Attitudes of farmers towards Limousin cattle and their handling

X Boivin*[†], L Marcantognini[†], P Boulesteix[‡], J Godet[§], A Brulé[#] and I Veissier[†]

[†] INRA UR1213, Unité de Recherches sur les Herbivores, Equipe Adaptation et Comportement Sociaux. F-63122 Saint-Genés Champanelle, France
[‡] France Limousin Sélection, Pôle de Lanaud, 87220 Boisseuil, France
[§] ISARA Lyon, 31, Place Bellecour. 69288 Lyon, France
[#] Institut de l'Elevage, 35652 Le Rheu, France
* Contact for correspondence and requests for reprints: xavier@clermont.inra.fr

Abstract

Farmers' behaviour towards their animals could be improved by developing training programmes designed to decrease handling stress and improve animal welfare. This requires key preliminary work to collate farmers' beliefs concerning beef cattle and their knowledge of how to handle them easily. This paper reports the preliminary results of a survey conducted in 2004 among Limousin farmers. Fifty-five percent of the 300 French beef cattle farmers surveyed returned a questionnaire covering ease of handling, husbandry conditions, attitudes towards cattle, and behaviour during handling and husbandry practices. The results revealed that farmers' attitudes were generally positive. However, variability within each item indicated the potential for improvement. Temperament of heifers or cows is the first trait considered in decisions on culling an animal. Principal Component Analysis (PCA) showed a relationship between positive attitudes towards animals and towards contact with the animals. Attitudes towards negative behaviour (hitting, shouting) during handling are independent of attitudes towards animals. Most farmers underline human contact followed by quality of the facilities for improving ease of handling. Surprisingly, 28% of the farmers surveyed did not recognise the genetic traits as an important factor in ease of handling. Farmers seem open to improving handling, in particular through positive human contact. These results combined with existing scientific knowledge and additional observations of handling will be useful in defining future training programmes for improving the welfare of beef cattle.

Keywords: animal welfare, attitudes, cattle, farmers, handling, human-animal relationship

Introduction

European husbandry conditions for beef cattle are changing considerably with increasing herd sizes and changes in husbandry practices and reducing time spent in contact with the animals. Experimental studies indicate that these changes represent potential sources of fear reactions by cattle to humans, which could consequently affect welfare and production (Boivin *et al* 2003; Hemsworth 2003). However, to date, there have been no on-farm studies exploring the variability of these husbandry conditions in relation to farmers' attitudes towards animals and handling. This information is nevertheless essential to the development of training programmes designed to improve farmers' behaviour towards their animals and thus improve animal welfare (Hemsworth 2003). This paper reports the preliminary results of a questionnaire covering these aspects sent to France Limousin Selection, the farmers' association for the second most common beef breed in France, describing 1) the main husbandry conditions of French Limousin cattle (herd sizes, housing, work-hours spent by farmers on husbandry, etc) and 2) French beef farmers' attitudes

towards cattle, ease of handling and appropriate handling behaviour, and ways to improve ease of handling.

Materials and methods

Farmers' population

In 2004, all the members (300) of France Limousin Selection were mailed a four-page questionnaire. This farmer population covered the whole French territory. These farmers had brought 9-month-old calves for testing in the genetic bull testing station (Lanaud, France). These calves had previously been identified by independent technicians, according to phenotypic standards of the Limousin breed.

Questionnaire design

The four-page questionnaire was adapted from the studies of Lensink *et al* (2000) and Waiblinger *et al* (2002) and constructed with the help of a panel of experts (animal scientists, cattle handling trainers, sociologists). The prototype of this questionnaire was tested for clarity, easiness and interest with a sample of 10 Limousin farmers. The questionnaires were sent with an attached letter

Table 1   Attitudes towards cattle among French Limousin farmers (n = 125). Percentage agreements with expression.

	Fully disagree	Disagree	Partially disagree	Partially agree	Agree	Fully agree
Cattle have memory (memor)	1	1	2	16	27	54
Cattle recognise their caretaker (recog)	0	0	0	4	18	78
Cattle are sensitive to shouting (sshout)	1	1	2	16	27	54
Cattle are dangerous (dang)	7	16	28	28	11	10
Cattle respond well to human contact (hcont)	1	2	9	32	27	29
Cattle are intelligent (intel)	2	6	11	31	26	25
Cattle are relatively insensitive to pain (spain)	32	33	15	9	7	5
Cattle are easy to handle (easy)	2	6	21	44	21	7

Table 2   Attitudes towards handling behaviour. Percentage agreements with expression.

	Fully disagree	Disagree	Partially disagree	Partially agree	Agree	Fully agree
Talking to the cows (talk))	7	0	0	9	16	74
Calling the cows by their name (name)	8	6	14	30	26	18
Increasing voice levels to be obeyed (voice)	27	17	13	14	10	15
Touching/petting the cows (touch)	1	2	2	18	27	51
Hitting the cow to be obeyed (hit)	39	19	18	12	7	3

explaining that we were surveying farmers' expertise in order to improve on-farm work (comfort, time saving) during beef cattle handling. They were to be filled in by the main cattle caretaker. We specified that all data would be processed and published anonymously, and that the farmers would have access to the results at the end of the study.

Statistical analyses

Tie stalls and outdoor conditions were rarely present in our sample of farms. Therefore, to avoid possible bias due to housing systems, we only ran statistical analyses on farms with loose housing systems (n = 125). PCA analyses (SAS/STAT 1999) were used to correlate different attitude variables. Variables with too little variability were not considered ('talk' and 'recog'; Tables 1 and 2). Classes with 5% or less answers were grouped together. Variables showing correlation above 0.5 with a component axis were considered as mainly determining the meaning of the axis.

Results

Farm characteristics

163 farmers (55% of the study population) returned their questionnaire. 30% stated that over 90% of the work was devoted to beef cattle husbandry. More than 50% declared they had a concomitant activity and 13% spent less than 50% of their time in beef cattle husbandry. Average herd size was 64.8 ± 30.1 cows. 50% of the farms had less than 40 cows while 15% had more than 100. 1/3 of the farms had 30 cows per worker unit, 1/3 had 30-50 cows, and 1/3 had over 50. Finally, 90% of the farms mainly housed cows in a free stable during the winter period (possibly combined with another housing system).

Attitudes toward beef cattle, ease of handling and possible methods of improvement

### *Attitudes towards cattle*

The vast majority of French Limousin farmers showed positive attitudes towards their animals (see Table 1). Farmers considered the animals as intelligent (82% at least partially agreed) and having good memory (54% fully agreed), while 78% fully agreed that cattle recognise their caretaker. Nevertheless, although 88% at least partially agreed that cattle enjoy human contact, only 29% fully agreed, showing variability in attitude concerning the perception of human contact. Furthermore, 21% at least partially agreed that cattle are relatively insensitive to pain.

A large majority of farmers (72%) at least partially agreed that cattle are easy to handle (Table 1). However, only 7% fully agreed, and there were still 29% who at least partially disagreed. 49% of the farmers at least partially agreed that cattle are dangerous, with 10% fully agreeing with this statement.

Attitudes toward handlers' behaviour

Only 74% of the farmers fully agreed that talking is appropriate during handling (see Table 2), while 7% fully disagreed. A majority (73%) at least partially agreed that it was appropriate to call animals by their names, although only 18% fully agreed with this statement. Most farmers believed it was appropriate to touch the animals but only

Figure 1

Main criteria for Limousin farmers in the decision to cull a cow or heifer.
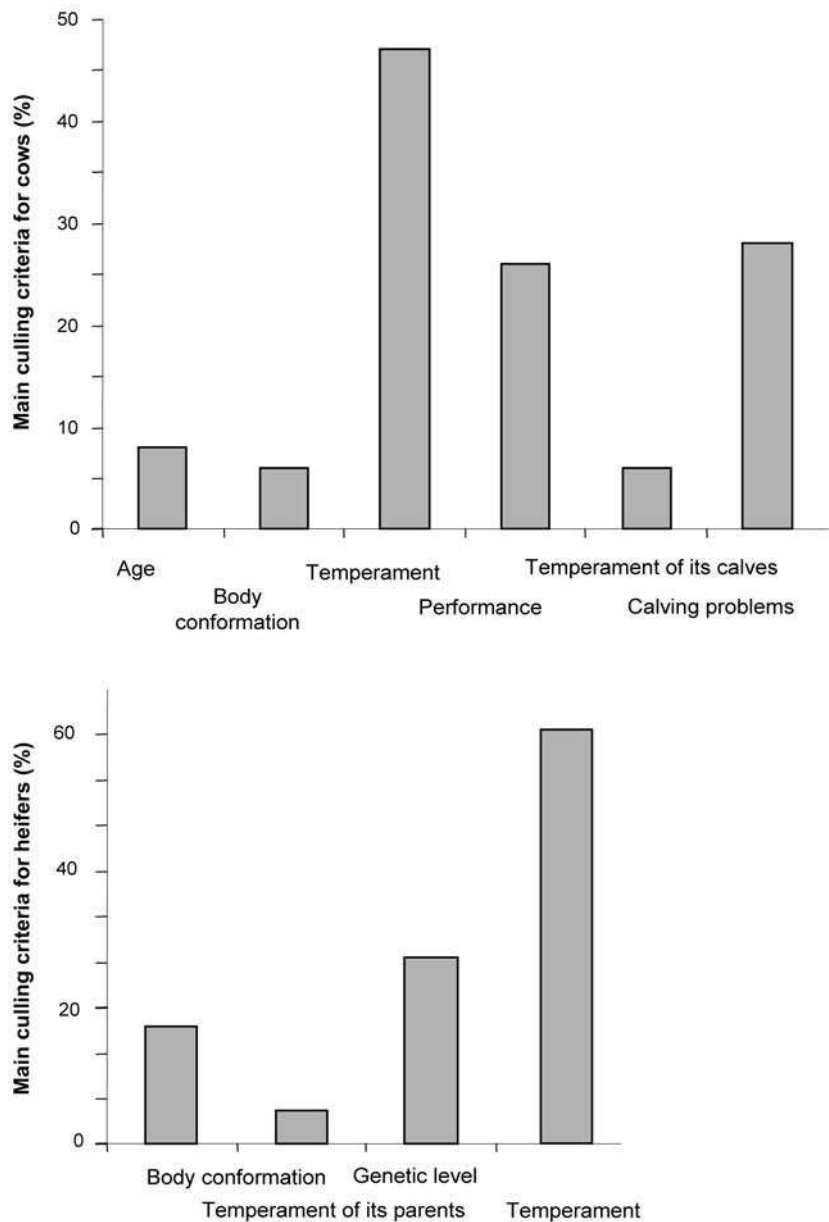
51% found it fully appropriate. In contrast, 42% at least partially agreed that it was appropriate to speak loudly to be obeyed, but only 18% fully agreed while 27% fully disagreed. 23% at least partially agreed that it was appropriate to hit the animals (4% fully agreed) while 39% fully disagreed with this statement.

Attitudes towards ease of handling and possible methods of improvement

This study revealed temperament of heifers or cows as the first trait considered in decisions on culling an animal (see Figure 1). What do farmers consider an 'easy' animal? For almost half the farmers, an animal that is easy to handle is a submissive animal (46%; see Table 3). Few considered that cattle should be fearful of their caretaker (13%), and 1 in 3 totally disagreed with this assertion. In contrast, a majority believed that an easy animal should accept being petted (87%), which is more or less consistent with the fact that farmers considered it appropriate to touch animals during handling (see above).

Over 90% of farmers believe achieving 'easy' animals takes day-in-day-out work and that contact during sensitive periods is an important factor. Among the three categories of factors that influence ease of handling, human contact was the first most frequently cited, followed by quality of handling facilities and finally genetic factors (28% at least partially disagree with the importance of genetic factors).

Figure 2 gives a PCA illustration of the relationships between the 19 attitude variables. The first axis (16.4% of total variability) is defined by positive attitude towards animals and the human contact provided to them, which are

Table 3   Attitude towards ease of handling and ways to improve it. Percentage agreements with expression.

	Fully disagree	Disagree	Partially disagree	Partially agree	Agree	Fully agree
An easy animal is a submissive animal (submi)	13	18	22	19	19	8
An easy animal is an animal that fears its caretaker (fear)	34	31	22	8	4	1
An easy animal is an animal that can be petted (pet)	2	5	7	24	30	33
Achieving an easy animal is day-in-day-out work (daily)	2	1	2	15	25	55
To achieve an easy animal, it is important to interact at certain sensitive periods (period)	2	3	5	17	29	44
Genetics is the most important factor in ease of handling (genet)	1	9	18	38	18	18
Quality of the facilities is the most important factor in ease of handling (facil)	2	2	8	25	33	31
Previous contact with the caretaker is the most important factor in ease of handling (contact)	0	0	2	17	33	48

Figure 2
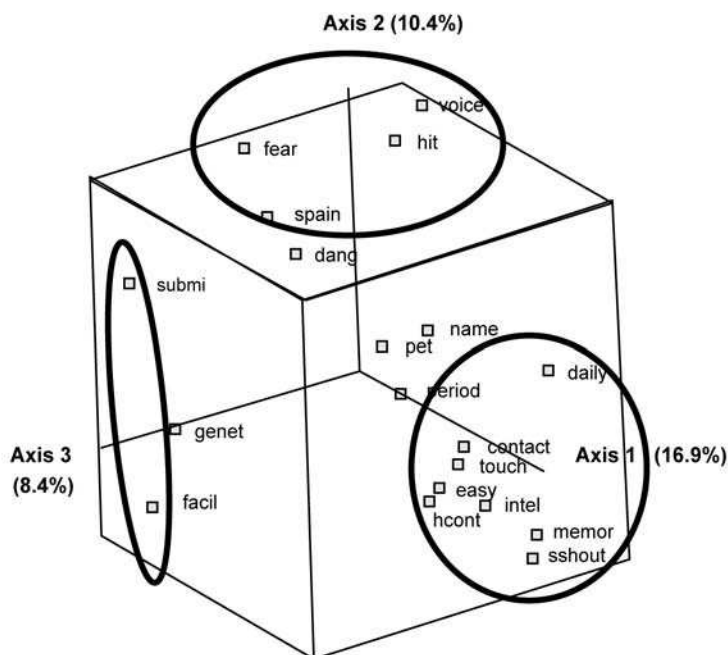
Principal component analysis on farmers' attitudes. The abbreviations are listed in Tables 1, 2 and 3.

related. The second axis (10.4%) is defined by handling variables that are human behaviour-related (shouting is appropriate in order to achieve obedience) or animal behaviour-related (fearfulness makes an animal easy to handle) as well as negative characteristics of cattle such as low sensitivity to pain. The third axis (8.4%) is defined by attitude towards handling facilities or animal submission.

Discussion and animal welfare implications

Our results show that many farmers are concerned by animal behaviour-related handling problems. This may constitute a key factor in motivating beef cattle farmers to follow training in order to improve the human-animal relationship and, as a consequence, animal welfare.

The results also underlined that farmers generally show positive attitudes towards the animals, behaviour during handling, ease of handling and ways for improving handling. However, variability within each item also indicated the potential for further improvement following appropriate farmer training. Farmers emphasised human contact as the most important factor for achieving easy-to-handle cattle. This is particularly important in a training perspective, since the changes in European husbandry conditions strongly impact on the possibilities for close, long-term contact with the animals. As predicted by Ajzen and Fishbein's theory of reasoned action (1980, cited by Waiblinger 2002), farmers' general attitudes towards animals are linked to their behavioural attitudes (eg towards

contact). Positive and negative attitudes are not related. Our results confirm previous studies on dairy cattle (Waiblinger *et al* 2002) and veal calves (Lensink *et al* 2000). The farmers did not highlight the genetic factor. This attitude towards genetics is surprising, given that genetic factors have been scientifically proven to influence the reactions of cattle to humans (see Boissy *et al* 2005 for review). Farmers should probably be given more information on this aspect.

Farmers seem open to improving handling, in particular through positive human contact. Further on-farm investigations are required to corroborate this questionnaire-based study. The variability in farmers' attitudes identified in this study will be accounted for in future research on ease of handling cattle using direct measurements on the animals.

Acknowledgments

References

Boissy A, Fisher AD, Bouix J, Hinch GN and Le Neindre P 2005 Genetics of fear in ruminant livestock. *Livestock Production Science 93:* 23-32

Boivin X, Lensink J, Tallet C and Veissier I 2003 Stockmanship and Farm Animal Welfare. *Animal Welfare 12:* 479-492

Hemsworth PH 2003 Human-animal interactions in livestock production. *Applied Animal Behaviour Science 81:* 185-198

Lensink J, Boissy A and Veissier I 2000 The relationship between farmer's attitude and behaviour towards calves, and productivity of veal units. *Annales Zootechnie 49:* 313-327

SAS/TAT 1999 *User's guide, Version 8.* SAS Institute Inc: Cary, NC, USA

Waiblinger S, Menke C and Coleman G 2002 The relationship between attitudes, personal characteristics and behaviour of stockpeople and subsequent behaviour and production of dairy cows. *Applied Animal Behavioural Science 79:* 195-219