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**COMMISSION DECISION**

**of 3 March 1988**

**authorizing methods for grading pig carcases in the United Kingdom**

**(Only the English text is authentic)**

**(88/234/EEC)**

**(OJ L 105, 26.4.1988, p. 15)**

Amended by:

|  |  | Official Journal | | |
|  |  | No | page | date |
| --- | --- | --- | --- | --- |
| ►**M1** | Commission Decision of 22 July 1988 (88/478/EEC) | L 234 | 17 | 24.8.1988 |
| ►**M2** | Commission Decision of 19 November 1992 (92/557/EEC) | L 358 | 22 | 8.12.1992 |
| ►**M3** | Commission Decision of 12 July 1993 (93/445/EEC) | L 208 | 36 | 19.8.1993 |
| ►**M4** | Commission Decision of 26 May 1994 (94/336/EC) | L 150 | 34 | 16.6.1994 |
| ►**M5** | Commission Decision of 27 July 1994 (94/567/EC) | L 215 | 28 | 20.8.1994 |
| ►**M6** | Commission Decision 2003/750/EC of 20 October 2003 | L 271 | 24 | 22.10.2003 |

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## COMMISSION DECISION

### of 3 March 1988

### authorizing methods for grading pig carcases in the United Kingdom

**(Only the English text is authentic)**

(88/234/EEC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community,

Having regard to Council Regulation (EEC) No 2759/75 of 29 October 1975 on the common organization of the market in pigmeat ([1]), as last amended by Regulation (EEC) No 3906/87 ([2]), and in particular Article 4 (6) thereof,

Having regard to Council Regulation (EEC) No 3220/84 of 13 November 1984 determining the Community scale for grading pig carcases ([3]), as amended by Regulation (EEC) No 3530/86 ([4]), and in particular Article 5 (2) thereof,

Whereas Article 2 (3) of Regulation (EEC) No 3220/84 provides that the grading of pig carcases must be determined by estimating the content of lean meat in accordance with statistically proven assessment methods based on the physical measurement of one or more anatomical parts of the pig carcase; whereas the authorization of grading methods is subject to compliance with a maximum tolerance for statistical error in assessment; whereas this tolerance has been defined in Article 3 of Commission Regulation (EEC) No 2967/85 of 24 October 1985 laying down detailed rules for the application of the Community scale for grading pig carcases ([5]);

Whereas the Government of the United Kingdom has requested the Commission to authorize the use of three methods for grading pig carcases on its territory (excluding Northern Ireland) and has submitted the information required in Article 3 of Regulation (EEC) No 2967/85; whereas an examination of this request has revealed that the conditions for authorizing the said grading methods are fulfilled;

Whereas Article 2 of Regulation (EEC) No 3220/84 lays down that Member States may be authorized to provide for a presentation of pig carcases different from the standard presentation defined in the same Article where commercial practice or technical requirements warrant such a derogation;

Whereas in the United Kingdom commercial practice does not require that the tongue is removed from the pig carcase; whereas this should be taken into account in adjusting the weight for standard presentation;

Whereas in accordance with Article 2 (3) of Regulation (EEC) No 2967/85 and by way of derogation from Article 2 (1) and (2) thereof, the weight of the cold carcase may be calculated by reference to pre-determined scales of absolute weight reductions if the reductions for individual weight classes correspond, as far as possible, to the reductions calculated in percentage terms; whereas the United Kingdom has notified the determination of such a scale to the Commission;

Whereas no modification of the apparatus or grading method may be authorized except by means of a new Commission Decision adopted in the light of experience gained; whereas, for this reason, the present authorization may be revoked;

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([1]) OJ No L 282, 1. 11. 1975, p. 1.
([2]) OJ No L 370, 30. 12. 1987, p. 11.
([3]) OJ No L 301, 20. 11. 1984, p. 1.
([4]) OJ No L 326, 21. 11. 1986, p. 8.
([5]) OJ No L 285, 25. 10. 1985, p. 39.

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Whereas the measures provided for in this Decision are in accordance with the opinion of the Management Committee for Pigmeat,

HAS ADOPTED THIS DECISION:

*Article 1*

The use of the following methods is hereby authorized for grading pig carcases pursuant to Regulation (EEC) No 3220/84 in the United Kingdom, excluding Northern Ireland:

— the apparatus termed 'Intrascope (Optical Probe)' and assessment methods related thereto, details of which are given in Part 1 of Annex I,

— the apparatus termed 'Fat-O-Meater (FOM)' and assessment methods related thereto, details of which are given in Part 2 of Annex I,

— the apparatus termed 'Hennessy Grading Probe (HGP II)' and assessment methods related thereto, details of which are given in Part 3 of Annex I,

▼**M2**

— the apparatus termed 'CBS Ultra-Meater' and the assessment method related thereto, details of which are given in Part 4 of Annex I,

▼**M6**

— the apparatus termed 'Fully automatic ultrasonic carcass grading' (Autofom) and assessment methods related thereto, details of which are given in part 5 of the Annex.

▼**M2**

As regards the apparatus 'CBS Ultra-Meater', it is laid down that after the end of the measurement procedure it must be possible to verify on the carcase that the apparatus measured the values of measurement $X_1$ and $X_2$ on the site provided for in Annex I, Part 4, point 3. The corresponding marking of the measurement site must be made at the same time as the measurement procedure.

▼**M6**

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▼**M1**

*Article 1a*

The use of the following methods is hereby authorized for grading pig carcases pursuant to Regulation (EEC) No 3220/84 in Northern Ireland:

— the apparatus termed 'Intrascope (Optical Probe)' and assessment methods related thereto, details of which are given in Part 1 of Annex IA,

— the apparatus termed 'Mark II Ulster Probe' and assessment methods related thereto, details of which are given in Part 2 of Annex IA,

▼**M5**

— the apparatus termed 'Fat-O-Meater (FOM)' and assessment methods related thereto, details of which are given in Part 3 of Annex IA.

▼**M1**

*Article 2*

Notwithstanding the standard presentation referred to in Article 2 of Regulation (EEC) No 3220/84, pig carcases may be presented in the United Kingdom of Great Britain and Northern Ireland, with the tongue attached before being weighted and graded. In order to establish quotations for pig carcases on a comparable basis, the recorded hot weight shall be reduced by 0,3 kg.

▼__M4__

### *Article 2a*

Notwithstanding the standard presentation referred to in Article 2 (1) of Regulation (EEC) No 3220/84, the flare fat, the kidneys and the diaphragm need not be removed from pig carcases before being weighed and graded. In order to establish quotations for pig carcases on a comparable basis, the recorded hot weight shall be reduced:

— for pig carcases up to 56 kg, by 0,7 kg
— for pig carcases from 56,5 to 74,5 kg; by 1,1 kg
— for pig carcases of 75 kg and over, by 1,6 kg.

▼__M1__

### *Article 3*

Notwithstanding Article 2 (1) and (2) of Regulation (EEC) No 2967/85 the weight of the cold carcase shall be calculated in the United Kingdom of Great Britain and Northern Ireland, by reference to the scale of absolute reductions of the warm weight shown in Annex II.

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### *Article 4*

Modifications of the apparatus or of the assessment methods shall not be authorized.

### *Article 5*

This Decision is addressed to the United Kingdom.

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*ANNEX I*

**Methods for grading pig carcases in the United Kingdom (excluding Northern Ireland)**

PART I

**Intrascope (Optical Probe)**

1. Grading of pig carcases shall be carried out by means of the apparatus termed 'Intrascope (Optical Probe)'.

2. The appartus shall be equipped with a hexagonal-shaped probe of a maximum width of 12 millimetres (and of 19 millimetres at the blade at the top of the probe) containing a viewing window and a light source, a sliding barrel calibrated in millimetres, and having an operating distance of between 3 and 45 millimetres.

3. The lean meat content of the carcase shall be calculated according to one of the following two formulae:

$$\hat{y} = 64,8 - 0,69x_1 + 0,095x_2 - 0,42x_3$$

or

$$\hat{y} = 65,5 - 1,15x_1 + 0,076x_2,$$

where:

$\hat{y}$ = the estimated percentage of lean meat in the carcase,

$x_1$ = the thickness of backfat (including rind) in millimetres, measured at 6 centimetres off the midline of the carcase at the last rib (measurement known as '$P_2$'),

or

the average thickness of backfat (including rind) in millimetres measured at 4 and 7,5 centimetres respectively off the midline of the carcase at the last rib (measurement known as '½ ($P_1$ + $P_3$)'),

$x_2$ = the weight of the cold carcase in kilograms,

$x_3$ = the thickness of backfat (including rind) in millimetres, measured at 6 centimetres off the midline of the carcase, between the third and fourth last ribs (measurement known as 'rib-fat').

The two formulae shall be valid for carcases weighing between 30 and 120 kilograms.

PART 2

**Fat-O-Meater (FOM)**

1. Grading of pig carcases shall be carried out by means of the apparatus termed 'Fat-O-Meater (FOM)'

2. The apparatus shall be equipped with a probe of 6 millimetres diameter containing a photodiode of the Siemens SFH 950/960 type and having an operating distance of between 3 and 103 millimetres. The results of the measurements are converted into estimated lean meat content by means of a computer.

3. The lean meat content of the carcase shall be calculated according to the following formula:

$$\hat{y} = 59,0 - 0,58x_1 - 0,32x_3 + 0,18x_4$$

where

$\hat{y}$ = the estimated percentage of lean meat in the carcase,

$x_1$ = the thickness of backfat (including rind) in millimetres, measured at 6 centimetres off the midline of the carcase at the last rib (measurement known as '$P_2$'),

or

the average thickness of backfat (including rind) in millimetres, measured at 4 and 7,5 centimetres respectively off the midline of the carcase at the last rib (measurement known as '½ ($P_1$ + $P_3$)',

$x_3$ = the thickness of backfat (including rind) in millimetres, measured at 6 centimetres off the midline of the carcase between the third and fourth last ribs (measurement known as 'rib-fat'),

▼**B**

$x_4$ = the thickness of muscle in millimetres, measured at the same time and in the same place as $x_3$ (measurement known as 'rib-muscle').

The formula shall be valid for carcases weighing between 30 and 120 kilograms.

PART 3

**Hennessy Grading Probe (HGP II)**

1. Grading of pig carcases shall be carried out by means of the apparatus termed 'Hennessy Grading Probe (HGP II)'.

2. The apparatus shall be equipped with a probe of 5,95 millimetres diameter (and of 6,3 millimetres at the blade of the top of the probe) containing a photodiode (Siemens LED of the type LYU 260-EO and photodetector of the type 58 MR) and having an operating distance of between 0 and 120 millimetres. The results of the measurements shall be converted into estimated lean meat content by means of the HGP II itself or a computer linked to it.

3. The lean meat content of the carcase shall be calculated according to the following formula:

$$\hat{y} = 62,5 - 0,62x_1 - 0,46x_3 + 0,16x_4$$

where

$\hat{y}$ = the estimated percentage of lean meat in the carcase,

$x_1$ = the thickness of backfat (including rind) in millimetres, measured at 6 centimetres off the midline of the carcase at the last rib (measurement known as '$P_2$'),

or

the average thickness of backfat (including rind) in millimetres measured at 4 and 7,5 centimetres respectively off the midline of the carcase at the last rib (measurement known as '½ $(P_1 + P_3)$',

$x_3$ = the thickness of backfat (including rind) in millimetres, measured at 6 centimetres off the midline of the carcase between the third and fourth last ribs (measurement known as 'rib-fat'),

$x_4$ = the thickness of muscle in millimetres, measured at the same time and in the same place as $x_3$ (measurement known as 'rib-muscle').

The formula shall be valid for carcases weighing between 30 and 120 kilograms.

▼**M2**

PART 4

**CSB Ultra-Meater**

1. Grading of pig carcases shall be carried out by means of the apparatus termed 'CSB Ultra-Meater'.

2. The apparatus shall be equipped with ultrasound head, ultrasound equipment, image generating board, computer, video recorder and printer.

The apparatus shall be equipped with a Pie Medical Netherlands 3,5 MHz scanner.

The distance from the marking point to the centre of the ultrasonic head shall be 12 cm.

The results of the measurements shall be converted into estimated lean meat content by means of the CSB Ultra-Meater apparatus itself.

3. The lean meat content of the carcase should be calculated according to the following formula:

$$\hat{y} = 65,1 - 1,158x_1 + 0,176x_2$$

where:

$\hat{y}$ = the estimated percentage of lean meat in the carcase.

$x_1$ = the thickness of backfat (including rind) in millimetres, measured at 6 cm off the dorsal midline of the carcase, between the third and fourth last ribs.

$x_2$ = the thickness of muscle in millimetres, measured at the same time and in the same place as $x_1$.

▼__M2__

The formula shall be valid for carcases weighing between 30 and 120 kilograms.

▼__M6__

PART 5

**Fully automatic ultrasonic carcass grading (Autofom)**

1. Pig carcase grading shall be carried out using the apparatus termed Autofom (*Fully automatic ultrasonic carcass grading*).

2. The apparatus shall be equipped with 16 16,2 MHz ultrasonic transducers (Krautkrämer, SFK 2 NP), with an operating distance between transducers of 25 mm.

   The ultrasonic data shall comprise measurements of backfat thickness and muscle thickness.

   The results of the measurements are converted into estimated lean meat content using a computer.

3. The carcase's lean meat content shall be calculated on the basis of 108 measurement points using the following formula:

$$
\begin{aligned}
y = {}& 64{,}56076 - 0{,}011867\, x_1 - 0{,}037750\, x_2 - 0{,}013357\, x_3 - 0{,}011163\, x_4 - \\
& 0{,}021255\, x_5 - 0{,}006461\, x_6 - 0{,}016539\, x_7 - 0{,}026134\, x_8 - 0{,}011734\, x_9 - \\
& 0{,}010533\, x_{10} - 0{,}021250\, x_{11} - 0{,}011591\, x_{12} - 0{,}023174\, x_{13} - 0{,}035567\, x_{14} - \\
& 0{,}012220\, x_{15} - 0{,}010566\, x_{16} - 0{,}024556\, x_{17} - 0{,}015644\, x_{18} - 0{,}012601\, x_{19} - \\
& 0{,}024600\, x_{20} - 0{,}011233\, x_{21} - 0{,}010434\, x_{22} - 0{,}022287\, x_{23} - 0{,}015566 \\
& x_{24} + 0{,}003953\, x_{25} + 0{,}004604\, x_{26} + 0{,}004438\, x_{27} + 0{,}004865\, x_{28} - 0{,}035444 \\
& x_{29} - 0{,}022043\, x_{30} - 0{,}035690\, x_{31} - 0{,}043143\, x_{32} - 0{,}035588\, x_{33} - 0{,}034093 \\
& x_{34} - 0{,}037165\, x_{35} - 0{,}027871\, x_{36} - 0{,}029070\, x_{37} - 0{,}028929\, x_{38} - 0{,}028884 \\
& x_{39} - 0{,}028174\, x_{40} - 0{,}023148\, x_{41} - 0{,}025299\, x_{42} - 0{,}035816\, x_{43} - 0{,}044413 \\
& x_{44} - 0{,}044408\, x_{45} - 0{,}034309\, x_{46} - 0{,}029252\, x_{47} - 0{,}018420\, x_{48} - 0{,}008756 \\
& x_{49} - 0{,}012405\, x_{50} - 0{,}016834\, x_{51} - 0{,}019488\, x_{52} - 0{,}021442\, x_{53} - 0{,}023237 \\
& x_{54} - 0{,}022466\, x_{55} - 0{,}033462\, x_{56} - 0{,}031548\, x_{57} - 0{,}031020\, x_{58} - 0{,}030049 \\
& x_{59} - 0{,}029518\, x_{60} - 0{,}030063\, x_{61} - 0{,}049797\, x_{62} - 0{,}050145\, x_{63} - 0{,}049625 \\
& x_{64} - 0{,}049249\, x_{65} - 0{,}047528\, x_{66} - 0{,}045669\, x_{67} - 0{,}026058\, x_{68} - 0{,}025250 \\
& x_{69} - 0{,}023297\, x_{70} - 0{,}022976\, x_{71} - 0{,}022032\, x_{72} - 0{,}022040\, x_{73} - 0{,}015719 \\
& x_{74} - 0{,}028318\, x_{75} - 0{,}017586\, x_{76} + 0{,}007988\, x_{77} + 0{,}008649\, x_{78} + 0{,}009642 \\
& x_{79} + 0{,}009355\, x_{80} + 0{,}008768\, x_{81} + 0{,}006580\, x_{82} + 0{,}005336\, x_{83} + 0{,}008744 \\
& x_{84} + 0{,}008690\, x_{85} + 0{,}008155\, x_{86} + 0{,}008398\, x_{87} + 0{,}008496\, x_{88} + 0{,}009162 \\
& x_{89} + 0{,}009559\, x_{90} + 0{,}009805\, x_{91} + 0{,}009867\, x_{92} + 0{,}009476\, x_{93} + 0{,}008720 \\
& x_{94} + 0{,}008490\, x_{95} + 0{,}008367\, x_{96} + 0{,}008861\, x_{97} + 0{,}007226\, x_{98} + 0{,}007774 \\
& x_{99} + 0{,}008204\, x_{100} + 0{,}008142\, x_{101} + 0{,}007890\, x_{102} + 0{,}007522\, x_{103} + 0{,}008219 \\
& x_{104} + 0{,}007665\, x_{105} + 0{,}005622\, x_{106} + 0{,}008785\, x_{107} + 0{,}008284\, x_{108}
\end{aligned}
$$

where:

$y$ = the estimated lean meat content of the carcase

$x_1, x_2 \ldots x_{108}$ are the variables measured by Autofom.

4. Descriptions of the measurement points and the statistical method can be found in Part II of the United Kingdom protocol forwarded to the Commission in accordance with Article 3(3) of Regulation (EEC) No 2967/85.

   The formula shall be valid for carcases weighing between 50 and 120 kilograms.

▼**M1**

*ANNEX I A*

**Methods for grading pig carcases in Northern Ireland**

PART 1

**Intrascope (Optical Probe)**

1. Grading of pig carcases shall be carried out by means of the apparatus termed 'Intrascope (Optical Probe)'.

2. The apparatus shall be equipped with a hexagonal shaped probe of a maximum width of 12 millimetres (and of 19 millimetres at the blade at the top of the probe) containing a viewing window and a light source, a sliding barrel calibrated in millimetres and having an operating distance of between 3 and 45 millimetres.

▼**M5**

3. The lean meat content of the carcase shall be calculated according to the following formula:

$$\hat{y} = 77{,}6 - 0{,}95x_1 - 0{,}99x_2 + 0{,}03x_3$$

where:

$\hat{y}$ = the estimated percentage of lean meat in the carcase,

$x_1$ = the thickness of back-fat (including rind) in millimetres, measured six centimetres off the midline of the carcase at the last rib (measurement known as '$P_2$'),

$x_2$ = the thickness of back-fat (including rind) in millimetres, measured at six centimetres off the midline of the carcase, between the third and fourth last ribs (measurement known as 'rib-fat'),

$x_3$ = $x_2$ squared.

The formula shall be valid for carcases weighing between 60 and 86 kilograms.

▼**M1**

PART 2

**Mark II Ulster Probe**

1. Grading of pig carcases shall be carried out by means of the apparatus termed 'Mark II Ulster Probe'.

2. The apparatus shall be equipped with an oval-shaped probe of a maximum width of 11 millimetres containing an infra-red light-emitting photodiode (TFK type TS-US 5402) with a peak wave-length frequency of 950 nm and a matching infra-red photodetector (TRW Optron type OP 500) and having an operating distance of between 0 and 50 millimetres. The results of the measurements shall be converted into estimated lean mean content by means of a computer.

▼**M5**

3. The lean meat content of the carcase shall be calculated according to the following formula:

$$\hat{y} = 81{,}4 - 0{,}75x_1 - 1{,}79x_2 + 0{,}05x_3$$

where:

$\hat{y}$ = the estimated percentage of lean meat in the carcase,

$x_1$ = the thickness of back-fat (including rind) in millimetres, measured six centimetres off the midline of the carcase at the last rib (measurement known as '$P_2$'),

$x_2$ = the thickness of back-fat (including rind) in millimetres, measured at six centimetres off the midline of the carcase, between the third and fourth last ribs (measurement known as 'rib-fat'),

$x_3$ = $x_2$ squared.

The formula shall be valid for carcases weighing between 60 and 86 kilograms.

▼M5

PART 3

**Fat-O-Meater (FOM)**

1. Grading of pig carcases shall be carried out by means of the apparatus termed 'Fat-O-Meater (FOM)'.

2. The apparatus shall be equipped with a probe of six millimetres diameter containing a photodiode of the Siemens SFH 950/960 type and having an operating distance of between 3 and 103 millimetres. The results of the measurements are converted into estimated lean meat content of means of a computer.

3. The lean meat content of the carcase shall be calculated according to the following formula:

$$\hat{y} = 76,6 - 1,91x_1 - 0,39x_2 + 0,04x_3 + 0,06x_4$$

where:

$\hat{y}$ = the estimated percentage of lean meat in the carcase,

$x_1$ = the thickness of back-fat (including rind) in millimetres, measured six centimetres off the midline of the carcase at the last rib (measurement known as '$P_2$'),

$x_2$ = the thickness of back-fat (including rind) in millimetres, measured at six centimetres off the midline of the carcase, between the third and fourth last ribs (measurement known as 'rib-fat'),

$x_3$ = $x_1$ squared,

$x_4$ = the thickness of muscle in millimetres, measured at the same time and in the same place as $x_2$ (measurement known as 'rib-muscle').

The formula shall be valid for carcases weighing between 60 and 86 kilograms.

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*ANNEX II*

**Scale of reductions applicable to the weight of hot pig carcases in the United Kingdom**

*(in kilograms)*

| Carcase weight range (hot) | Deduction to be applied according to the interval between the sticking of the pig and the weighing of the carcase | | | |
|---|---|---|---|---|
| | 0 to 45 minutes | 46 to 180 minutes | 181 to 330 minutes | > 330 minutes |
| up to 56 kg | 1,0 | 0,5 | 0,5 | 0 |
| 56,5 to 74,5 kg | 1,5 | 1,0 | 0,5 | 0 |
| 75 kg and over | 2,0 | 1,5 | 0,5 | 0 |

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