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Beef carcase classification 'turns the corner'

By M. F. Bond*

The fluctuating fortunes of the Australian beef cattle industry during the past few years have brought forth various proposals for increasing the efficiency of production and for introducing alternative marketing systems. The proponents of these changes have generally recognised the need for one basic prerequisite—a clear, objective description of each carcase, the article that is being traded. For the past three years, the Department of Agriculture has been developing and testing, as a major project, a system that provides such an objective description of each carcase.

Information flow

The carcase classification system essentially is a mechanism for sending information from the consumer back along the marketing chain to the producer. The carcase is the most important link in the chain because it is possible to identify the producer of each. Also at the carcase stage it is possible to get a good indication of the most suitable end-use, for example a particular local market or export market.

The classification information tag, showing its attachment to the carcase.

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Through the carcase classification system, a few standard measurements (at present age, sex, fatness and weight) are made on each carcase at the abattoir. These measurements can be used to sort carcases, and direct them to the most appropriate markets.

If the price is related to the classification measurements, the producer will know whether or not he is turning off the type of animals the markets require. This does not necessarily mean that all producers should be turning off carcases of the same classification—Australia’s beef markets require a wide variety of carcase types. But each producer can turn off the type of carcase that gives the best nett return and which best suits the particular environment and type of management. The most important expectation is that the producer will be paid for what he produces, according to the market requirements.

The introduction of a carcase classification system will not alter the basic pressures of supply and demand. If a market requires a certain type of carcase which is in short supply, the price will rise, and vice versa.

At present most producers who sell cattle do not receive adequate information about the suitability or acceptability of the end product. One important reason is that when cattle are sold “on-the-hoof” it is often impossible to judge precisely the types of carcase they will yield. The livestock buyer is forced to take a “stab in the dark”, and the price is usually based on an eyeball assessment of the average value of a mob. Unless the producer is well known to the buyer, there is generally no premium paid for quality.

There also has been a tendency for buyers to discriminate against some of the recently-introduced breeds which are later-maturing. Generally, Zebu types look thinner than they are, and European breeds, fatter than they are. Because of this trait, buyers have been particularly wary of being caught with a line of under-finished cattle, of the newer European breeds, for example.

This problem is resolved when the cattle are sold on the basis of classification measurements. The producer either receives top price if the carcases meet the market requirements, or is penalised if they are unsuitable. In the latter case he is immediately made aware of the problem, and can adjust his management to rectify the situation.

Once a carcase classification information system is established, it is possible to introduce additional features which can benefit the industry. Information about bruising, pregnancy status, disease conditions, carcase dressing procedures, etc. can be recorded and passed back to the producer at minimal cost.

Development of manual beef classification

In Australia, producers, researchers and industry representatives have discussed the feasibility of an objective beef carcase classification system for the past ten years. When the beef industry experienced a serious recession during the mid-seventies, one of the Federal Government’s responses was to allocate $6 million for the development of a beef carcase classification system. Carcase classification was mistakenly hailed by some as a magical “cure-all” for the problems besetting the industry at the time.

These unreasonable expectations placed considerable pressure on the Australian Meat and Livestock Corporation. It was decided to implement trials with semi-automated classification equipment. The trials were unsuccessful, due mainly to the failure of the available equipment to withstand the harsh conditions of a beef slaughter floor.

Early in 1978, the Western Australian Department of Agriculture developed a manual objective system of beef carcase classification. This system was under trial for nine months at the Midland abattoir, starting in April 1978, using a grant of $30,000 from the W.A. Government.

Subsequently similar trials were extended to the Broome and Linley Valley abattoirs. For the first time in Australia, commercial use of classification information was made at the Linley Valley works, when Wesfarmers issued a weekly price schedule, based on classification data.

In January 1979, the Australian Agricultural Council recommended grants totalling $590,000 to assist in trials of manual beef classification. This money was to be drawn from the original $6 million allocation. Because of its more-advanced stage of trials, Western Australia was provided with a special grant to extend beef classification throughout the State.

The large-scale manual trials started in Western Australia in June 1979, and are due to finish at the end of 1980.

At present fourteen abattoirs, including all export works, are participating, and 91 per cent of the State’s cattle kill is being classified as a routine.

Classification procedures

Two major advantages of the manual classification system are its flexibility and simplicity. At the abattoir, four standard measurements are taken for each carcase—

- age (dentition)
- sex
- fatness
- weight

The few simple tasks involved in the classification procedure are often done by one or two women employed by the abattoir. At some smaller works it has been possible to use the existing labour force to do the classification. During the trials, the costs of the additional labour are being met by the Commonwealth grant.

The location of the classifiers along the slaughter chain varies according to the floor layout and labour allocation. However, the measurements are always taken using the standard procedures. The classification information is recorded on a specially-designed waterproof carcase ticket and also on several copies of the weight.
At the present time, the carcass information is provided as the actual measurements, that is millimetres of fat and kilograms of carcass weight. There is no attempt by the Department to group this data into categories or classes. It seems likely that industry eventually will develop some groupings, based on commercial requirements.

A section through the measured area.

Measuring the fat depth.

Accuracy of measurements
The accuracy of the classification measurements is particularly important when they form the basis of the price paid for a carcass. As an impartial body, the Department of Agriculture has accepted responsibility for ensuring that the classification information is correct.

Each classifier is trained by the Department, following the standard procedures laid down in a handbook. The Department’s field supervisors carry out random checks at each abattoir, at least once a week. The supervisors follow a standard monitoring procedure and the performance of every classifier is recorded.

The fat measurement is especially important. The following levels of accuracy are accepted:

<table>
<thead>
<tr>
<th>Fat Range</th>
<th>Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 3 mm</td>
<td>± 1 mm</td>
</tr>
<tr>
<td>4 to 7 mm</td>
<td>± 2 mm</td>
</tr>
<tr>
<td>8 to 11 mm</td>
<td>± 3 mm</td>
</tr>
<tr>
<td>greater than 11 mm</td>
<td>± 4 mm</td>
</tr>
</tbody>
</table>

Statistical analysis of the results for all classifiers in this State indicate that at least 97 per cent of all fat measurements are within these limits.

At some abattoirs where mechanical hide-pullers are used, a small proportion of carcasses have the fat damaged at the measurement site. Following several studies of fat distribution in carcasses, an alternative measurement site probably will be used when the loin area is damaged.

Costs of classification
The Western Australian trials have demonstrated that the total extra costs incurred at the abattoir are approximately 40 cents per carcass. This represents a small fraction of the total value of each carcass. At the conclusion of the trials, a detailed economic evaluation will be carried out; this will include a thorough examination of all cost areas. The question of on-going financial arrangements is being considered by Governments and industry organisations.

Uses of classification
During the trials, it has become apparent that the uses of the classification system are not confined to one particular sector of industry. Also, the degree of usefulness varies, according to the commercial operation of an individual producer, processor, wholesaler or retailer.

The system provides producers with more precise information about the product they are turning off. The information can be utilised by most producers to adjust their beef management in various ways:

- Changing the age of cattle turned off.
- Altering the level of nutrition.
- Introducing new breed types.
- Making decisions about castration or spaying.

Because the producer can receive rapid feedback of carcass data, it is possible for him to become skilled at relating carcass characteristics to his live animals. Once he is able to do this the producer can compare prices offered by different processors. He then has a better indication of the selling price, before the animals leave the paddock.

In addition to age, sex, fatness and weight for each animal, the producer’s copy of the weight sheet also shows the dressing procedure used and percentage “shrink” deducted from the actual hot weight. These factors can alter the carcass weight by as much as 8 per cent, and must be taken into account when comparing prices.

When producers have the financial incentive to turn off the type of animals the market requires, processors should receive fewer unsuitable carcasses. Those carcasses which are unsuitable will be priced accordingly.

Already several processors are using carcass classification to monitor the performance of their buyers, including auction purchases.
Other uses include sorting carcases into the boning room to achieve a certain level of fat in the final boneless meat product, improved quality control, and more accurate stock control.

Some wholesalers and retailers are starting to appreciate the convenience of specifying carcase parameters, such as fatness and age, when ordering. Retailers who prefer heavier carcases which yield more saleable meat, can now know the age of each.

Future development
The perfect carcase classification system will provide an accurate carcase description which can be used with complete confidence for “sight unseen” trading.

The present measurements of age, sex, fatness and weight give a good indication of both the quality and yield of saleable meat. However, the inclusion of additional carcase parameters such as fat colour, meat colour and fat distribution are now being investigated.

Technological innovations such as electrical stimulation will greatly improve the eating quality of meat. Because this will affect the value of a carcase, this type of special processing also should be recorded in the classification system.

One of the most exciting long-term developments made possible by effective classification is the introduction of new marketing systems.

The increasing use of direct consignment sales and carcase auction are only two of many possibilities, including the development of electronic auction systems.

With the increasing availability of microprocessors it will be possible to further process the raw classification data, to provide percentage yields, etc. One Western Australian abattoir plans to install a keyboard and automatic weighing equipment early in 1981. This will enable most of the clerical tasks to be done automatically, and reports printed as each lot of cattle is processed.

How to get the most out of classification
With the introduction of manual carcase classification trials at abattoirs throughout the State, Western Australian beef producers now have a unique opportunity to evaluate the usefulness of the system. The only practical way to do this is to sell some cattle on a “weight and classification” basis—that is, actually use the system.

Selling by classification is very similar to selling cattle “weight and grade”. Producers should contact the companies which are buying on the basis of classification, to obtain quotes.

It is important to be able to assess the condition of the live animals, and it may be wise to obtain some help with this. The new blue classification tail tags are available from Department advisers. The tags are applied just before the cattle are sent to the abattoir, and enable the carcase measurements for individual animals to be sent back to the producer.

Live animal assessments
Producers who are unsure of their “on-the-hoof” assessments should first consign a small number by classification. The blue tail tags should be used to check on the producer’s estimate of the condition score and carcase weight. During the classification trials, the Department would like to hear of producers’ experience with the system. Any queries should be directed either to your local advisers or the Carcase Classification Section, South Perth.