

Finnish cattle and pig farmers' perceptions of animal welfare inspections

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Abstract

The aim of this study was to broaden the understanding of Finnish cattle and pig farmers' perceptions of the on-site animal welfare inspections carried out by official authorities in livestock farms. The study was conducted using an electronic questionnaire, aimed at 500 Finnish cattle and 500 pig farmers. Responses were received from 96 cattle farmers and 105 pig farmers, of which 20 and 55, respectively, had undergone an animal welfare inspection. It was found that most of the farmers recognised the need for animal welfare inspections, but also that a more negative attitude was prevalent among farmers who had undergone these inspections. The inspection itself was a far more negative experience if the farmer had not understood the reason for the inspection, no opportunity existed to be heard, or the findings of the report were found to be unclear. The results suggest that although the farmers generally approve of inspections, their own negative experiences affect their perceptions. Moving forward, efforts should be made by inspectors to enhance the level of communication, thereby ensuring the findings of the report are clear to the farmer.

Keywords: animal welfare, cattle, farmers' perceptions, livestock farmer, on-farm inspections, pigs

Introduction

The protection of animals kept for farming purposes in the EU is based on a specific directive (Council Directive 98/58/EC 1998). The standards for calves and pigs are also supplemented by species-specific directives (Council Directive 2008/119/EC 2008a; Council Directive 2008/120/EC 2008b). The directives lay down the minimum standards for the protection of animals and every EU Member State (MS) is obligated to transpose these directives into national law. Furthermore, an EC Regulation (Regulation [EC] No 882/2004 2004) stipulates that official on-farm inspections should be carried out by competent authorities to verify that the minimum standards of the above-mentioned directives are complied with. According to the same regulation, these inspections should be made without prior warning, regularly, on a risk basis, and with appropriate frequency.

Official animal welfare control is an important part of ensuring animal welfare on farms. However, official authorities may require no more than the minimum standards laid down in legislation. Anneberg *et al* (2013) have discussed the dilemma regarding whether inspectors should only focus on verifying the compliance with legislation or whether inspections should also contain a preventive aspect. A confrontation may arise if the farmer sees animal welfare

differently to the inspector, who looks at the issue from a legislative perspective (Sørensen & Fraser 2010).

The Finnish animal welfare control system was changed at the end of 2009 when new official veterinarian posts were created for animal welfare control. This change was due to an existing conflict of interest; the same official veterinarians who were responsible for the veterinary care of the animals also carried out inspections on the same premises, ie on their clients. Another aim of the change was to increase resources for animal welfare control. In Finland, the animal welfare inspections are mainly based on suspicion of non-compliance but also on sampling (approximately 2% of cattle and 3% of pig farms) and on the control of cross-compliances (Evara 2016). In cases of minor non-compliance, eg slightly dirty drinking water, guidance on corrections and promoting animal welfare is given. If the guidance given is found to be ineffective or if the non-compliances are serious, eg animals are suffering from thirst, appropriate enforcement measures are taken to ensure correction. An animal owner may be given a prohibition for continuing or repeating an illegal procedure or an order to fulfil obligations within a specific time-period. If required for animal protection reasons, official authorities may also take immediate action to ensure the welfare of an animal, eg feed or other substances may be acquired from

Table 1 Statements regarding inspector and inspection itself used in created sum variables.

Statements regarding the inspector (Likert-scale 1–5)
The inspector acted professionally
The inspector's actions were appropriate
The inspector's observations were appropriate
The inspector's ability to communicate was insufficient (reversed)
The inspector's actions were questionable (reversed)
Statements regarding the inspection (Likert-scale 1–5)
The inspection was carried out professionally
The atmosphere was open
The inspection was beneficial
The inspection promoted the welfare of animals
The inspection did not disturb the routines of the farm
The inspection was unjustified (reversed)
The inspection was insulting (reversed)
The inspection was unnecessary (reversed)

elsewhere or animal may be euthanased. In addition, a notification may be made to the police and EU subsidies may be reduced as a consequence.

Although numerous on-site animal welfare inspections are carried out in Europe every year, surprisingly little research has been undertaken as to how farmers perceive these inspections. Finnish farmers consider the increased control in Finnish agriculture following accession to the EU an insult to their honesty and privacy as well as being a violation of the sanctity of their homes (Ådahl 2007). In The Netherlands, farmers consider the inspections of animals important not only to find the so-called bad apples but also to show how well farmers are doing (Bracke *et al* 2005). According to Anneberg *et al* (2012), Danish farmers perceive animal welfare inspections as necessary but also unfair and obtrusive. Furthermore, the quantity of rules and regulatory details make the Danish farmers feel insecure (Anneberg *et al* 2012). European farmers have also criticised certain animal welfare regulations and measures for not being useful and even detrimental to animals as well as difficult and costly to implement (Bock & van Huick 2007). The aim of this study was to broaden the understanding of the perceptions of farmers regarding the necessity and quality of official animal welfare control.

Materials and methods

Questionnaire

An electronic questionnaire (E-lomake, Eduix Oy) was developed to evaluate the farmers' perceptions of animal welfare control. This was aimed at 500 Finnish cattle and 500 pig farmers. A request for data was sent to the Finnish Food Safety Authority (Evira) and, after authorisation, randomised sampling of the farmers (excluding those who had less than ten cattle or pigs, or who had no email address) was

performed by the National Land Survey of Finland. The questionnaire was sent by email in August 2015. The farmers were sent a reminder twice and were given 20 days to respond. No prize was offered as an incentive. The data received were analysed anonymously. The electronic questionnaire consisted of seven parts, incorporating 49 questions. Each part had one to eleven questions, which were mainly of the closed type; respondents were asked to choose from a list of options or state their opinion on given statements on a five-point Likert scale (1 = fully disagree to 5 = fully agree). In the open-ended questions, the respondents could express their opinions regarding issues related to animal welfare control or clarify the answers they had given in the closed questions. The first part comprised questions on the background of the respondents and their farms. The second asked the respondents to define the term animal welfare. The third part asked questions about the respondents' knowledge of the requirements of national animal welfare legislation. In the open-ended questions, respondents could express how and what information they would need more of, and whether they would change anything in the current animal welfare legislation. Part four comprised general questions related to the number and importance of animal welfare inspections and the change to the Finnish animal welfare control system. The fifth part was directed only at the respondents who had undergone an animal welfare inspection after 2009, and included questions about the inspection itself and their experiences. In the sixth part, the respondents were asked to express their opinions regarding the enforcement measures and punishments, and in the last part the respondents could offer additional comments on animal welfare control and on the questionnaire itself (Appendix 1; see supplementary material to papers published in *Animal Welfare*: <https://www.ufaw.org.uk/the-ufaw-journal/supplementary-material>). Parts two and six were not analysed in this survey.

Statistical analysis

Before the data analysis, the respondents were grouped on the basis of their age, gender and work experience, the number and type of animals on their farms, and whether they had undergone an inspection after 2009. The independent samples *t*-test (two groups) and the ANOVA (more than two groups) were used to evaluate the differences between the datasets. The Kolmogorov-Smirnov test was used to determine the distribution of data and Levene's test to determine the homogeneity of variances. Based on the Levene's test, *post hoc* Tamhane's (variances not equal) or Tukey's test (variances equal) were used. In instances where the number of responses were low (less than 100) and data were not equally distributed, Mann-Whitney *U*-test (two groups) and the Kruskal-Wallis *t*-test (more than two groups) were used to evaluate the differences between the datasets. The relationships between different variables were evaluated using Spearman's correlation.

The sum variables of positive attitude towards the inspector and the inspection were created using five-point Likert-scale statements about the inspector and the inspection itself (1 = fully disagree, 2 = somewhat disagree, 3 = neither disagree nor agree, 4 = somewhat agree, 5 = fully agree; Table 1). Cronbach's Alpha was used to examine the average

correlation of selected statements and, thus, the reliability of the created sum variables. In addition, some of the open questions were analysed through content analysis (O'Cathain & Thomas 2004). Answers were grouped and common themes distinguished. The answers were coded and the codes treated as variables in a quantitative analysis. Although two authors conducted the data analysis, all the authors discussed the interpretation together and consensus was achieved.

The data were analysed using SPSS statistical software (IBM SPSS Statistics 22.0, NY, USA). The 'don't know' answers were categorised as 'missing', and ambiguous answers in open-ended questions that could not be interpreted were excluded from the analysis. Statistical significance was accepted at a confidence level of 95% ($P < 0.05$).

Results

Background of respondents

Of the 500 cattle farmers and 500 pig farmers, 96 (19%) and 105 (21%), respectively, responded to the questionnaire (Table 2). The median age of the respondents was 48 years (range 21–65 years) and the median work experience 21 years (range 0–62 years). The geographical distribution of the respondents corresponded moderately well with the overall distribution of the farms in Finland (Official Statistics of Finland 2017a).

Of the cattle and pig farmers, 21% (20/96) and 52% (55/105), respectively, had undergone at least one animal welfare inspection after 2009. Thirty-six per cent (27/75) of the farmers had undergone a sampling-based inspection, whereas the percentages for inspections based on suspicion of non-compliance and on control of cross-compliances were 27% (20/75) and 12% (9/75). Twenty-five per cent (19/75) of the farmers did not clarify the reason for the inspection.

Necessity of animal welfare inspections

The animal welfare inspections were considered necessary by 72% (142/198), neither necessary nor unnecessary by 14% (27/198) and unnecessary by 15% (29/198) of the respondents. Of the respondents, a total of 133 had clarified their response and more than half of them (71/133) justified inspections with the need to find those who neglect animals or violate animal welfare laws. Of the 68 respondents who had undergone an inspection, 42 (62%) evaluated the inspection of their own farm as unnecessary, and 31% (22/70) considered that they had not benefited from the inspection. Only 13% (9/70) of the respondents considered that the inspection promoted the welfare of animals in their own farms. More than 90% (175/193) of the respondents considered the current animal welfare control in Finland sufficient. The change of the Finnish control system had been noticed by 49% (98/201) of the respondents. Of those 98 respondents who had noticed the change, 41 (42%) considered it necessary, 15 (15%) neither necessary nor unnecessary, and 33 (34%) unnecessary. A weak negative relationship was found between the opinions regarding

Table 2 Descriptive information on respondents, stratified by farm type.

Factor	Respondents (%)		
		Cattle farmers (n = 96)	Pig farmers (n = 105)
Gender	Male	68	82
	Female	32	18
Age (years)	> 40	24	25
	40–55	53	51
	> 55	23	24
Work experience (years)	0–5	13	9
	6–10	14	11
	11–15	14	21
	16–20	6	10
	21–25	12	14
	26–30	18	16
Herd size (average number of animals per farm)	> 30	25	20
	Small [†]	38	44
	Medium [‡]	38	31
	Big [§]	25	23

[†] < 50 cattle or < 500 pigs;

[‡] 50–100 cattle or 500–1,000 pigs;

[§] > 100 cattle or >1,000 pigs.

the sufficiency of animal welfare control and the necessity of inspections (Spearman rank: $r = 0.29$; $P < 0.001$). Instead, a stronger positive relationship existed between the opinions regarding the necessity of inspections and the necessity of the change (Spearman rank: $r = 0.51$; $P < 0.001$).

There were statistically significant differences between genders, animal species and whether the farm had been inspected or not in the attitudes towards the necessity of inspections, the sufficiency of animal welfare control and the necessity of the change of the Finnish animal welfare control system (Table 3). The farmers who had undergone an inspection considered the inspections and the change more often unnecessary. Also, male respondents and pig farmers more often considered both the inspections and the changes unnecessary than female respondents and cattle farmers. However, there was no significant difference between the age groups, or the groups based on working experience.

Effect of communication

The created sum variables were used for the statements concerning the inspector ($n = 5$; Cronbach's Alpha = 0.96) and the inspection situation ($n = 8$; Cronbach's Alpha = 0.96) to examine the correlations between different variables related to inspection procedures. Proper communication and dialogue

Table 3 Results of t-tests and descriptive statistics for perceptions of animal welfare control in general by gender, animal species and inspection status.

	Gender							
	Male		Female		95% CI for mean differences	t	P-value	
	Mean (\pm SD)	n	Mean (\pm SD)	n				
Necessity of inspections	3.74 (\pm 1.11)	150	4.14 (\pm 0.99)	50	-0.75, -0.05	-2.26	0.025	
Sufficiency of animal welfare control	4.69 (\pm 0.67)	144	4.38 (\pm 0.87)	47	-0.03, 0.59	2.24	0.029	
Necessity of change of animal welfare control system	2.82 (\pm 1.42)	132	3.46 (\pm 1.24)	46	-1.11, -0.17	-2.70	0.008	
	Animal species							
	Cattle		Pig		95% CI for mean differences	t	P-value	
	Mean (\pm SD)	n	Mean (\pm SD)	n				
Necessity of inspections	4.13 (\pm 1.03)	96	3.58 (\pm 1.09)	104	0.25, 0.85	3.64	< 0.001	
Sufficiency of animal welfare control	4.43 (\pm 0.84)	90	4.78 (\pm 0.59)	101	-0.55, -0.14	-3.29	0.001	
Necessity of change of animal welfare control system	3.45 (\pm 1.26)	89	2.52 (\pm 1.47)	89	0.54, 1.33	4.69	< 0.001	
	Inspection status							
	Not-inspected farm		Inspected farm		95% CI for mean differences	t	P-value	
	Mean (\pm SD)	n	Mean (\pm SD)	n				
Necessity of inspections	3.96 (\pm 1.11)	125	3.64 (\pm 1.05)	75	-0.63, -0.01	-2.02	0.045	
Sufficiency of animal welfare control	4.46 (\pm 0.73)	118	4.70 (\pm 0.74)	73	-0.09, 0.35	1.19	0.234	
Necessity of change of animal welfare control system	3.27 (\pm 1.32)	112	2.50 (\pm 1.43)	66	-1.18, -0.35	-3.64	< 0.001	

Table 4 Spearman correlation between statements and sum variables of positive attitude towards inspector and inspection.

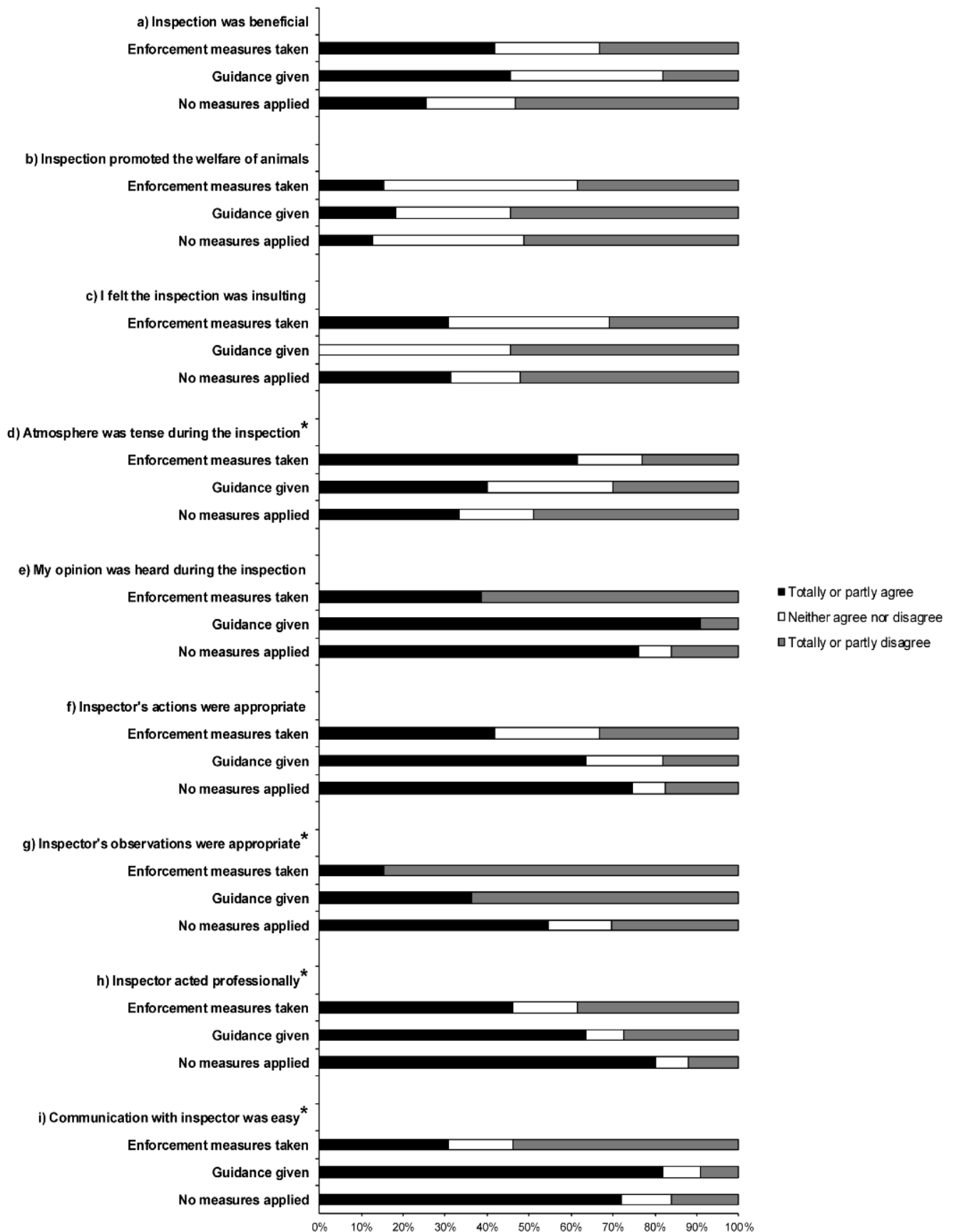
Statements	Sum variable of positive attitude towards			
	Inspector		Inspection	
	r	P-value	r	P-value
Communication with the inspector was easy	0.81	< 0.001	0.71	< 0.001
The inspection was made in mutual understanding	0.67	< 0.001	0.54	< 0.001
The reason for the inspection was clear	0.34	0.003	0.28	0.017
I was given the opportunity to be heard	0.69	< 0.001	0.54	< 0.001
It was clear how to complain about the public authority	0.35	0.002	0.28	0.018

between the farmer and the inspector during the inspection proved to be an important factor affecting the farmers' attitude towards both the inspector and the inspection situation (Table 4). Almost two-thirds (49/74; 66%) agreed that communication with the inspector was easy, and 80% (60/75) agreed that the inspection was carried out in mutual understanding. Respondents who felt that communication with the inspector was easy also more often felt that the inspection was made in mutual understanding, and that the inspection increased their knowledge of animal husbandry (Spearman rank: $r = 0.72$ and $r = 0.42$, respectively; $P < 0.01$ for both). If the respondents felt that their knowledge of animal husbandry

increased, they also perceived the inspection as useful (Spearman rank: $r = 0.62$; $P < 0.001$). Moreover, most of the respondents (53/74; 72%) felt that they had been heard during the inspection and this correlated positively with the experience of easy communication with the inspector (Spearman rank: $r = 0.74$; $P < 0.001$). Females agreed more often that communication was easy and that the inspection was made in mutual understanding than male respondents (83 vs 61% and 89 vs 77%, respectively, Mann-Whitney U -test; $P < 0.05$ for both).

The reason for the inspection, the inspection report and/or the process of appealing against the activity of the public authority were unclear for 14% (10/72), 21% (15/70) and 37% (26/70) of

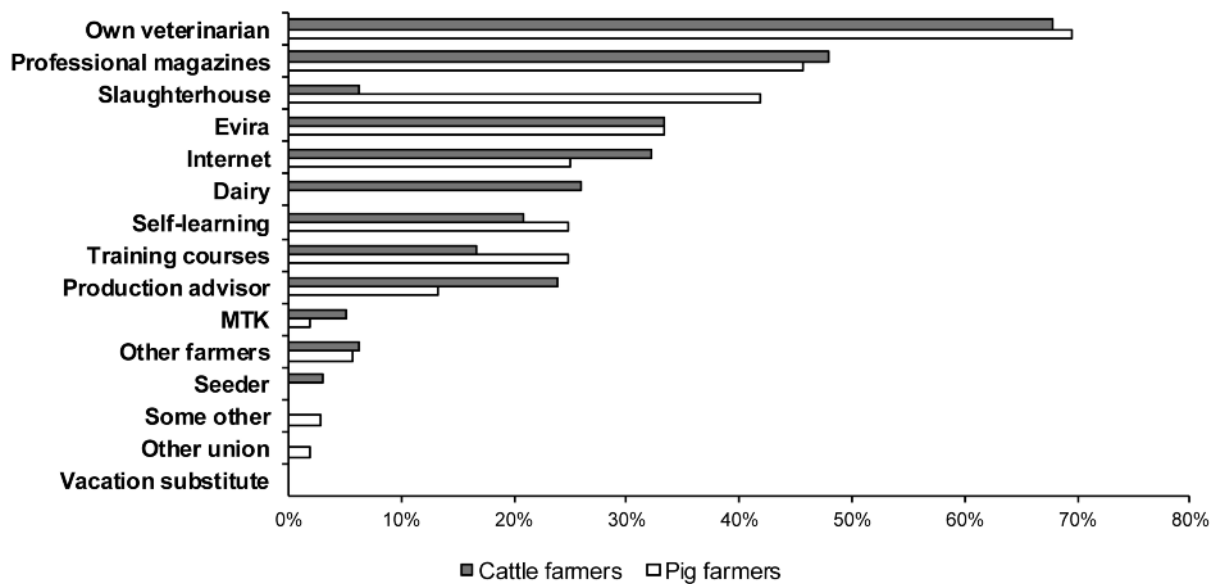
Figure 1



Statements regarding farmers' opinions of inspection. Answers are stratified by the outcome of the inspection.

* Kruskal-Wallis t-test: $P < 0.05$.

Figure 2



Most important sources of information on legislation. Respondents were asked to choose what they considered the three most important sources of information. Bars show proportion of respondents who chose alternative. Evira: Finnish Food Safety Authority; MTK: The Central Union of Agricultural Producers and Forest Owners; Seeder: a person who performs artificial insemination on farms.

the respondents, respectively. These respondents also more often considered that the inspection violated their legal protection (Spearman rank: $r = 0.28$, $r = 0.33$ and $r = 0.28$; $P < 0.05$ for all). Approximately half (37/73; 51%) of the inspections were performed without prior warning and the other half (36/73; 49%) were agreed on beforehand. If the inspection was performed without prior warning, the respondents more often felt that it disturbed the routines of the farm (63 vs 40%), and violated their legal protection (44 vs 9%) (Mann-Whitney U -test; $P < 0.05$ for both). In the case of inspections agreed on beforehand, the respondents more often considered that it took place in mutual understanding (89 vs 70%) and that the atmosphere was more open (81 vs 58%) (Mann-Whitney U -test; $P < 0.05$ for both).

Outcome of inspection

According to the farmers, most farms (83%; 62/75) complied with the animal welfare standards or had only minor non-compliances and enforcement measures were used in only 17% (13/75) of the inspected farms responding to the questionnaire. Only in 52% (8/13) of the cases had a new inspection been made after the use of enforcement measures.

There was found to be a correlation between the outcome of the inspection (enforcement measures vs guidance vs no measures) and the respondents' perceptions of the inspection visit (Figure 1). The relationship was significant for four statements: the atmosphere was tense during the inspection (62 vs 40 vs 32%, Kruskal-Wallis, t -test; $P = 0.042$); the inspectors' observations were appropriate (15 vs 36 vs 59%; $P = 0.003$); the inspector acted professionally (46 vs 64 vs 80%; $P = 0.016$); and communication with the inspector was easy (31 vs 82 vs 72%; $P = 0.020$) (Figure 1).

Sufficiency and sources of information regarding legal standards of animal welfare

Of the respondents, 81% (161/199) considered that they were sufficiently familiar with the standards of animal welfare legislation. There was no significant difference regarding this opinion between genders, age groups, or groups based on working experience. Of those 38 respondents who considered that they were not sufficiently familiar with the legislation, 32 (84%) explained their response with the difficulty in interpreting legislation. If the farmers considered that they were not sufficiently familiar with the standards, they also viewed the inspector more negatively (Spearman rank: $r = 0.24$; $P = 0.039$).

The 95 responses to the open-ended question 'Is there something you would like to add, change or remove in the current animal welfare legislation?' could be divided into three main themes: i) the option of using common sense instead of measuring millimetres during inspections (32%; 31/95); ii) the legislation should be drawn up by people with practical experience (16%; 15/95); and iii) national standards should be in line with those of other EU Member States (8%; 8/95).

The degree of information concerning legal standards was considered sufficient by 66% (127/193) of the respondents, and insufficient by 25% (48/193). The amount of information was more often considered insufficient by cattle farmers and those who had not undergone an animal welfare inspection (t -test; $P < 0.05$ for both) and also young respondents compared to old ones (Tamhane's test; $P = 0.008$). A correlation with the respondents' opinions regarding the sufficiency of information and their knowledge (Spearman rank: $r = 0.45$; $P < 0.001$) was found. The most important sources of legal standards were the farms' own veterinarians and professional magazines. Slaughterhouses and dairies also played an important role (Figure 2).

Discussion

In this study, livestock farmers' perceptions of the necessity and quality of official animal welfare control in Finland were evaluated. Farmers' own experiences of animal welfare inspections were shown to make their perception of inspections more negative. There was a statistically significant relationship between the outcome of the inspection and respondents' perceptions of the inspection visit. Observed negative perceptions might be due to a more serious offence against animal welfare in these farms, ie having impaired the atmosphere during the inspection visit. However, the farmers perceived animal welfare inspections to be better if proper communication and dialogue with the inspector was achieved during the inspection. If the farmers experienced that communication with the inspector was difficult or that they were not given an opportunity to be heard, both the inspection and the inspector were perceived more negatively. It might be that those farmers who were angry enough bothered to answer the questionnaire. Still, investing in inspectors' communication skills, through training, for example, may enhance collaboration with farmers, also with the challenging ones.

If the farmers perceive inspections as an unwanted penetration into their territory, this might hinder any fruitful discussions and co-operation. Also, Anneberg *et al* (2012) recognised that the dialogue between inspectors and farmers has an important influence on the outcome of the inspection. In addition, officials' good co-operation skills and a negotiative approach have been highlighted in food control (Läikkö-Roto & Nevas 2014; Kettunen *et al* 2017). Female farmers were found to have a more welcoming attitude towards inspections than males: females may perhaps have more animal-centred thoughts (Maria 2006) or better social skills than men. Furthermore, in Finland, most of the inspectors are females, which could also impact on attitudes and should be studied further. In addition, it would be interesting to evaluate how the inspectors perceive the inspections. It was also found that the cattle farmers' perception of inspections was more positive than that of pig farmers. Bock *et al* (2007) argued in their study concerning French, Swedish and Dutch farmers that cattle farmers may also possibly feel closer to their animals compared to pig farmers. Another factor influencing this difference might be the termination of a long period of transition concerning a tightened legislation on pig welfare, demanding, eg group housing of sows and gilts.

It was worrying that almost one-third of the participating Finnish farmers considered the inspection of their farm to violate their legal rights. Although the purpose of an inspection is to ensure that animal welfare requirements are met, the farmers appeared to consider them an attack against the business and property to which they are entitled. Lepistö and Hänninen (2011) argued that the obligation of public authorities to use administrative enforcement measures that conflict with basic rights, such as freedom, to conduct a business creates a strong contradiction. Four main reasons were found for the farmers

seeing the inspection as a violation of their legal protection: they did not understand the reason of the inspection, the appeals process and/or the inspection report were unclear, and the inspection was performed without prior warning. With the exception of prior warning, these reasons could easily be addressed by adequate communication, dialogue and writing skills from the inspector.

It was found that about half of the inspections were agreed upon beforehand, despite the demand for performing animal welfare inspections without prior warning deriving from EC Regulation No 882/2004. It is not surprising that the farmers experienced an inspection more negatively if it was carried out without prior warning as, in Finland, most farms are family run (Official Statistics of Finland 2017b), and the inspections might be considered an infringement of the sanctity of the home. It should be discussed whether the efficacy of the control might improve if inspections were announced beforehand, as this way the farmers would react more positively and hence be more receptive. Better dialogue between the farmer and the inspector could be achieved. According to Hitchens *et al* (2017), one of the ways of finding poor animal welfare is the owner not being notified of an inspection beforehand, ie more non-compliance is detected when owners are not expecting an inspection. More research on the advantages and disadvantages of prior warning is needed to evaluate the utility of the demand for performing inspections without prior warning.

Also, it was revealed that if the reason for the inspection remained unclear, the farmers not only felt that their legal protection was violated, but also more negatively about the inspection. Farmers may be confused, as farms are inspected for different reasons, not only for animal welfare but also for registration and marking, food hygiene and use of fields. Also, in our study, it was noted that farmers had difficulties distinguishing animal welfare inspections from other types of official inspections. However, based on the responses to open-ended questions, the farmers who had undergone an animal welfare inspection could be identified and thus the interpretation of the results was not compromised. In addition, the non-compliances detected on some of the inspections may lead to a reduction of EU subsidies, although not all lead to this. Anneberg *et al* (2013) stated that farmers' understanding of inspections would result in a more positive attitude towards them. It was thus concluded that it is crucial that the reason and the content of the inspection are clearly communicated to the farmer.

It was noted that almost half of the farmers did not know how to appeal about the activities of the authorities. In addition, in some cases, the inspection report was considered unclear. When official power is used, the right to appeal should be highlighted, as it is a fundamental right and ensures that the object of supervision has an opportunity to a fair trial (Administrative Procedure Act 2003). The administrative process of animal welfare control should guarantee the legal protection of the farmers. In her research into the Finnish animal welfare control system from 1996 to 2006, Wahlberg (2010) argued that the official authorities

carrying out the inspections were not adequately acquainted with the administrative process, as the owner was officially heard in only 8% of animal welfare inspections, and this is a legal requirement in Finland (Administrative Procedure Act 2003). One of the aims of changing the Finnish control system was to improve the use of administrative measures, and this shows that although there is still scope for improvements in the hearing process, clear progress has been made since 2006, as now almost half of the farmers who did not comply with the legislation felt that they had been heard.

A repeat inspection was carried out in our material in only half of the cases in which enforcement measures were taken, even though this should be done routinely. Kettunen *et al* (2015) found, in a study related to food control, that although the use of enforcement measures led to compliance in most of the violations, verifying compliance after the enforcement decision was essential. The importance of ensuring the correction of the violations using re-inspection or via another documented method should also be emphasised in animal welfare control.

It was found somewhat contradictory that although the Finnish farmers had a fairly negative attitude towards exact standards (eg measuring millimetres) and would have preferred more practical approaches, the main reason for their hesitation remained difficulties in interpreting the law due to its abstract expressions. Anneberg *et al* (2012) also found that interpretation of the law created uncertainty among Danish farmers, since it is subjective, meaning that farmers might be treated differently. The Finnish Animal Welfare Act (1996) contains many expressions, such as premises must have *sufficient* space; the animal must obtain *suitable* feed; and when an animal falls ill, it must obtain *appropriate* care, which are open to various interpretations. These expressions permit flexibility in animal welfare standards and make it possible to evaluate the conditions based on animal welfare rather than precise, measurable engineering standards. The interpretations may vary depending on the inspector and this might lead to unequal treatment of farmers. Therefore, central organisation is essential for providing proper guidance on the sections of legislation that are open to various interpretations, and also for educating the official authorities. Effective guidance and judicial aid from the central administration are important for ensuring good governance and the adequate use of enforcement measures (Lepistö & Hänninen 2011).

It was not surprising that veterinarians were the most important sources of information, since Finland has comprehensive veterinary organisation delivering both clinical and prophylactic service for food animals. More than half of the Finnish cattle farms and most of the Finnish pig farms belong to the system; in cattle farms the herd health veterinarian makes a minimum of one annual health-care visit and in pig farms at least three to four annual visits. Both farm types have a herd health plan drawn up in collaboration with a veterinarian (ETT 2017). It was found that if the farmer considered their knowledge insufficient, they perceived the inspection situation more negatively. Thus,

we suggest that educating both the veterinarians, who take care of the farms, and the farmers in legislation may result in better attitudes towards inspections. This is in line with the previous recommendations on intensifying the effect of food control through guidance on legislation (Nevas *et al* 2013; Lääkkö-Roto & Nevas 2014).

The low return rate of the questionnaire (20%) questions whether the responses were representative of all Finnish farmers. The geographical and age distribution of the respondents was an accurate representation of the Finnish population of farmers so it was assumed our sample was representative. Therefore, no follow-up study was added to investigate the reasons for not responding. In addition, several of our results are in accordance with previous studies: Finnish farmers have recognised that inspections are an important way to find those who do not follow the standards, which was also the case with Dutch and Danish farmers (Bracke *et al* 2005; Anneberg *et al* 2012). Bock and van Huick (2007) also reported that the farmers experience the imbalance between national legislation and legislation elsewhere unfair and our study supported these results. Finally, our study confirmed the importance of involving farmers in developing the process of inspections as they may reveal issues that can be fixed.

Animal welfare implications and conclusion

We argue that a more positive perception of animal welfare inspections could be achieved by investing in a trusting and professional atmosphere for the inspection, with proper client communication and dialogue and clear delivery of the reasoning of the outcomes. In addition, the better atmosphere may reduce confrontations between farmers and inspectors, thus leading to better collaboration and improvements in animal welfare. Finally, as the administrative process in animal welfare control seemed to be somewhat unclear to Finnish farmers, it would be important to educate them in the content of the process, and to educate the inspectors in how to use the process in a way that ensures the legal protection of the farmers.

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