identified on slaughter lines. Slap markers should be regularly cleaned and inspected to ensure all tines are present and not damaged. Tattooing ink must be frequently replenished to ensure slaps can be read. Abattoirs may have particular requirements regarding the preferred position of slap marks; suppliers should therefore liaise with individual slaughterers to ensure compliance.

Poor slaps



Good slap



These leaflets are available to slaughterers from MLC. They are designed to communicate poor slapping to the supplier and encourage effective application of slaps.

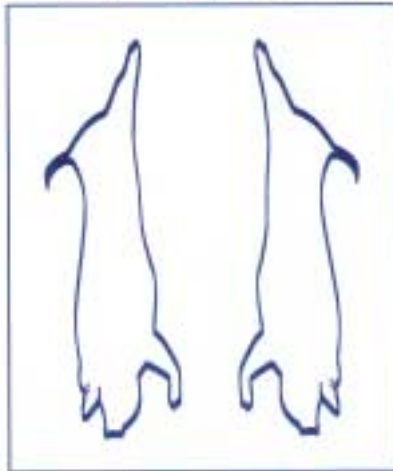
CLEAR SLAPS PIG SUPPLIERS/HAULIERS

CLEAR

Do you have difficulty reading this?
So do we when slaps are poorly applied!

- Good slaps are vital to ensure suppliers are paid for the correct pigs.
- Ensure slappers are clean, the tines are complete and undamaged. Use tattoo ink regularly and apply the slap in the correct place (see diagram below).

S L A P M A R K S



- This diagram identifies the preferred location for the slap mark when sending pigs to this abattoir.

“CLEAR
Slaps Make Sense”

Clean pigs and young boars

A The following parts shall be removed:

- a) Hair (see note b under Hot Weight Rebates)
- b) Liver, melt, heart and lungs, ie the “pluck” or “race”
- c) Guts
- d) Caul and gut fat
- e) Genito-urinary organs, excluding kidneys
- f) Scrotal sac on boar carcasses
- g) Nails on each foot

B The following parts shall not be removed:

- a) The head
- b) The feet and tail
- c) Ear root and eyes
- d) There shall be no trimming of the neck beyond cutting off ragged edges and cleanly removing the blood vessels.

C The tongue may either:

- a) remain attached to the carcase or
- b) be removed from the head attached to the pluck, taking with it the minimum amount of meat attached to the jaw.

D The flare fat, kidneys and diaphragm (FFKD) may either:

- a) remain attached to the carcase or
- b) be entirely removed.

NOTE: A dressing coefficient reduction will be made according to the dressing specification used.

Mature Boars

Mature boar carcasses may be dressed as in A, B, C and D above, or as sow carcasses (see below).

Sows

The following parts shall be removed, in addition to a-e in Section A above:

- a) Head (to be square cut)
- b) Tail
- c) Flare fat and diaphragm
- d) Kidney and kidney fat
- e) Front and hind feet
- f) Udder (to be removed tidily)

MLC Authenticated Classification Documents

Manual record

MLC PIG CARCASS SERVICE
(INCORPORATING SUC PIG CARCASS GRADING SCHEME)

Participant Name: 907652

Lot Details: No. 11, Dress 4PLC 560, Size 4010-010

Centre Name: WINTERHILL, Supplier: JONES

FOR PARTICIPANT'S USE

| Slip No. | Kill No. | Hot Weigh (kg) | Se Weigh (kg) | Cond (kg) | Net C (kg) | Pay (kg) | Prb (kg) | Est% I | Est% B | Remarks |
|----------|----------|----------------|---------------|-----------|------------|----------|----------|--------|--------|---------|
| 12340 | 000001 | 56.5 | 1.1 | 0.0 | 55.0 | 55.0 | 11 | 57.0 | | |
| 12340 | 000002 | 59.0 | 1.1 | 0.0 | 57.5 | 57.5 | 10 | 58.3 | II | |
| 12340 | 000003 | 62.0 | 1.1 | 0.0 | 60.5 | 60.5 | 09 | 59.7 | II | SLR 102 |
| 12340 | 000004 | 61.8 | 1.3 | 0.0 | 60.0 | 60.0 | 12 | 56.2 | | |
| 12340 | 000005 | 60.5 | 1.1 | 0.0 | 59.0 | 59.0 | 11 | 57.0 | III | |
| 12340 | 000006 | 52.0 | 1.3 | 0.0 | 51.0 | 51.0 | 07 | 61.3 | | |
| 12340 | 000007 | 55.5 | 1.3 | 0.0 | 54.5 | 54.5 | 10 | 58.1 | II | |
| 12340 | 000008 | 55.0 | 1.3 | 0.0 | 54.0 | 54.0 | 09 | 59.3 | | |
| 12340 | 000009 | 63.0 | 1.1 | 0.0 | 61.5 | 61.5 | 14 | 54.0 | II | |
| 12340 | 000010 | 55.5 | 1.3 | 0.0 | 54.5 | 54.5 | 11 | 57.0 | | |

Computerised data capture record

MLC Pig - Carcass Service

Participant: 4 ICS, SE ENTER, 907652, Method: 1P2

Lot Details: No. 11, Dress 4PLC 560, Size 4010-010, Tongue: DUT

Centre: WINTERHILL, No. 11234, Week No. 121, Staff No. 1, PPKD, ADUT/PAY NO

Supplier: JONES

| Slip | Kill | Hot (kg) | Se (kg) | Cond (kg) | Net C (kg) | Pay (kg) | Prb (kg) | Est% I | Est% B | Remarks |
|-------|--------|----------|---------|-----------|------------|----------|----------|--------|--------|---------|
| 12340 | 000001 | 56.5 | 1.1 | 0.0 | 55.0 | 55.0 | 11 | 57.0 | | |
| 12340 | 000002 | 59.0 | 1.1 | 0.0 | 57.5 | 57.5 | 10 | 58.3 | II | |
| 12340 | 000003 | 62.0 | 1.1 | 0.0 | 60.5 | 60.5 | 09 | 59.7 | II | SLR 102 |
| 12340 | 000004 | 61.8 | 1.3 | 0.0 | 60.0 | 60.0 | 12 | 56.2 | | |
| 12340 | 000005 | 60.5 | 1.1 | 0.0 | 59.0 | 59.0 | 11 | 57.0 | III | |
| 12340 | 000006 | 52.0 | 1.3 | 0.0 | 51.0 | 51.0 | 07 | 61.3 | | |
| 12340 | 000007 | 55.5 | 1.3 | 0.0 | 54.5 | 54.5 | 10 | 58.1 | II | |
| 12340 | 000008 | 55.0 | 1.3 | 0.0 | 54.0 | 54.0 | 09 | 59.3 | | |
| 12340 | 000009 | 63.0 | 1.1 | 0.0 | 61.5 | 61.5 | 14 | 54.0 | II | |
| 12340 | 000010 | 55.5 | 1.3 | 0.0 | 54.5 | 54.5 | 11 | 57.0 | | |

A copy of the MLC carcass classification document is made available for passing directly back to the producer. Producers and suppliers should therefore insist on receiving this important document for every consignment of carcasses.



Pig Carcase Authentication Service

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