Handelsübliche Verfahren bei der Reifung von Rindfleisch in Grossbritannien.

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Die M.L.C. führte 1977/78 eine Untersuchung durch über die handelsüblichen Verfahren bei der Reifung von Rindfleisch in Grossbritannien. Persönliche Interviews mit Verantwortlichen oder Führungskräften in den Schlachthäusern/Grosshandels - und Einzelhandelsfirmen, die aufgesucht wurden, lieferten die Informationen.

Zwei Hauptuntersuchungsmethoden wurden angewandt. Die eine arbeitete mit nach Schichten spezifizierten Random-Stichproben von Schlachthäusern/Grosshändlern, unabhängigen Fleischern, Fleischerei-Filialunternehmen und Supermärkten. Die andere arbeitete mit ausgewählten Stichproben aus dem Bereich der Restaurateure (Betriebskantinen, Hotels, Restaurants) und Institute (Schulen, Krankenhäuser, militärische Anstalten). Auch wurde versucht, etwas über den Tiefkühlmarkt zu erfahren.

Trotz recht verschiedener Antworten ergab sich ein allgemeines Bild über die Länge der Zeitspanne zwischen dem Schlachten und dem Verkauf von Rindfleisch. Es zeigt die vielen verschiedenen Absatzwege auf, die es in Grossbritannien zwischen dem Schlachthof und dem Endverbraucher gibt.

Das Bild ist ein Ausdruck sich widersprechender Verhaltensweisen hinsichtlich dessen, was als wünschenswert und dessen, was als geschäftlich interessant angesehen wird. Geschäftliche Erwägungen, wie Tiefkühlkosten und vor allem hohe Umsatzziffern, bedeuten, dass viele Firmen, die versucht haben, Reifungszeiten vorzuschreiben, nicht in der Lage gewesen sind, diese einzuhalten.

Commercial practices for the conditioning of beef in Great Britain

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A survey was carried out by the M.L.C. during 1977/78, on commercial practices for the conditioning (ageing) of beef in Great Britain. Information was obtained from personal interviews with those in control or in decision making positions in the abattoir/wholesale and retail firms visited.

Two main types of survey were involved. One type used stratified random samples of abattoir/wholesalers, independent butchers, multiple butchers and supermarkets. The other type used selected samples of caterers (industrial/hotels/restaurants), and institutions (schools, hospitals and military bases). An attempt was also made to look at the freezer market.

Despite a wide variety of answers a general picture has emerged about the length of time beef is held between slaughter and sale. This reflects the many different distribution channels that exist between the abattoir and the final consumer in Great Britain.

The picture is one of conflicting behaviour, between what is seen as desirable and what is of commercial interest. Commercial considerations such as the cost of refrigeration and, most important, high turnover, means that many firms who tried to specify ageing times were unable to adhere to these.

La pratique commerciale de la maturation de la viande de boeuf en Grande-Bretagne

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Une étude a été faite par la M.L.C. en 1977-78 sur la pratique commerciale de la maturation de la viande de boeuf en Grande-Bretagne. Des renseignements ont été obtenus grâce à des entrevues avec des responsables de sociétés d'abattage et de vente en gros et de sociétés de vente au détail.

On a fait des études de deux types. L'un utilise des échantillons aléatoires stratifiés provenant des abattoirs et marchands en gros, des boucheries indépendantes, des boucheries multiples et des supermarchés. L'autre utilise des échantillons sélectionnés dans la restauration professionalle (restauration industrielle, hôtels, restaurants) et dans les cantines (écoles, hôpitaux et bases militaires). Une tentative a été faite pour étudier le marché de la viande congelée.

En dépit de la grande diversité des réponses, on a pu se faire une idée générale du délai entre l'abattage et la vente, qui met en évidence les nombreux circuits de distribution existant entre l'abattoir et le consommatateur en Grande-Bretagne.

On en retire une impression de conflit entre ce qui est ressenti comme souhaitable et ce qui présente un intérêt commercial. Les considérations commerciales telles que le coût de la réfrigération et surtout le débit ont pour conséquence que bien des sociétés qui ont essayé de fixer des délais de maturation ont été incapables de les tenir.

Торговая практика в отношении созревание мяса в Великобритании

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В течение 1977-78 годов Комиссия провела обзор торговых приемов по отношению к созреванию говядины в Великобритании. Данные были получены в результате личных опросов ответственных или заведеющих лиц в посещенных скотобойнях и предприятиях оптовой и розничной торговли.

Использовано было два вида обследований. Одн состоял в типическом районированном случайном отборе у скотобоен, оптовиков, независимых мясников, многолавок и болших магазинах самообслуживания. Другой вид основывался на выборочном отборе у предприятий обслуживания (заводские столовые, гостиницы, рестораны) и у общественных учреждениях (школы, больницы, военные базы). Были сделаны также попытки обследования торговой морозильной техники.

Несмотря на большое разнообразие ответов обрисовалась общая картина продолжительности выдержки говядины от момента убоя скота до момента продажи ее потребителю. Это отражает большое разнообразие в Великобритании путей распределения продукта между скотобойней и конечным потребителем.

Картина в основном представляет конфликт между тем, что желательно, и тем, что коммерчески выгодно. Такие торговые соображения, как стомость искусственного охлаждения, и что еще важнее, повышение товарооборота, выражаются в том, что даже те предприятия, которые желали бы специфицировать продолжительности периодов созревания, не в состоянии придерживаться этих периодов.

Commercial practices for the conditioning of beef in Great Britain

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A survey was carried out by the M.L.C. during 1977/78, on the commercial practices for the conditioning of beef in Great Britain. Information was obtained from personal interviews with those in control or in decision making positions in the firms visited. These firms consisted of stratified random samples of abattoir/wholesalers, independent butchers (under 10 shops), multiple butchers (10 shops and over) and supermarkets.

1. Conditioning at the abattoir/wholesale level

The response to the survey at the abattoir/wholesale level was very good, and 87% of the abattoirs contacted provided information. The final sample was 17.1% of the population of 445 Private and Public/Private Slaughterhouses (these are M.L.C. terms classifying ownership, they exclude Public abattoirs not wholly operated by one company) slaughtering over 1000 cattle per annum. These abattoirs accounted for over 90% of the total number of cattle slaughtered in Great Britain (in private and public/private abattoirs) in 1975/76. The total throughput of the sample of 76 abattoirs was 982,500 cattle, and the answers to the questions can be presented as percentages of this total.

Despite the wide variety of these answers, a general pattern has emerged about the length of time beef is held at the abattoir/wholesale level before despatch.

Period beef is held after slaughter

Tables 1 and 2 show that 74% of beef entered a chiller between 0 to 2 hours of slaughter,and 66% was held 1 to 2 days before despatch. Abattoirs that were vacuum packing seemed to have a faster througput than those that were not.

Table 1 Length of time beef is held after slaughter before entering a chiller at all abattoirs

	0-2 hours	3-4 hours	5-12 hours	Longer
% number of abattoirs	57.1	15.8	16.9	10.4
% throughput	74.0	16.9	6.4	2.7

Of the 76 abattoirs in the study, 57 did not vacuum pack beef at all and 19 did. These two groups accounted for 52.82%and 47.18%of througput respectively (although not all of the latter was vacuum packed beef). 71% of beef that was vacuum packed was despatched within 3 days of slaughter.

Table 2 Length of time beef is held after entering a chiller before despatch and distribution

		All abattoirs		Abattoirs vacuum packing	
		% number	% throughput	% number	% throughput
Distributed/despatched	same day	6.3	8.5	5.0	10.8
	1 - 2 days	56.2	66.2	70.0	75.4
	3 - 4 days	33.7	20.6	15.0	4.6
	5 - 6 days	3.8	4.7	10.0	9.2

Amount of beef sold in various forms

When asked what percentage of beef they sold in various forms, the sample of abattoirs said 37.5% was sold as fresh/chilled sides, 24.6% as fresh/chilled quarters, 19.1% as fresh/chilled bone in primals, 0.2% as frozen bone in primals, 17.3% as fresh/chilled vacuum packed and 1.3% as frozen vacuum packed. These answers were given in the form of percentage groupings,such as 40-59% of beef being sold as sides. The throughputs were derived by combining them with the actual total throughput figures for each abattoir.

Of the beef frozen, 86.3% was frozen 1 to 2 days after slaughter.

Information given on conditioning

Of the abattoirs visited 90% said that their customers rarely if ever asked about the date of slaughter, and 91% said that a conditioning period for the beef they sold was rarely if ever specified. But 17% of all the abattoirs, with 20% of total throughput (and 21% of those vacuum packing with 30% of the total throughput of those abattoirs vacuum packing) said that they did record the date of slaughter on either invoices that were despatched with the meat and/or packings and/or labels. Unfortunately 54% of these had said in answer to a previous question that their customers never asked for the date of slaughter. Similarly of the 60% of abattoirs that never recorded the date of slaughter on meat invoice/ labels/packages, 33.3% of them had in answer to a previous question said that their customers did ask about the date of slaughter.

2. Conditioning at the retail level

Response to the survey at the retail level was nearly 100%. The sample consisted of 297 independent butchers (from a population of approximately 23,000 with 25,000 retail outlets), 21 multiple butchers (owning an estimated 56% of multiple outlets) and 8 supermarkets (from the 30 groups that owned 80% of supermarket outlets in Great Britain).

An even wider variety of answers than those given by abattoirs was received from these firms. This variety reflects the many different distribution channels that exist between the abattoir and the final consumer in Great Britain. Actual throughput figures were very difficult to obtain for these groups and the information collected has to be presented as the number/ percentage of firms giving different responses to questions.

Amount of beef received in various forms

The percentage of beef received in various forms shown in Table 3, compares favourably with the percentages sold by abattoirs, if it is remembered that the abattoirs also supplied catering, institutional and deep freeze outlets, as well as meat processors. These latter outlets, it is expected take more bone in primals, vacuum packs and portion control beef than the other retail outlets. Independent butchers for example as Table 3 shows, are still more prone to purchase sides and quarters than any other form of beef, whilst multiple butchers and supermarkets tend to take more of their beef in bone in primal and boneless vacuum pack form.

Table 3 Percentage of independent butchers, multiple butchers and supermarkets receiving supplies of beef in various forms

		Independents	Multiples	Supermarkets
Sides	Fresh/chilled	83.8**	71.4*	62.5
Quarters	Fresh/chilled	75.8*	42.9	75.0
	Frozen	2.0	-	-
Bone in primals	Fresh/chilled	18.5	33.3	75.0
	Frozen	-	-	12.5
Boneless Vacuum pack	Fresh/Chilled	11.9	42.9	62.5
	Frozen	2.0	4.8	-
Prepared (portion control) cuts	Fresh/Chilled	-	-	25.0
	Frozen	-	-	12.5

** Formed more than 80% of total supplies for 70% or more of these firms
* Formed more than 40% of total supplies for 70% or more of these firms

Frequency of delivery and supplies of beef stored

Beef seems to be delivered more frequently to the multiple butchers and the supermarkets than to the independent butchers. Of the independent butchers taking beef in various forms, 14% had sides delivered daily, 20% had quarters delivered daily, 14% had bone in primals delivered daily, and 5% had vacuum packs delivered daily. For the multiples and supermarkets these figures were higher with 27% and 20% respectively having sides delivered daily, 22% and 17% quarters, 57% and 33% bone in primals, and 56% and 20% having vacuum packs delivered daily.

At first sight this would suggest that the multiple butchers and supermarkets had a faster turnover than the independents. This is not necessarily the case however, as in many cases this beef is being delivered to central distribution units instead of straight to the retail outlet. Such units were owned by 67% of the multiple butchers and 63% of the supermarkets, although not all of the beef sold passed through them (sometimes they were not used at all, or used only for certain types of meat, such as prepared/portion control cuts). Only one of the firms visited, a supermarket, operated a completely centralised deboning, cutting, pre-packing distribution unit.

There did not seem to be any standard length of storage time at these depots. Of the multiple butchers with a central distribution unit, 21 % stored beef in a chiller on average for 1 to 2 days, 43% of multiples and 20% of supermarkets stored it for 3 to 4 days, 14% of multiples stored it 7 to 8 days and 20% of supermarkets stored it longer than this. Another 40% of supermarkets, said that although they had such units, they did not use them. All admitted that commercial pressures could frequently reduce or more occasionally extend this storage time.

Table 4 shows the number of days supply of fresh/chilled beef in a chiller at retail outlets, and seems to support the earlier view that multiple butchers and supermarkets have in general a faster turnover than independent butchers.

Table 4 Number of days supply of fresh/chilled beef stored on average in a chiller at the retail outlet.

		Independent butchers	Multiple butchers	Supermarkets
% within each group	1 - 2 days	9.9	11.8	50.0
	3 - 4 days	18.0	53.0	33.3
	5 - 6 days	18.0	17.6	16.7
	7 - 8 days	39.6	17.6	-
	More	14.5	-	-

Information received on conditioning

In view of the percentages given by abattoirs on conditioning, the claim that 74% of independent butchers, 71% of multiple butchers and 88% of supermarkets, knew the date of slaughter of the fresh/chilled beef they purchased, seems rather high. Table 5, does show that many of these claims were based on a second hand knowledge of age (such as 'tell by experience').

Table 5 Response of the independent butchers, multiple butchers and supermarkets (who said that they knew the date of slaughter of the fresh/chilled beef they purchased) to how they knew.

	Independents %	Multiples %	Supermarkets %
Verbal date given by deliveryman/abattoir, or liaison with abattoir	5.9	20.0	57.1
Date of kill marked on meat	5.4	13.3	-
Date of kill marked on invoice/ticket/package	9.9	33.3	14.3
Tell by experience	29.3	13.4	28.6
Buys direct from farm or auction market or own cattle slaughtered at local abattoir	19.8	-	-
Knows date of slaughter at local abattoir	15.8	-	-
Slaughters own cattle	11.3	6.7	-
Buys specially treated meat	1.8	13.3	-
No reply	0.8	-	-

Many of the multiple butchers and supermarkets claimed a first hand knowledge (such as, 'date of kill marked on the meat') that was seemingly contrary to the information the abattoirs said that they gave. Only 17% of abattoirs for example actually recorded the date of slaughter on invoice/labels/packages.

It would appear from this that the buyers of beef, especially the multiples and supermarkets seem to keep a closer watch (through liaison with the supplier and by inspection) on the age of the carcases being sold to them than most abattoirs realise. The gathering of first hand knowledge on age is made much easier when good relations exist between the buyer and the supplier, or when the buyer is purchasing animals from a wholly owned or associated company. Alternatively, a high number of the independent butchers (20%), still gain such first hand knowledge by purchasing animals from farms or auction markets and either slaughtering these animals themselves or at the local abattoir.

Of the independent butchers that said they knew the date of slaughter, 88% said that sides and quarters were between 1 to 4 days old when delivered. For bone in primals and vacuum packed meat 51% and 40% respectively fell into these groups. Of the multiple butchers and supermarkets, 86% and 100% said that sides and quarters fell into the 1 to 4 days groups respectively, 75% and 100% for bone in primals and 53% and 50% for vacuum packs. A large number of independents (27%) and multiples (14%) said that vacuum packed meat was older than 9 to 10 days when delivered. No explanation can be given for this, except perhaps that these firms were only expressing a second hand knowledge of age, and so tended to err on the side of longevity with vacuum packs.

Conditioning that took place

Again in view of evidence from the abattoirs, a surprisingly large number of independent butchers (20%), said that they specified an ageing period at the wholesale level for the beef that was supplied whilst only 10% of the multiple butchers said that they specified such a period. For supermarkets the figure was 38%, although the term wholesale level here was slightly confused with the existence of central distribution units. At such units the ageing period was often not a specific period during which beef was primarily aged, but a variable length of time dependent on the progress of beef through the distributive system. This time could often be shortened by commercial pressures.

When asked if they specified an ageing period at the retail level, 83% of the independent butchers, 48% of the multiple butchers, and 63% of the supermarkets said that they did, although they all found it often impossible to keep to this period.

Table 6, shows the average time that these retailers kept beef before sale. It can be seen that with the independent and multiple butchers although some sides, quarters and primal beef is cut the same day as it is delivered, a larger percentage falls into the 1 to 4 days groups. The independent butchers seemed in general to keep their beef longer before cutting, and there is a vague indication that hindquarter beef is kept longer than forequarter beef before it is cut.

Little beef seems to have been sold on the same day as it was cut or after 1 to 2 days, except in supermarkets. Most was sold during 3 to 6 days, and a surprising percentage was sold 7 to 8 days after cutting.

Table 6 Average length of time elapsed after delivery to the retail outlet before fresh/chilled beef (sides, quarters and primals) is cut, and (in brackets) after starting to cut before it is completely sold.

	Independent butchers		Multiple butchers		Supermarkets	
	Fore Qtr.	Hind Qtr.	Fore Qtr.	Hind Qtr.	Fore Qtr.	Hind Qtr.
% within each group						
Same day	15.4(2.5)	9.1(3.7)	23.8(5.3)	4.8(5.3)	- -	- -
1 to 2 days	28.6(20.2)	16.3(22.0)	52.4(5.3)	47.6(5.3)	75.0(50.0)	75.0(37.5)
3 to 4 days	21.9(26.7)	20.8(24.0)	14.3(31.5)	23.8(31.5)	12.5(37.5)	12.5(37.5)
5 to 6 days	11.5(33.9)	18.1(34.5)	4.8(36.8)	9.5(31.5)	- -	- (12.5)
7 to 8 days	16.7(14.0)	25.1(13.0)	4.7(15.8)	9.5(15.8)	12.5(12.5)	12.5(12.5)
9 to 10 days	4.2(2.0)	5.9(1.8)	- -	4.8(5.3)	- -	- -
Longer	1.7(0.7)	4.7(1.0)	- (5.3)	- (5.3)	- -	- -

When asked what they considered to be the desired ageing period for beef after it entered the retail outlet, 47% of the independent and multiple butchers and 38% of the supermarkets said it should be aged for periods of 9 - 10 days or longer. If the 7 to 8 days ageing range is included, these percentages go up to 78% for independents, 68% for multiples and 50% for supermarkets.

3. Conclusions

There seems to be a general awareness within the meat industry in Great Britain that conditioning practices have an important effect on the eating quality of beef. Unfortunately this awareness is in many cases tempered by a resignation on the part of many firms as commercial reasons prevent them from ageing beef for as long as they would like. A dichotomy of conflicting behaviours exists between what is seen as desirable and what is of commercial interest.

Many of the retail outlets see an ageing period for fresh/chilled beef longer than 7 to 8 days after delivery as desirable (at least 14 days for excellence). In many cases however, this is usually limited for commercial reasons, to well under 7 to 8 days, especially for forequarter beef. These commercial reasons are most probably to do with the increasing cost of refrigeration linked with the limited storage facilities at the retail outlets, and most important the need throughout the industry for a high and therefore fast turnover in order to maintain financial viability.

This fast turnover is seen at the abattoir and at the retail level, where the multiple butchers and the supermarkets seem to have in many cases a faster turnover of meat than the independent butchers. From this it would seem in general that if the consumer wants to purchase well aged beef, the traditional independent butcher is still a good choice.

Unfortunately today increasing numbers of even the independent butchers are having to abandon their longer ageing policies in favour of a faster turnover. Even where abattoirs and retailers had specific ageing policies, they admitted that today these were not rigidly adhered to.

The change towards such shorter ageing periods is not the result of conscious decision, but rather the result of commercial pressures. If a change back to well aged beef is required it too will have to be bought about by commercial pressure. In other words, the price at all levels will have to reflect more closely than it does today, the eating quality of the beef.