

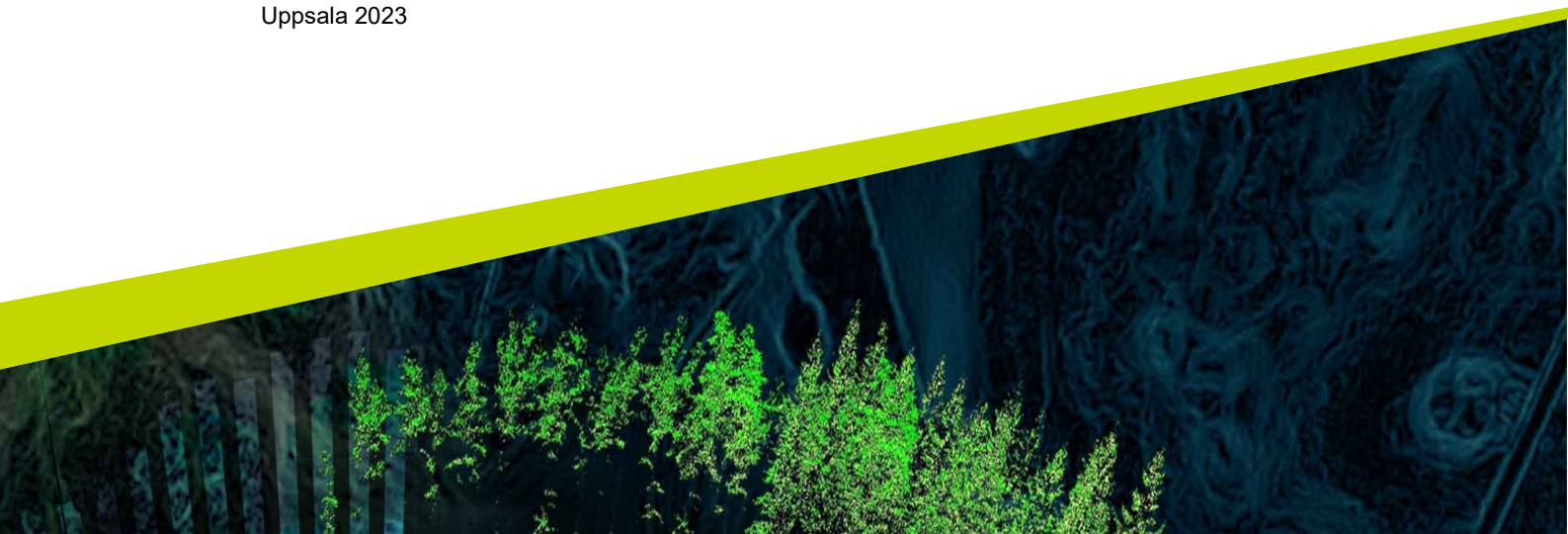


Veterinarians' experiences and preparedness to receive questions about animal welfare legislation and the official control

- the view of large animal veterinarians

Frida Landgren

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Swedish University of Agricultural Sciences, SLU
Department of Animal Environment and Health
Animal Science
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Frida Landgren

Supervisor: Frida Lundmark Hedman, SLU, Department of Animal Environment and Health
Examiner: Ida Brandt, SLU, Department of Animal Environment and Health

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Swedish University of Agricultural Sciences
Faculty of Veterinary Medicine and Animal Science
Department of Animal Environment and Health

Abstract

Farmers are one of the key contributors to successfully improving the implementation of farm animal welfare regulations. In Sweden, the County Administrative Board (CAB) is responsible for ensuring that the animal welfare legislation is complied with by performing official animal welfare inspections. In a previous study, it emerged that many Swedish dairy farmers would turn to their veterinarian for information about the animal welfare control. This study investigated how often Swedish clinical veterinarians are asked questions about the official animal welfare control and the animal welfare legislation when visiting farmers and horse keeper on their premises for treatment or counselling. The study also investigated veterinarians' experiences and handling of questions related to animal welfare legislation and official control. An electronic questionnaire was developed and answered by 130 veterinarians during spring 2023. Additionally, 9 interviews were performed. The result showed that the respondents in general received questions about the legislation and the control at occasional farm visits, mainly before inspections and around slaughter. The respondents also got questions at occasional farm visits on what applies according to the legislation. Working with pigs as a veterinarian was related to receiving the most questions, while working with horses was related to receiving the least questions. Most veterinarians reported a greater knowledge of the legislation than of the control, and stated that knowledge in these areas mainly has come through further education after the veterinary education. Further, they reported a better impression of the legislation and its content than of the control and how it is carried out, which was related to how they handle questions concerning inspections. The result in the study reflects a feeling of farmers and horse keepers having great trust in veterinarians, which contributes to veterinarians having a considerable part in the discussions around legislation and control. Many veterinarians called for better cooperation with the CAB, which should be considered as it can increase veterinarians' knowledge and preparedness to handle questions about the control.

Keywords: animal welfare, farm visits, legislation, official control, veterinarians

Table of contents

Abbreviations	7
1. Background	8
1.1 Official animal welfare control in Sweden	9
1.2 Large animal veterinarians	10
1.3 Aim of the study	10
1.3.1 Research questions	10
2. Material and Method	12
2.1 Questionnaire	12
2.1.1 Design and distribution	12
2.1.2 Processing of data	13
2.1.3 Statistical tests and analyses	13
2.2 Interviews	14
2.2.1 Preparation and performance	14
2.2.2 Qualitative analysis of interview data	14
3. Results	16
3.1 Questionnaire	16
3.1.1 Information about respondents	16
3.1.2 Veterinarians' experiences of receiving questions about animal welfare	17
3.1.3 Veterinarians' preparedness to handle questions about animal welfare	20
3.1.4 Impressions of the animal welfare legislation and the official control	21
3.2 Interviews	23
3.2.1 Occurrence and context of animal welfare questions	23
3.2.2 Veterinarians' knowledge about the legislation and the control	24
3.2.3 Veterinarians' general impression of the official control	25
3.2.4 Veterinarians' role in relation to the legislation and the official control	26
4. Discussion	28
4.1 Context of animal welfare questions	28
4.1.1 What influence which questions farmers and horse keepers ask veterinarians?	28
4.1.2 Factors associated with the occurrence of questions	29
4.2 Are veterinarians prepared to answer questions about the legislation and the official control?	31

4.3	Animal keepers' trust in veterinarians	32
4.4	Dissatisfaction with the official control	33
4.4.1	Consequences of the view of the official control	34
4.5	Method discussion	35
4.5.1	Questionnaire	35
4.5.2	Interviews	36
4.6	The study in relation to ethics and sustainability	36
4.6.1	Sustainability aspects	36
4.6.2	Ethical aspects	37
4.7	Future research and applicability of the study	38
5.	Conclusions.....	39
	References	40
	Popular science summary.....	44
	Acknowledgements.....	46
	Appendix 1	47
	Appendix 2	57

Abbreviations

SBA	Swedish Board of Agriculture
CAB	County Administrative Board
SVF	Swedish Veterinary Association

1. Background

Animal welfare and animal welfare control are debated topics, and there are divided opinions related to these. Public awareness of animal welfare is increasing in Europe and most people believe that the welfare of animals needs to be improved (European Commission, 2016). More people are nowadays concerned about how animals feel, and consumers are making higher demands on animal welfare standards, which has resulted in greater integration of animal welfare into the EU legislation (Horgan & Gavinelli, 2006). In order for the legislation to function well, it's required that the legislation is enforced and that the animal keepers are complying. Animal welfare regulations are often based on many different aspects in addition to animal welfare, such as economics, traditions and food safety (Lundmark et al., 2014). Since there are several interests to consider, opinions about the animal welfare legislation differ and problems with compliance of the legislation have been identified at both EU level (European Commission, 2022a) and at national level in Sweden (Jordbruksverket, 2023a).

Farmers are one of the key contributors to successfully improving the implementation of farm animal welfare regulations (Balzani & Hanlon, 2020). Many farmers have both governmental legislation and private standards to comply with (Lundmark et al., 2014). In order for a farmer to meet the requirements of the legislation, the farmer needs to understand the legislation and have a will to comply with it (Lundmark Hedman et al., 2022a). It means knowledge and attitudes can influence whether the legislation is complied with or not, and for increased compliance animal keepers' attitudes can be valuable to work with (Forsberg, 2011).

In recent studies, it has been found that trotting horse trainers and dairy farmers in Sweden have a very varied view of the official animal welfare control that the County Administrative Board (CAB) carries out (Lundmark Hedman et al., 2022a, Lundmark Hedman et al., 2022b) Generally, the trotting trainers had more positive attitudes and experiences than the dairy farmers had, while dairy farmers were significantly more worried before animal welfare inspections than the trotting horse trainers. Further, it emerged that dairy farmers quite often would turn to their veterinarian for information about how an animal welfare control is carried out (Lundmark Hedman et al., 2022a). This raises the question of what experiences veterinarians have of being asked questions about animal welfare controls when

they are out on farm visits, and whether veterinarians are prepared to respond to these questions. In Sweden it is not the veterinarians that carry out animal welfare inspections in accordance with the legislation. However, they have a responsibility to report to the CAB (according to chapter 8, section 18 Animal Welfare Act 2018:1192) if they find reason to assume that animals are not cared for or kept in accordance with the legislation.

Below follows a brief introduction to the official animal welfare control, and then information regarding the veterinarians' work with treatment and advice out on farms.

1.1 Official animal welfare control in Sweden

In Sweden, the animal welfare legislation is covered by the animal welfare act (2018:1192) issued by the parliament, the animal welfare ordinance (2019:66) issued by the government, and national regulations decided by the Swedish Board of Agriculture (SBA). The central and overall responsibility for animal welfare and animal welfare control lies with the SBA (European Commission, 2022b). Their work includes to guide the 21 regional CABs which are the authorities in Sweden who carry out the official animal welfare inspections. The CAB works on a risk-based basis and makes conscious priorities for inspections (SJVFS 2019:14). Primarily they should carry out planned inspections (routine controls), and secondly inspections when there is a reason to believe that the animal welfare legislation or decisions made with support of the legislation is not complied with (SJVFS 2019:14). A reason to suspect that the legislation is not complied with can for example be complaints from the public or veterinarians concerning how animals are kept and handled (Jordbruksverket, 2022b). In order to work long-term and strategically with animal welfare issues, the SBA recently developed an animal welfare strategy where the focus is on working preventively to improve compliance with the legislation (Jordbruksverket, 2020). According to the follow-up of this strategy, many animal keepers comply with the legislation, but lack of compliance remains at a relatively high level as there still are those who do not live up to the requirements (Jordbruksverket, 2023a).

Animal welfare inspections are also carried out at slaughterhouses by an official veterinarian, employed by the Swedish Food Agency (Jordbruksverket, 2023c). In the event of noted deficiencies at the slaughterhouse, the official veterinarian notify the CABs for a potential investigation of the farm the animal come from (2023c).

1.2 Large animal veterinarians

Today, many Swedish farmers and horse keepers have a lot of contact with clinical veterinarians. In general, farmers usually hire district veterinarians or other large animal veterinarians who visit their farms, partly to treat animals, but also for counseling and preventive animal health programs.

District veterinarians are a part of the SBA and work with emergency- and preventive animal health care on behalf of the state, and have an obligation to be available on a 24-hour basis to deal with contagious diseases (European Commission, 2022b). Among other things, their work may also include making assessments according to ViLA (conditional use of medicines), which is a close collaboration between farmers and veterinarians that allows farmers themselves to treat certain diseases. Examples of other large organizations in Sweden with veterinarians working with animal health, counseling and ViLA are “Gård & Djurhälsan” and “Växa Sweden”.

Studies show that many farmers have close contact and trust in veterinarians (Poizat et al., 2017; Fischer et al., 2019). The role and competence of clinical veterinarians is primarily animal health, but this is closely linked to animal welfare. Consequently, animal welfare is thus also a topic that may be discussed during veterinary visits.

1.3 Aim of the study

The research of experiences and expectations regarding animal welfare control is limited. Studying this is needed for improved implementation of the legislation, which in turn is important for good animal welfare.

This study aims to investigate how often veterinarians are asked questions about the official animal welfare control and the animal welfare legislation when visiting farmers and horse keepers on their premises for treatment or counselling. The study also aims to investigate which questions are commonly asked, what preparedness veterinarians have to answer these questions, as well as how they handle the questions.

1.3.1 Research questions

This study intends to answer the following questions:

- How common is it that farmers and horse keepers ask their veterinarians questions about the animal welfare legislation and the animal welfare control?

- What are the most frequently asked questions about the animal welfare legislation and the animal welfare control that farmers and horse keepers ask veterinarians?
- What knowledge and preparedness do veterinarians have to answer these questions?
- What is the veterinarian's opinion about the content of the animal welfare legislation and the function of the official animal welfare control?

2. Material and Method

2.1 Questionnaire

2.1.1 Design and distribution

A web-based questionnaire about veterinarians' experiences and preparedness of receiving questions about animal welfare was developed in Netigate. Target group for the questionnaire was veterinarians in Sweden who work, or recently have worked, with farm animals and/or horses out on farms. The questionnaire was done stepwise by performing test runs and making improvements before it was finalized. The study and the questionnaire were approved by the Swedish Ethical Review Authority (reference number: Dnr. 2022-07094-01).

Information about the project and a link to the questionnaire was sent to the Swedish Veterinary Association (SVF), the District Veterinarians (DV), Gård & Djurhälsan and Växa Sweden who distributed the questionnaire internally to their veterinary members and employees. The questionnaire was also distributed in two closed facebook groups for veterinarians. The questionnaire opened in the middle of March and closed at the end of March 2023.

The questionnaire consisted of demographic questions about the respondents, followed by questions about veterinarians' experiences around being asked questions about the animal welfare legislation and the official animal welfare inspection (Appendix 1). There were also questions about veterinarians' knowledge of the subjects and what their own impression of the animal welfare legislation and the official control is.

In total, the questionnaire consisted of 28 questions, but not all were compulsory. The questions were mainly multiple choice questions, where the respondents were provided with multiple answer options, or likert scale questions, where the respondents were able to indicate the extent to which they agreed or disagreed with a given statement. There were also some open questions where the respondents could clarify answers or express an opinion. At the end of the questionnaire, there was an opportunity to register an interest to participate in an interview (see chapter 2.2).

2.1.2 Processing of data

Responses to the questionnaire were registered and compiled descriptively directly by the survey generator Netigate. The responses were studied, and dropouts were observed. Respondents who did not work with farm animals or horses were removed and were not included in the total number of respondents, as they did not belong to the target group.

Responses to questions of the closed type were either kept or grouped into fewer groups when presented. All options except the alternative “Sweden” were merged into “other countries” when responses to the question about which country the respondents had studied in were presented (question 3, appendix 1). Those who agreed to a high degree and those who completely agreed that they have good contact with the CAB (question 25, appendix 1) were combined to “agree” with the statement. Furthermore, responses to the questions about how often the respondents receive questions related to animal welfare legislation and control (questions 11-14, appendix 1) were grouped into fewer groups by grouping the options “at the majority of farm visits”, “on most farm visits” and “in principle at every farm visit” into one group called “at the majority of farm visits”. These decisions were based on achieving an as relevant and clear presentation of the results as possible. Questions of the open type were scrutinized and divided into categories with different themes to get an overview and to identify central opinions.

One respondent answered “yes” on a question but left a free text answer indicating that the answer should have been “no”. That answer was moved to the category “no” instead.

2.1.3 Statistical tests and analyses

The questionnaire data from Netigate were edited and prepared in Excel for statistical analyses. Pearson’s chi-square test or Fisher’s exact test was used to investigate associations between replies on categorical questions. Primarily, Pearson’s chi-square test was used, while Fisher’s exact test was used when Pearson’s chi-square test failed to generate a p-value.

Responses to questions about age and working experience were aggregated into fewer groups to meet the criteria of number of responses per cell during the chi-square test. Questions with graded responses (1-6) regarding how often questions about the animal welfare legislation and the animal welfare control occur (questions 11-12, appendix 1) were aggregated into fewer groups (legislation “1”, “2”, “3” and “4-6”; control “1”, “2” and “3-6”). Furthermore, questions with graded responses (1-5) regarding respondents’ knowledge to answer questions about the legislation

and the control (questions 20, appendix 1) were also aggregated into fewer groups (legislation “1-2”, “3”, “4” and “5”; control “1”, “2”, “3” and “4-5”). The same was done with responses to the graded question (1-5) about impressions of the control (“1-2”, “3” and “4-5”) and with responses to the graded question (1-5) regarding to what extent the respondents agree that farmers raise problems with the control (“1”, “2”, “3” and “4-5”). At one question, respondents were asked about if they have worked with animal welfare inspections, assessments and case management based on the animal welfare legislation. Those who answered “yes” were asked to specify their experience from a list of options. These different experiences were grouped into one large group during statistical analyses to just get one group for “experience” and one for “no experience”.

Some of the questions had an “I have no opinion” option, which was removed and treated as missing data during statistical analyses but was otherwise kept. Unspecified gender was also removed and treated as missing data during statistical analyses but was kept when presenting the data descriptively.

2.2 Interviews

2.2.1 Preparation and performance

In order to more deeply study veterinarians’ experiences of discussing animal welfare legislation and control with animal keepers, 9 semi-structured interviews were performed. The interviews were based on an interview guide (Appendix 2) but were otherwise quite free in their forms, i.e., semi-structured interviews. A selection of interviewees was made via a declaration of interest, which was available to fill in voluntarily at the end of the questionnaire. When the selection of interviewees was made, it was done in order to get a spread in terms of gender, animal species the veterinarians work with, and between employees of the government and private employees. The interviews were either performed via telephone call or via video call on Zoom and lasted from 20 minutes up to an hour. Notes were taken during the interviews and the interviews were recorded to facilitate analysis of the content. The interviews were performed during April and May 2023.

2.2.2 Qualitative analysis of interview data

The nine interviews contributed to nine audio recordings. The collected material was transcribed using the transcription tool in Microsoft Word 16.0, whereon the transcription was manually corrected by playing the audio files while reading the transcription. The transcription was done no later than one day after the interview was held, when the memory of the interview was still fresh.

The interview material was analyzed qualitatively. First, all material was read once for an overview and all first impressions were noted. Secondly, the material was read more carefully whereupon relevant words, sentences and paragraphs were highlighted. All the highlighted material was then analyzed more deeply and assigned codes. The codes were thereafter sorted into potential themes and subthemes by using mind-maps for visualization, where a theme captured something of interest in relation to the research questions. Finally, associations between different themes were found and conclusions were drawn. When the report was compiled, extracts that relate to the research question and the literature were selected. Analysis of body language during the interviews was not taken into account as not all interviews were made on video.

3. Results

3.1 Questionnaire

3.1.1 Information about respondents

There was a total of 130 veterinarians who responded to the questionnaire to some extent. Of these, 97 completed the entire questionnaire, i.e., completed the questionnaire to the last question.

Approximately two-thirds of respondents were females, while one third were males (Table 1). The ages were evenly spread from 20 years and above, and most of them had a long experience of working as veterinarians (Table 1). Many respondents chose several options when asked which animal species they work with. Approximately two-thirds worked with cattle and as many with horses, while one-third worked with sheep, some with pigs and a few with goats (Table 1).

The majority of the responding veterinarians (84%, 109/130) have done their education in Sweden, while some (16%, 21/130) have done their education in other countries. Slightly more than one-third of the respondents (37%, 44/120) make animal welfare declarations according to ViLA for conditional medicine use as a part of their veterinary job. Approximately half of the responding veterinarians (56%, 65/117) have no experience of working with animal welfare control or assessments based on the animal welfare legislation, while the rest had experience of this by having worked as official veterinarians at slaughterhouses (32%, 38/117), county veterinarians (8%, 9/117) or/and as something else (17%, 20/117). Respondents who answered “as something else” specified their experiences in free text answers where most of the respondents reported that they have been involved in animal welfare cases on behalf of the CAB, while some reported they have worked as animal welfare inspectors or district veterinarians. Approximately two-thirds of respondents (69%, 83/121) have not furthered their education on animal welfare legislation and/or the animal welfare control after the veterinary education, while one-third (31%, 38/121) reported they have taken one or more courses on this topic. Most of those who have taken courses specified in free text answers that they have furthered their education via the CAB or SBA through courses, trainings or exercises. More than half (59%, 59/100) agreed that they have good contact with

the CAB, and 29% agreed the contact is partially good. Only 3% did not agreed at all and 9% agreed to a low level.

Table 1: Descriptive information about respondents answering the questionnaire on veterinarians' experiences of being asked questions related to the animal welfare legislation and the animal welfare control.

Factor		Respondents % (n)
Gender	Male	26 (34)
	Female	73 (95)
	Other	1 (1)
Age (years)	20-30	15 (19)
	31-40	17 (22)
	41-50	19 (25)
	51-60	19 (25)
	61-70	22 (28)
	Over 70	8 (11)
	Work experiences (years)	<1
	1-4	15 (19)
	5-10	10 (13)
	11-20	27 (35)
	21-30	14 (18)
	>30	31 (40)
Animal (species)	Cattle	71 (88)
	Horse	69 (86)
	Sheep	31 (39)
	Pig	19 (24)
	Goat	9 (11)
	Poultry	2 (3)
	Other	4 (5)

3.1.2 Veterinarians' experiences of receiving questions about animal welfare

According to the responding veterinarians' experiences, questions about the animal welfare legislation when visiting farmers or horse keepers occur about as often as questions about the official animal welfare control (Figure 1). However, other questions about animal welfare that are not about the legislation or the control occur slightly more often. Overall, most respondents stated that questions occurred at occasional farm visits, both when it comes to questions about the legislation, the control and other questions regarding animal welfare. How often veterinarians received questions was significantly associated with the animal species they worked

with. Veterinarians working with horses received fewer questions about the legislation than veterinarians not working with horses ($p < 0.001$). Also, veterinarians working with cattle received fewer questions about the legislation than veterinarians not working with cattle ($p = 0.007$), while veterinarians working with pigs received more questions about the legislation than veterinarians not working with pigs ($p = 0.002$). Furthermore, questions about the official control occurred less often for veterinarians working with horses than for veterinarians not working with horses ($p < 0.001$), while veterinarians working with pigs received more questions about the control than veterinarians not working with pigs ($p = 0.014$). To work with sheep or goats showed no association with the frequency of questions. How often the responding veterinarians received questions about the legislation and the control was also significantly associated with how many years they have worked as veterinarians, where those with longer experience received more questions (legislation $p = 0.038$; control $p = 0.048$). The age or gender of the veterinarians showed no association with how often the veterinarians felt they received questions from farmers or horse keepers.

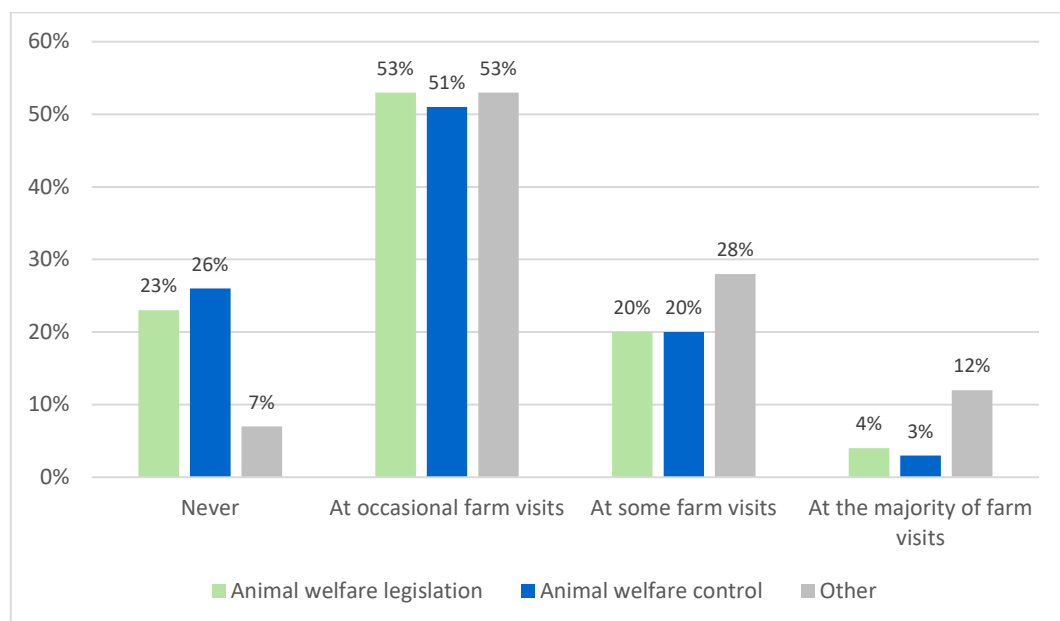


Figure 1: Responses of veterinarians regarding how often they experience they are asked questions about the animal welfare legislation ($n=115$), the official animal welfare control ($n=113$), and other questions about animal welfare that is not about legislation or control ($n=110$) when visiting farmers or horse keepers.

Respondents were asked to estimate the occurrence of different types of questions regarding animal welfare legislation and animal welfare control when visiting farmers or horse keepers. Responses to these questions are shown in Figure 2. General questions about what applies according to the legislation were most common compared to the other questions (Figure 2C), while questions about how

to find the current legislation occur the least compared to the other questions (Figure 2B). Respondents could in an open-ended question report on if there were any other questions regarding the legislation or the control that often occurs, where 27 veterinarians left an answer. Around one-third of those who left an answer stated that there are often questions concerning slaughter, i.e., questions related to if the animals are fit for slaughter or fit for transport to the slaughterhouse. Some noted that what occurs is mainly criticism of the CAB's work, rather than the animal keepers having law-specific questions. A few stated that there are questions about assessment of welfare parameters.

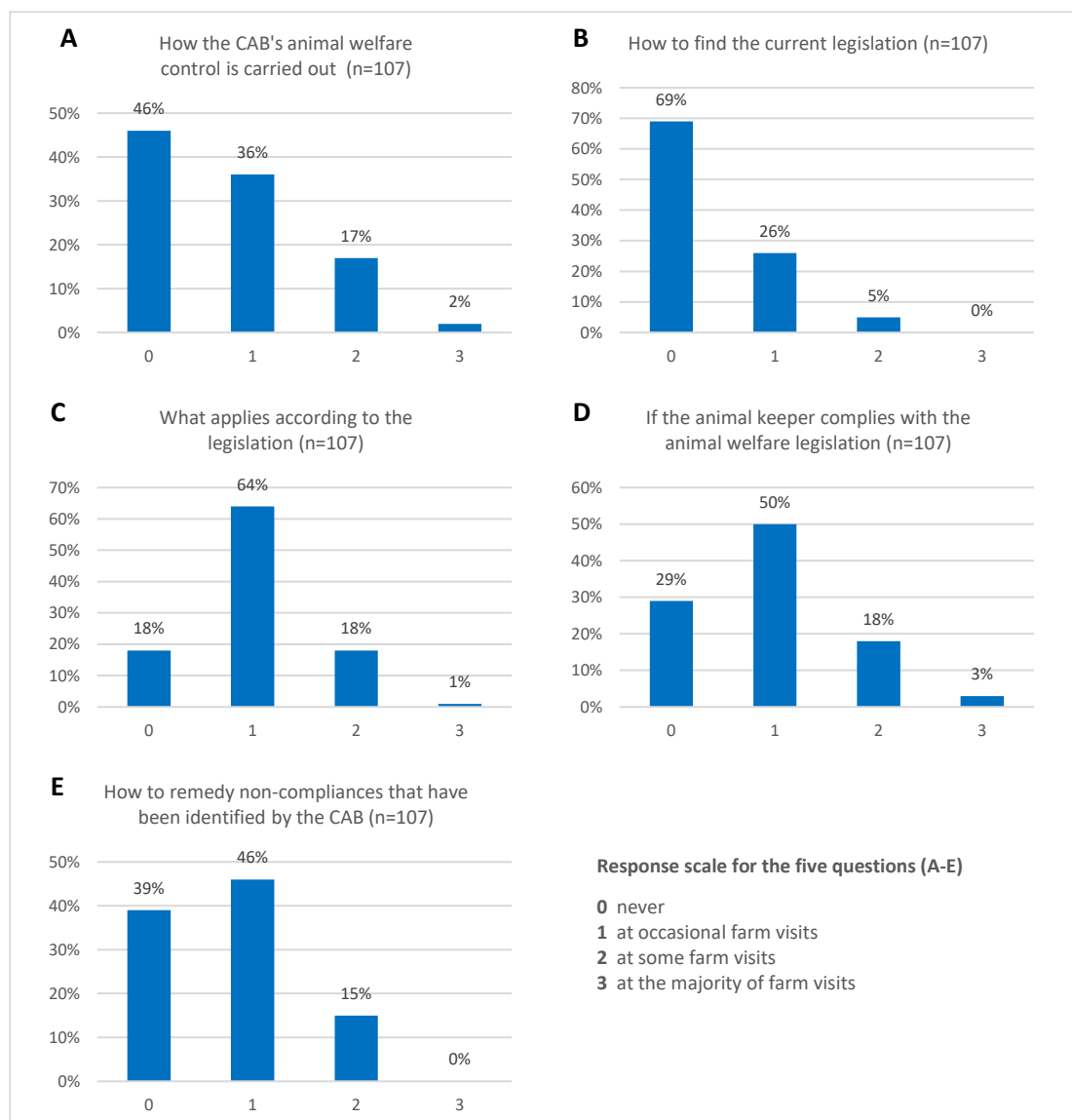


Figure 2: Responses of five questions (A-E) regarding how often veterinarians experienced that they are asked different types of questions about animal welfare legislation and animal welfare control when visiting farmers or horse keepers.

3.1.3 Veterinarians' preparedness to handle questions about animal welfare

Most of the responding veterinarians considered themselves to have knowledge to answer questions about the animal welfare legislation, while fewer considered themselves to have knowledge to answer questions about the animal welfare control and how it is carried out (Figure 3). Veterinarians' ability to answer questions about the control was significantly associated with whether or not they have furthered their education about the legislation and/or the official control after the veterinary education, where those who had furthered their education stated that they could answer questions related to official control to a greater extent ($p = 0.003$). No such association was found regarding the ability to answer questions about the legislation. Respondents also estimated their knowledge of the legislation and the control on a scale from 1-10 (1=none at all, 10=very good). In general, the veterinarians estimated their knowledge of the animal welfare legislation higher (mean value = 7.10) than their knowledge of the animal welfare control (mean value = 5.64). Responses regarding knowledge of the control were more scattered ($\sigma = 2.14$) than for the legislation ($\sigma = 1.69$), i.e., the distribution around the mean value was greater for the control.

Most of the responding veterinarians considered themselves expected to answer questions about the animal welfare legislation, of which 54% (57/106) strongly agreed and 42% (45/106) partially agreed, while only 2% not considered themselves expected to answer questions about the legislation. The responding veterinarians felt less expected to answer questions about the official control, of which 18% (19/106) strongly agreed, 58% (61/106) partially agreed, while 20% (21/106) did not consider themselves expected to answer questions about the control.

There was a significantly association between the perceived expectation to answer questions and the ability to answer, where higher perceived expectations were related to greater knowledge to answer questions, both in terms of the legislation ($p = 0.001$) and the control ($p = 0.008$).

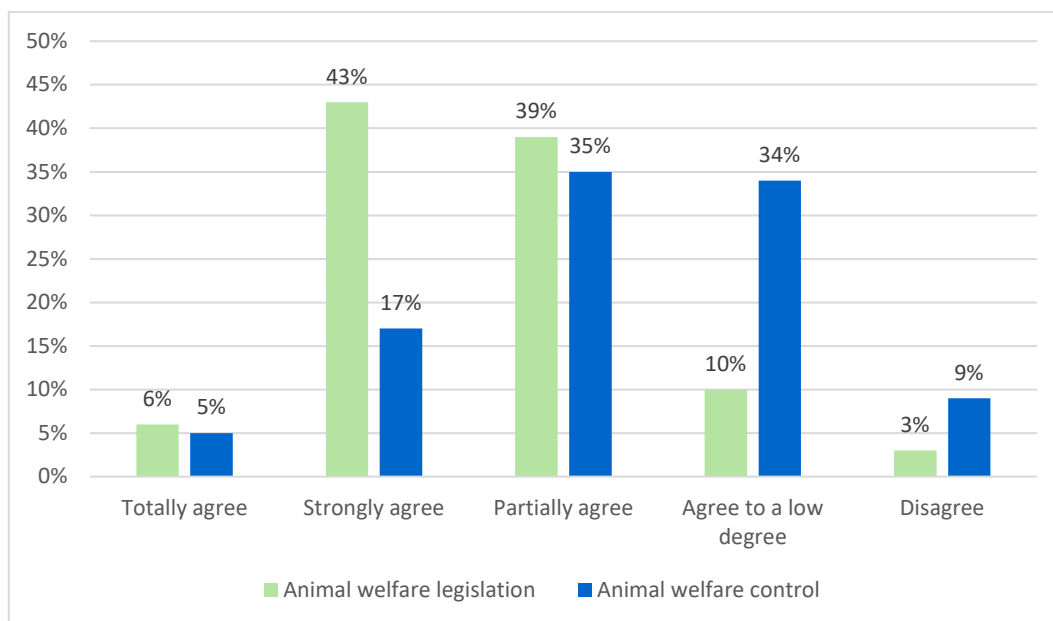


Figure 3: Responses of veterinarians regarding if they consider themselves having good enough knowledge about the animal welfare legislation to be able to answer questions about which requirements that are set (n=103) and good enough knowledge about the animal welfare inspection to answer questions about how these works (n=103).

3.1.4 Impressions of the animal welfare legislation and the official control

The responding veterinarians' impressions of the animal welfare legislation were in general more positive than their impressions of the official animal welfare control (Figure 4). A few veterinarians stated that they had a negative impression of either the legislation or the control. However, in this study, one in ten veterinarians had a negative impression of the animal welfare control. The respondents had the opportunity to develop their answers regarding the impressions in free text answers. Slightly less than one-third of the respondents (28%, 28/101) left a free text answer related to the legislation, where the most common opinion was that the legislation is inadequate, i.e., it is weak, incompatible with good animal health, and/or that the requirements need to be stricter for certain animal species. However, several of those respondents began their answers by stating that the legislation is generally good or acceptable. When asked about the official control, 35% (36/103) left a free text answer where most of the respondents stated that the inspections vary in quality, and that the CAB's inspectors have different levels of competence and different ways of working. Some respondents specified that some inspectors are knowledgeable and skilled while others lack knowledge of what they inspect. Many responding veterinarians also stated that the official control is insufficient in terms of lack of recourses, that more inspections are needed, that the inspections are not

sharp enough, and/or that animal neglect goes on for too long before CAB intervenes.

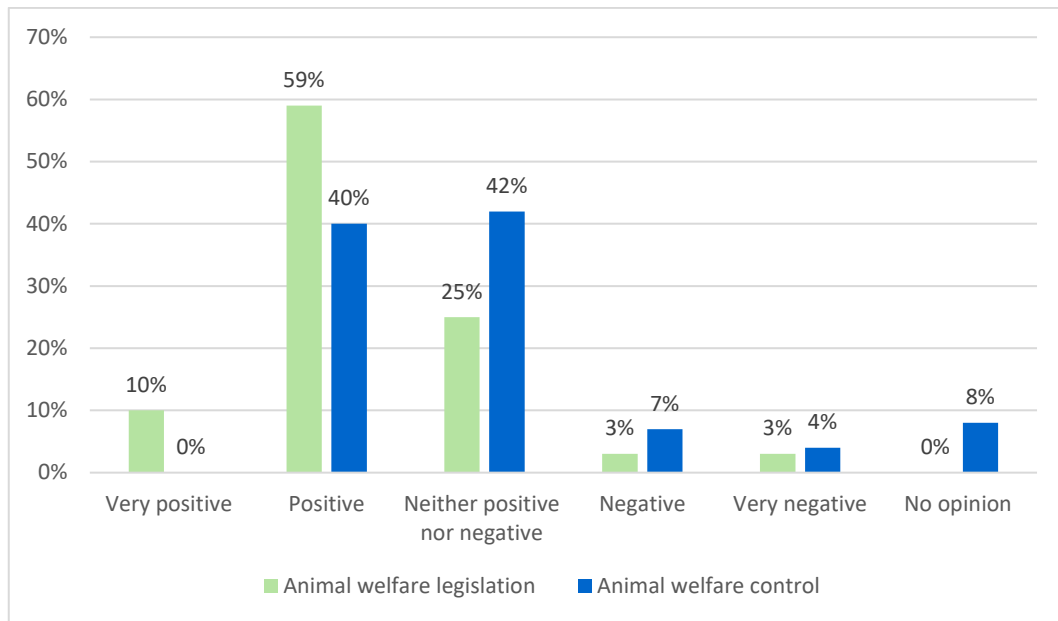


Figure 4: Responses of veterinarians regarding their general impression of the animal welfare legislation (n=101) and the official animal welfare inspection (n=103).

The respondents were asked to grade to which extent they agreed with the statements “animal keepers often raise problems with the animal welfare control” and “animal keepers show they are worried before an inspection”. Responses to these questions are shown in Figure 5. The responding veterinarians’ own impressions of the official control were significantly associated with if they agreed that animal keepers often raise problems with the control, where veterinarians who experienced that animal keepers often raises problems had a worse impression of the control ($p = 0.003$). No associations were shown between veterinarians’ impressions of the legislation or the control and if they have experience of working with animal welfare inspections, assessments or ViLA. Respondents were also asked to grade to what extent they agreed that animal keepers generally have good experiences of the animal welfare legislation and the animal welfare control. The majority agreed to some extent that animal keepers generally have good experiences of the legislation, of which 19% (20/105) strongly agreed, 37% (39/105) partially agreed and 32% (34/105) slightly agreed. The remaining 11% (12/105) did not agree at all. When asked about the control, 11% (12/105) strongly agreed, 39% (41/105) partially agreed and 33% (35/105) slightly agreed, while 16% (17/105) did not agree at all.

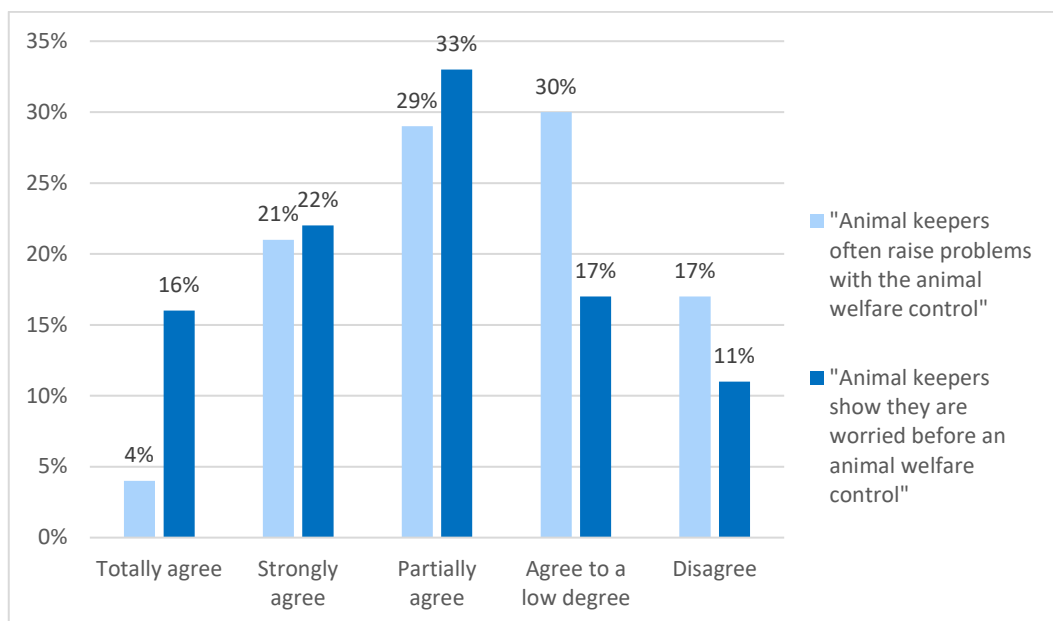


Figure 5: Responses of veterinarians regarding if they experience that animal keepers often raise problems with the animal welfare inspection (n=105) and if animal keepers show that they are worried before inspections (n=105).

One of the last questions in the questionnaire was an open question where the veterinarians could express thoughts or experiences regarding the animal welfare legislation or the animal welfare control. Of the respondents, 38 veterinarians left an answer, where most either raised problems with the animal welfare control or raised the topic of cooperation between veterinarians and/or between veterinarians and the CAB. It appeared that veterinarians wish for better dialogue, calibration, sharing of updated animal welfare information, and cooperation in animal welfare cases.

3.2 Interviews

A total of nine interviewees participated, of which four mainly worked with cattle, two mainly with pigs, two mainly with horses and one with both cattle and horses. The majority of the interviewees were in some way familiar with assessments based on the legislation, for example by having worked with ViLA and the animal welfare declaration (for pigs), by having worked as a county veterinarian employed by the CAB, a track veterinarian employed by the SBA or by being involved in animal welfare cases.

3.2.1 Occurrence and context of animal welfare questions

Veterinarians working with cattle told that questions from farmers about animal welfare legislation and animal welfare control are uncommon, even if they do

occur, while the veterinarians working with pigs told that it often occurs. However, it appeared that interviewees working with cattle experience that discussions and reasoning about animal welfare, i.e., reasoning about interior details, slaughter or the official control, are more common than law-specific question, and that discussions can occur every week.

All interviewees working with cattle and pigs mentioned that questions or discussions about if the animals are fit for slaughter or transport occur. Interviewees working with cattle told that it can be about cattle that are thin, lame or have wounds, while the veterinarians working with pigs stated that they usually get the question “can I send this to slaughter?”. Further, it emerged that pig farmers often want to talk about notifications sent from official veterinarians at slaughterhouses to the CAB, as there is sometimes quite a lot of confusion and that veterinarians feel that there are inaccuracies. Veterinarians working with cattles and pigs said that questions also occur in association with animal welfare inspections. The veterinarians working with cattle told that farmers ask questions before inspections, while the veterinarians working with pigs told that farmers mainly ask questions after inspections. From the veterinarians working with horses, it emerged partly that questions are unusual, but also that horse owners are worried if the measurements in the stables complies with the legislation and therefore always ask about this.

The atmosphere when discussing animal welfare out at farms seems to vary. It appeared that veterinarians think that farmers ask out of concern for inspections, because of frustration about the competence of and treatment from the inspectors, and that the feeling of having been misjudged during an inspection can create a negative mood. About as many, on the other hand, said that the discussions are mostly neutral or positive. Those who had a more positive or neutral experience of animal welfare conversations said that farmers ask questions to feel more secure before inspections, although they do not fear inspections. They also stated that it is more undramatic to discuss animal welfare inspections nowadays, that farmers have a better understanding of inspections, and that farmers more often say that the inspections are going well. However, one of the veterinarians who mentioned it is more undramatic nowadays, also believed that animal welfare cases where things go a little wrong tend to attract more attention than cases where it goes well.

3.2.2 Veterinarians’ knowledge about the legislation and the control

Approximately half of the interviewed veterinarians said that they did not get the knowledge needed concerning animal welfare legislation and official animal welfare control during their veterinary education. The remaining half either did not remember whether they got the knowledge needed from the veterinary education, or studied long ago and stated that what they learnt at that time was enough then.

It emerged that several veterinarians thought that they primarily got their knowledge through work experience and collaborations with the CAB.

Most of the interviewees stated that veterinarians need knowledge about the legislation, at least in general, and especially what applies according to the animal you work with. Some stated it is important to have knowledge about the official control, e.g., when you as a veterinarian should accompany the CAB on inspections, or to make things flow more smoothly when farmers ask or are upset about the animal welfare control. A few veterinarians said that knowledge of the animal welfare control is not needed or does not belong to the veterinarian's duties.

Almost all veterinarians said that they sometimes get questions they cannot answer, but they handle this by looking up the answer and getting back to the farmer. It also appeared that difficult questions can be discussed with the CAB, mainly about hygiene requirements that are difficult to interpret (i.e., the legislation being ambiguous).

3.2.3 Veterinarians' general impression of the official control

The most common view among the interviewed veterinarians was that the control depends on individual inspectors and different counties, and that there is sometimes a lack of competent animal welfare inspectors. One said that the impression of the CAB control is only positive. Some mentioned that it is positive when they can accompany the CAB during an inspection. The views were mainly based on the veterinarians' own experiences, but also on what they have heard from farmers, horse owners, or colleagues.

Veterinarians were asked if their own impression of the animal welfare control or the animal welfare legislation affects how they respond or handle questions about animal welfare. Among the veterinarians interviewed, there were those who did not think that their impression had any effect, while there were also veterinarians who thought that their impression had an effect.

One interviewee who believed that the CABs' handling of animal welfare cases affects the impression of the control and the handling of questions said:

Lately it has not been so much, but in the past when there have been those [inspectors] you thought did not do a good job, then of course it [the handling of questions] has been affected. Then maybe you encouraged the animal keeper to actually complain about what is in the report, or that you helped them in one way or another to write what was actually seen [during the inspection]. (Veterinarian A 2023-04-24)

Another interviewee said it is difficult not to let one's personal opinions shine through. The interviewee stated that he/she has experienced a lot of problems with inspectors where animal keepers have had their animals taken by the CAB. Consequently it has led to financial consequences for the animal keepers and thus frightened animal keepers about inspections. Because of this, he/she chooses to help

animal keepers with non-compliances instead of reporting to the CAB. Further he/she stated that:

It is such huge costs to contest this [non-compliances] for animal keepers. Actually, I have many times told people [animal keepers] who have had problems and where CABs action of taking in charge of animals has been approaching, that it is just as good that you euthanize the animals. This is not going well. Stop having animals and do other things because you will never get out of this [get in order with your animals and the CAB] (Veterinarian B 2023-04-24)

One interviewee who felt able to be influenced by his/her view, stated that your own opinion is absolutely decisive. The interviewee meant that we have a very good legislation in Sweden, and that he/she think that production, animal health and animal welfare go hand in hand. Further, he/she meant that if you had had a different approach, you might have answered or acted in a different way on the farm. One of the interviewees who earlier worked as a county veterinarian stated that:

Maybe it [the impression] can [influence the handling of questions]. If someone is trying to get me to think that the CABs are just stupid, it won't work on me. I am not falling into that trap. In the end you have your work task, and it is quite easy to deal with it, because nobody wants their neighbour who doesn't take care of animals to escape from that. No one wants animals to be tortured. It is just that they [the animal keepers] don't see it or that they have missed what is so close to themselves. (Veterinarian C 2023-05-22)

3.2.4 Veterinarians' role in relation to the legislation and the official control

All interviewees generally said that they experience that animal keepers expect a veterinarian to be able to answer questions about the animal welfare legislation and the control. All veterinarians stated that they had experience of these expectations because animal keepers turn to them, asking questions and want to reason about the topics. One veterinarian said, "*They can call us in the middle of the night and know that we will always come if needed, so that creates a trust and a relationship that means you can probably ask*" (veterinarian D, 2023-04-24). Another said "*We are probably expected to know or at least find out what applies. They don't always feel so comfortable with authority figures otherwise, so to speak*" (veterinarian A, 2023-04-24). A third interviewee who meant that expectations may come from the fact that veterinarians also have a clear mission regarding animal welfare, in terms of the report obligation and the animal welfare declaration, said:

We are like a sounding board for these animal herds, and I think that's probably where they might also see that they have some kind of competence close at hand that they can kind of turn to, and then it's quite natural that you take it with your veterinarian. (Veterinarian E, 2023-05-22)

When asked about what role they consider themselves to have in relation to the legislation and the control, several veterinarians mentioned the obligation that animal health professionals in Sweden have to report to the CAB when animals are assumed not being kept or cared for in accordance with the legislation. However, it appeared that veterinarians want to solve problems with dialogue or help the animal keeper to correct non-compliances before reporting it to the CAB, and that there is a risk for veterinarians of not being able to get back to the animal keeper if they report everything. It emerged that it may therefore happen that veterinarians only report when there is a risk of injuries to the animals. It also emerged that veterinarians can scare the animal keepers a bit with the CAB but would not report unless there is a risk of injuries to the animals. Furthermore, several veterinarians interviewed mentioned that they have a role to inform animal keepers when non-compliances are seen at a farm or in a stable, and a role to make sure that the legislation is followed. One veterinarian stated that he/she had been involved in the CABs follow-up of cases, and that he/she in certain cases has done his/her own assessment of the animals and then helped the animal keeper to write answers based on that. Some veterinarians mentioned that farmers have wanted them to accompany during inspections.

4. Discussion

4.1 Context of animal welfare questions

Overall, the results show that veterinarians receive questions about animal welfare legislation and animal welfare control from farmers or horse keepers at occasional farm visits, and that the most frequently asked questions occur before sending animals to slaughter, before or after an animal welfare inspection, and when animal keepers wonder what applies according to the legislation. The result also shows that veterinarians who work with pigs experience that questions related to animal welfare legislation and official control occur more often than veterinarians who work with cattle, horses, goat and sheep.

4.1.1 What influence which questions farmers and horse keepers ask veterinarians?

When respondents estimated the occurrence of five different animal welfare questions, the most common question compared to the other questions, was about what applies according to the animal welfare legislation. On the other hand, veterinarians receive the least number of questions about where to find the legislation. This could mean that farmers and horse keeper find the legislation, but that they have difficulty understanding it or comply with it. Similarly, Lundmark Hedman et al., (2022a) found that several dairy farmers felt that the legislation contain requirements that are complicated or difficult to comply with. Another possible reason could be that farmers find and understand the legislation but ask what applies as an extra assurance. The latter could be due to animal keepers being worried about inspections, which several veterinarians stated that they experienced that animal keepers are (Figure 5).

Based on the questionnaire as well as the interviews, another frequently asked question seems to be about assessment of animals before slaughter. According to a previous study in Jönköping (Nilsson, 2016), the number of notifications from official veterinarians at slaughterhouses has greatly increased since the draft of the guidance for control authorities at slaughterhouses came in 2014 (Dnr 31-29811). This year, a new version of the guidance for inspections at slaughterhouses has been

decided (Jordbruksverket, 2023c). The guidelines contribute to sharper assessments at slaughterhouses as it makes it easier for official veterinarians to detect deficiencies. Deficiencies that are discovered at slaughterhouses may indicate deficiencies in the animal husbandry at the farm, which may cause the animal keeper to be prioritized for an inspection (Jordbruksverket, 2023c). This could likely be something that worry farmers. A previous study found that Swedish pig transport drivers feel stressed about being reported to the CAB (Wilhelmsson et al., 2021) as identified deficiencies at the slaughterhouse also can be traced to the animal transport (Jordbruksverket, 2023c). New guidelines also mean new interpretations of the requirements for the farmers to deal with. Taken together, these can be conceivable factors that can contribute to the occurrence of questions concerning slaughter. In addition, worth investigating further is the information that official veterinarians at slaughterhouses send to the CAB, as it emerged in the interviews that there is often great confusion about this.

In the interviews it emerged that farmers working with cattle and pig ask questions to veterinarians before and after inspections. A couple of interviewees suggested that farmers ask questions due to anxiety about inspections, which could probably be a reason why questions arise before inspections. Lundmark Hedman et al., (2022a) found that many dairy farmers are worried before inspections by the CAB, and that the main reasons for this are the risk of financial consequences (e.g., expensive to correct non-compliances or risk for deduction in EU subsidies due to not fulfilling cross-compliance) and the feeling of powerlessness. This may be because the CAB can make decisions that can have major financial consequences for the animal owner, which in turn can affect both businesses and financial security if the legislation is not complied with. Another reason for farmers' concern about inspections may be that they have heard of any other animal keeper who has had problems with inspections. In Lundmark Hedman et al., (2022a) they found that the most common source of information for a farmer regarding an animal welfare inspection was other farmers, i.e., they ask each other how the official control works. In the results of this study, there was a significant correlation between farmers raising problems with the control and veterinarians having a worse impression of the control, which suggests that we are influenced by the experiences of others. Furthermore, a likely reason why farmers turn to veterinarians after inspections may be to discuss the inspection or to ask for help with non-compliances. It is likely that farmers see veterinarians as someone who can help, as several interviewed veterinarians stated that they tend to help farmers in different ways around the official controls.

4.1.2 Factors associated with the occurrence of questions

The statistical analyses showed that veterinarians working with horses receive fewer questions about legislation and control than veterinarians not working with

horses. There are several possible theories about why horse keepers do not ask questions about legislation and control as often as farmers. A decisive factor is probably that questions about slaughter are not current for horse keepers in the same way as for farmers, which is otherwise a common topic for farmers to discuss with veterinarians. In a previous study on Swedish trotting horse trainers, they found that trotting horse trainers generally have positive experiences of inspections and that most find it easy to know what is expected in order to comply with the legislation (Lundmark Hedman et al., 2022b). These findings can possibly be related to the low occurrence of questions about legislation and control among horse keepers. Further, it can be seen as financially more difficult to be a farmer than a horse keeper, as not complying with the animal welfare legislation as a farmer can have greater financial consequences. Furthermore, Lundmark Hedman et al., (2022b) found that most trotting horse trainers had the trotting horse business mainly as a hobby and not as their only income, which may be an argument for less concern about inspections.

From the questionnaire it also emerged that veterinarians working with pigs significantly more often receive questions about animal welfare legislation and animal welfare control than veterinarians not working with pigs. This agreed well with what emerged in the interviews. However, veterinarians working with cattle received fewer questions about the legislation than veterinarians not working with cattle. One reason why veterinarians working with pigs receive more questions about legislation and control may be due to the fact that considerably more pigs are slaughtered in Sweden every year compared to cattle (Jordbruksverket, 2023b), while slaughter in this study has proven to be a topic farmers like to discuss and ask their veterinarians about. Furthermore, there are fewer pigs and companies having pigs in Sweden compared to cattle (Jordbruksverket, 2022a). One theory is that pig farmers feel more alone as they have fewer other farmers to reason about legislation and control with, and that they consequently see their veterinarian as a valuable advisor and conversation partner. A previous study has investigated perceptions of the animal welfare control among dairy farmers in Sweden (Lundmark et al., 2022a). To our knowledge, no similar study has been done regarding the perception among pig farmers in Sweden. Differences in the view of the official animal welfare control could otherwise possibly have given an indication as to why the occurrence of questions about legislation and control differs between farmers working with cattle and pig. However, worth keeping in mind is that some of the interviewed veterinarians who worked with cattle stated that they rarely receive any questions about legislation or control, but said that they reason and discuss the topics now and then with farmers. Legislation and control can thus be a common topic of conversation even for veterinarians who stated in the questionnaire that questions rarely occur.

The occurrence of questions about legislation and control was also related to the veterinarians' work experience, where those who have worked as veterinarians for a longer time felt that they receive more questions. One reason for this may be that veterinarians with longer work experience have more established and closer contacts with their customers. Another reason may be that farmers see veterinarians with longer work experience as a major source of information on animal welfare legislation and control. Several of the interviewed veterinarians stated themselves that their knowledge of legislation and control has mainly been obtained through work experience and collaborations with the CAB. Further, it is possible that veterinarians with more experience in these areas create a climate for dialogue and questions related to animal welfare for their customers.

4.2 Are veterinarians prepared to answer questions about the legislation and the official control?

The veterinarians in this study generally rated their knowledge of the animal welfare legislation higher than of the animal welfare control. This agrees well with what questions they feel they are most prepared to answer, where a greater proportion think they can answer questions about the legislation than the control. The veterinarians' knowledge about the control was more scattered than about the legislation, which means some veterinarians have great knowledge about the control while some have almost no knowledge at all. These differences regarding the official control may, among other things, be due to whether or not the veterinarians have furthered their education in the area, as the statistical analyses showed that veterinarians' ability to answer questions about the control increased with furthered education after the veterinary program. Further, a higher and more even level of knowledge about the legislation among veterinarians can be related to which areas veterinarians themselves believe veterinarians should have knowledge about (see chapter 3.2.2), and what questions they believe themselves expected to be able to answer (see chapter 3.1.3). One out of five veterinarians did not consider themselves expected to be able to answer questions about the control, while almost all veterinarians think they should be able to answer questions about the legislation. This may be due to the fact that veterinarians have an animal welfare task in form of the report obligation (chapter 8, section 18 Animal Welfare Act 2018:1192), which in a way requires that veterinarians have sufficient knowledge of the legislation to know what they are basing their reports on. However, farmers ask veterinarians questions about the official control about as often as questions about the animal welfare legislation, which makes veterinarians knowledge in both areas relevant.

Several interviewed veterinarians feel that veterinarians don't get the knowledge needed about the legislation and control from the veterinary education. Instead, they believed that knowledge of this rather come with work experience. This agrees with the questionnaire were further education after the veterinary program proved to be a way to learn about these subjects. According to Neijdebro (2022), few veterinarians feel that there is support available in animal welfare cases. Furthermore, the veterinarians in this study requested more calibration with the CAB. These findings may be an indication that veterinarians do not perceive themselves to have sufficient knowledge to deal with questions they face around legislation and control out on farms, which is reasonable as the current curriculum for veterinarians only includes a small course in animal welfare and public administration (Swedish University of Agricultural Science, 2022). Further, a large proportion of the veterinarians in this study stated that they have accompanied the CAB on animal welfare inspections, which shows a close connection between animal health and animal welfare. At the same time, the veterinarians reflect a feeling that animal keepers assign veterinarians a considerable part of the animal welfare discussion, which makes veterinarians' preparedness in the area significant. However, according to the interviewed veterinarians, they seem to have a routine of looking up questions they cannot answer, which increases the chance that they will provide an objective and correct answer to the animal keepers.

4.3 Animal keepers' trust in veterinarians

The responses in this study reflect a feeling of Swedish farmers having trust in veterinarians. British dairy farmers have also been found to see veterinarians as trusted advisors (Sumner et al., 2020). According to the veterinarians interviewed in this study, veterinarians seem to have a clear role as conversation partners for farmers. It emerged that farmers turn to veterinarians and want to ask or reason about legislation and control, and veterinarians experience that farmers have an expectation that the veterinarians will be able to answer questions in the area. Furthermore, it emerged that veterinarians want to be at hand for farmers by helping with non-compliances, accompany on inspections or by making their own assessments of animals, which gives a feeling of a mutual relationship between farmers and veterinarians. Similarly, interviewed veterinarians in England believe that mutual trust characterizes most veterinarian-farmer relationships (Ruston et al., 2016). According to Ruston et al., (2016), veterinarians mean that trust is built over time through dialogues, continuous contact and availability, rather than a result of some sort of assumed authority by the veterinarians. Similarly, veterinarians interviewed in this study seemed to value these things highly. One interviewee believed that farmers do not generally trust authority figures. In line with the Animal Welfare Act (2018:1192), the CAB can make decisions which leads to

major consequences for the animal keeper if the legislation is not complied with, which likely makes it difficult for inspectors to create similar trustful relationships with farmers and horse keepers.

Several interviewees stated they firsthand believe in dialogues with the farmer or helping with non-compliances before they report to the CAB, while it emerged that it is hard to keep the customer relationship if veterinarians report. The latter can be assumed to be a financial problem among veterinarians. These findings suggest that the veterinarian-farmer relationship affects the veterinarians' use of the report obligation. Similarly, Lundström (2015) found that the heaviest factor in whether veterinarians report non-compliances or not was the relation with the animal keeper. Lundström (2015) means that veterinarians may see a report as a betrayal of the trust that exists between the veterinarian and the animal keeper, which the veterinarians do not want to be associated with. Further, Lundström (2015) means that it becomes a betrayal when veterinarians call the CAB, as most animal keepers do not see it as any help. How not using the veterinary report obligation ultimately affects the animals is not certain, but may pose a risk that the level of welfare decreases. However, the veterinarians themselves seem to have a great interest in helping the animals. Whether veterinarians should primarily prioritize the interest of animal keepers (the customer) or the animals (the patient) is a fundamental question for veterinarians, which also makes animal keeper-veterinary (client-veterinary) relationship an ethical dilemma. This dilemma, among others, is specified by Morgan & McDonald (2007) in an article about ethical dilemmas in veterinary medicine.

4.4 Dissatisfaction with the official control

Veterinarians generally have a more negative impression of the animal welfare control in relation to the animal welfare legislation. This view seems to be shared with farmers, as the veterinarians to a greater extent stated that farmers have better experiences of the legislation than the control. Some reasons for veterinarians' dissatisfaction with the control proved to be varying quality of the inspections across the country, and slow actions on animal welfare reports. Previous studies have also found that there is a distrust among veterinarians for the CAB (Lundström, 2015; Redgewell 2023), which can be thought to be a consequence of their impressions of the official control. In this study, it emerged that veterinarians' impressions are primarily based on own experiences, but also on what they have heard from farmers and other veterinarians. One can assume that veterinarians who themselves have worked with animal welfare cases have more own experiences of the official control than veterinarians who have not worked with animal welfare cases. Accordingly, it is relevant if the impression of the control differs between veterinarians who have worked close to the control compared to those who haven't

and who can be assumed to base their impressions on what they have heard. However, there was no significant association between veterinarians' impressions of the control and whether they have worked with animal welfare cases or not. Although the CAB's handling of animal welfare cases tends to become a basis for spreading of rumors if the CAB's work is not reported objectively (Landgren, 2021), this finding may perhaps be an indication that what is retold about inspections corresponds fairly well to the reality among veterinarians.

4.4.1 Consequences of the view of the official control

As farmers traditionally have a great trust in veterinarians (see chapter 4.4), it is possible that veterinarians' impression of the animal welfare control influences the view of animal keepers. In this study we found that veterinarians who experience that farmers raise problems with the control, have a more negative view of the control themselves. The other way around, it is likely that veterinarians' impressions matter to farmers, and that a vicious circle is created concerning animal welfare control between animal keepers and veterinarians. However, even if half of the interviewed veterinarians stated that the atmosphere when discussing animal welfare out on farms is irritated or anxious, some also stated it is more undramatic to discuss animal welfare nowadays and that farmers more often say that the inspections are going well. This difference experienced over time can be seen as a positive development of the official control and a step towards a more positive view of inspections.

Veterinarians' view of the official control proved to be able to influence how they deal with questions about it. Accordingly, it emerged that their way of acting can be affected. The interviewees gave the impression that veterinarians who do not seem quite satisfied with the animal welfare inspections tend to help animal keepers around inspections in order to facilitate for the animal keeper, and that the involvement increases when veterinarians themselves have experienced problems regarding the animal welfare control. As several veterinarians only partially or slightly agreed with the statement that they have sufficient knowledge to deal with questions of legislation and control, it is likely that not all of them are prepared for this task. Impressions about the official control may also influence whether veterinarians report non-compliances or whether they choose to help the animal keeper themselves. As many veterinarians think the CABs processing times are too long, and that the inspectors have varying knowledge, it is possible the veterinarians see less point in reporting. This agrees well with Neijdebros' (2022) study which found that one of the most common reasons why veterinarians were less likely to report was due to low trust in the CAB and disbelief that reporting would actually have an effect. Taken together, it adds up to veterinarians placing a surprising amount of responsibility on themselves to resolve situations where either animals or clients (animal keepers) are at risk, which leads to a lot of unpaid extra work that

the employers do not require from the veterinarians, but which they do anyway. This may affect and pressure the work situation of veterinarians, which among other things, arise as a result of mistrust of the work of the CABs.

4.5 Method discussion

It cannot be excluded that “bias” affected the results of the study, as it is unclear what reasons there are for some to have answered the questionnaire and participated in the interviews and others not. It is conceivable that veterinarians with a greater interest in animal welfare were more likely to respond to the questionnaire and to sign up for interviews, and that this may have had an effect on responses to questions about veterinarians’ knowledge and view within the area. Further, with regard to the subject, there may be a risk that participants did not answer sincerely to protect themselves or someone else, or because of prestige (Ejvegård, 2009) when asked to estimate their knowledge in various fields. Hopefully the risk for this was reduced through anonymous questionnaires but may have been more evident during the interviews, although the results published were anonymous.

4.5.1 Questionnaire

Web surveys guarantee a rather short time frame for the collection of responses and are cost and time saving (Lefever et al., 2007). A web-based questionnaire was thus chosen based on its easy accessibility, costs and the limited time frame of the study. Netigate is user friendly both for creators and the respondents, and questionnaires are easily spread by creating shareable links for the respondents. Further, Netigate instantly compiles the responses, making the collected data easy to work with. Netigate can also generate raw data files useful for statistical analyses. Distributing the questionnaire via employers, SVF and Facebook groups was a convenient way to reach out to veterinarians working with farm animals and/or horses in Sweden. However, it is not possible to determine how many large animal veterinarians in Sweden the questionnaire actually reached. No conclusions can therefore be drawn about the response rate in the questionnaire. According to SSB, the number of employed veterinarians in Sweden in 2021 was 2769 (Statistiska centralbyrån, 2021), but we have no knowledge of how many of these that work with farm animals and horses. Possibly a larger group of respondents would have resulted in a wider and more differentiated sample, but due to the limited time frame of the study there were difficulties in collecting more data. One challenge with online questionnaires is the response rate, which is often very low compared to offline questionnaire methods (Siva Durga Prasad Nayak and Narayan, 2019). A way to improve the response rate could therefore have been to send questionnaires in paper form for veterinarians who prefer this, which, however, had required more time and

access to veterinarians' postal addresses. Of those who responded to the questionnaire, 73% were women and 26% were men. According to SSB, the gender distribution of employed veterinarians in Sweden are 81% women and 19% men (Statistiska centralbyrån, 2021). As there was no opportunity to influence the distribution of the questionnaire in terms of gender, we don't know whether the questionnaire reached women and men to an equal extent. No firm conclusions can thus be drawn about whether men were more likely to answer the questionnaire than women, even if the distribution suggest so. Another difficulty with questionnaires is that the respondents have no opportunity to ask follow-up questions. To ensure that the questions were clear and interpreted in the same way, test runs were made before the questionnaire was finalized.

4.5.2 Interviews

Interviews were carried out as a complement to the questionnaire, which gave the opportunity to capture more nuances and a depth in the answers. Due to the limited time frame of the study, the number of interviews were adapted. After the nine completed interviews, however, the material was considered filled as the same or similar things returned in the interviews. The advantage of interviews is the flexibility and possibility of follow-up questions. On the other hand, interviewees may deviate from the main topics during interviews and go into topics that are not as relevant or interesting for the research questions. Qualitative data is also time-consuming and more difficult to compile than quantitative data. There is also a risk of influence from the interviewer during the interviews, which was tried to be prevented by starting from objective pre-determined questions.

4.6 The study in relation to ethics and sustainability

4.6.1 Sustainability aspects

Every fifth veterinarian experience that animal keepers are worried before inspections and that they raise problems with the official control. Several veterinarians themselves also express dissatisfaction with the official control. From a social sustainability perspective, society's trust in authorities is central for the CAB's work being able to function well. Lääkkö-Roto and Nevas (2014) found an association between Finnish restaurant business operators' attitudes towards official controls and the restaurants level of hygiene, where those with more positive attitudes towards official inspections had fewer non-compliances in food hygiene. In a similar way, a willingness to follow the animal welfare legislation and having a positive attitude to being inspected can lead to a higher level of compliance with the legislation, while an opposition to the CAB can make the work of

inspectors more difficult. Lundmark Hedman et al., (2022a) and Lundmark Hedman et al., (2022b) found that the perceived competence of animal welfare inspectors is very important for the impression of the inspection. An important part of compliance with the legislation and trust in the CAB is thus knowledgeable inspectors, which several veterinarians in this study believe is something that needs to be improved. Inspectors with perceived insufficient knowledge can reduce the CAB's credibility and contribute to concern and frustration among animal keepers, which in turn can affect the workload of both inspectors and veterinarians who have to deal with animal keepers' concern or frustration. From a health and economic perspective this would be unsustainable, since Mansour (2016) states that work-related stress leads to employees feeling bad and acting worse, which also has serious financial impacts. From a broader sustainability perspective, this could affect the animal welfare work and in turn the animal welfare level in Sweden.

The knowledge among veterinarians about the official control seems to be lower than about the legislation. Further, Neijdebro (2022) showed that few veterinarians feel support and guidance for animal welfare cases. Increased knowledge and support regarding the official control can thus be valuable for veterinarians.

With better dialogue between the CAB and veterinarians, as well as continuously providing veterinarians with updated animal welfare information, the work around inspections could flow more easily. This could help reduce the workload of inspectors as well as veterinarians, which is relevant considering that many veterinarians believe that the CAB lack recourses. Cooperation between veterinarians and the CAB and by continuously providing veterinarians with updated animal welfare information can consequently also make veterinarians feel more secure in their professional role, while they have the possibility to provide animal keepers with correct and updated information. Since farmers trust in veterinarians contributes to veterinarians receiving animal welfare questions, it thus becomes an important aspect how veterinarians face these discussions and how it influences the animal welfare discussion as a whole in society.

4.6.2 Ethical aspects

The anonymity of the respondents has been carefully taken into account during the writing process and when storing material. All participants were well informed about the aim of the study, storing of collected material, the anonymity as well as their right to cancel the questionnaire and interviews at any time. Participation was thus completely voluntary. While respondents of the questionnaire were anonymous, contact details of the interviewees were necessary to organize and perform the interviews. In published form, however, no information that can be personally linked to someone has been used. Further, quotes have been named with "veterinarian A", "veterinarian B" and so on to protect the participants and allow them to freely express their thoughts. When designing the questionnaire, emphasis

was also put on not asking for too much personal information which together could be perceived as the questionnaire not being anonymized. However, some background information about the respondents was necessary and valuable for the results, which meant this had to be carefully weighted. Emphasis was also put on not to ask questions with preconceived notions. The study and the questionnaire were approved by the Swedish Ethical Review Authority (reference number: Dnr. 2022-07094-01).

4.7 Future research and applicability of the study

Sweden is generally considered to have a high level of animal welfare. However, problems with compliance of the animal welfare legislation have been identified (Jordbruksverket, 2023a; European Commission, 2022a). To comply with the legislation, animal keepers need to understand the requirements and need a will to live up to it. This study gives insight into the role of veterinarians in relation to the animal welfare legislation and animal welfare control, and shows that farmers and horse keepers turn to veterinarians to discuss the topics. Many veterinarians think they are expected to have knowledge about the animal welfare legislation and the official control, but do not feel they get the knowledge needed from the veterinary education. Since animal welfare is becoming an increasingly relevant topic in society (European Commission, 2016) and a topic veterinarians consequently encounter, further studies can in advantage investigate whether it is relevant to implement the area to a greater extent in the curriculum of the veterinary program. Further studies should also investigate how the CAB and veterinarians can work more effectively together to achieve a higher level of animal welfare in Sweden. Accordingly, veterinarians' wishes for more calibration with the CAB should be taken into account, as it can indicate a desire among veterinarians to learn more in the field. Furthermore, calibration between veterinarians and the CAB can provide veterinarians with valuable knowledge that can prepare veterinarians to handle questions about the legislation and the control.

Further studies are also suggested to look more deeply into why questions about slaughter are so common, and why pig farmers tend to ask their veterinarians more about the animal welfare legislation and control than other farmers.

5. Conclusions

According to this study, large animal veterinarians experience that they receive questions about the animal welfare legislation about as often as questions about the animal welfare control when visiting farmers and horse keepers. The majority of veterinarians stated that questions occur at occasional farm visits, and it emerged that the most common questions are around slaughter, inspections, and what applies according to the legislation. It also appeared that veterinarians who work with pigs experience that they receive more questions than other veterinarians. A greater proportion of veterinarians consider themselves to have enough knowledge to answer questions about the legislation than the control. However, those who in some way had furthered their education after the veterinary program regarding legislation and control were more prepared to answer questions about the official control and how it is carried out. Further, the result of the study reflects a feeling of animal keepers having trust in veterinarians and that this contributes to veterinarians having a considerable part in the discussions around legislation and control. Consequently, veterinarians' knowledge and impressions about legislation and control becomes significant. Generally, the veterinarians had a more negative view of the animal welfare control than the animal welfare legislation, which turned out to be able to influence how veterinarians handle questions about the control.

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Popular science summary

The Swedish animal welfare legislation aims for animals to have a good welfare, which means that animals should feel good both mentally and physically. The County Administrative Board is responsible for ensuring that the animal welfare regulations in Sweden are followed, which they control by performing animal welfare inspections. Since the regulations are based on many different aspects there are also divided opinions regarding the content of the legislation, and problems with compliance of the legislation have been identified. In a recent study, it turned out that Swedish dairy farmers quite often would turn to their veterinarian for information about how an animal welfare control is carried out. In Sweden, it is not the veterinarians who carry out animal welfare inspections. However, many farmers have close contact with veterinarians and animal health can be seen as closely linked to animal welfare. Against this background, this study aimed to investigate how often Swedish veterinarians are asked questions about the animal welfare control and the animal welfare legislation when they visit farmers and horse keepers for treatment or counselling. The study also aimed to investigate which questions that are commonly asked, in which way veterinarians handle questions, and what the veterinarians' views on the legislation and the control are. This was done by distributing a questionnaire to veterinarians in Sweden who work with farm animals and horses. Some interviews with veterinarians were also performed to study the subject more deeply. The result showed that veterinarians are asked questions within the subjects at occasional visits to the farms. The questions usually occur before the animal keepers are to receive an inspection, which is probably due to animal keepers being worried before they get an inspection of their animals. Questions about the animals condition before they are sent to slaughter was also one of the most common questions veterinarians received, and also questions related to what in general is stated in the animal welfare legislation. It emerged that veterinarians working with pigs are the ones who receive the most questions, while veterinarians who work with horses receive the least. The findings may relate to horse keepers being less financially exposed and thus less worried about inspections, while pig farmers are worried about whether they meet the requirements related to the animals condition when the pigs are sent to slaughter. The veterinarians themselves felt that they had more knowledge of the animal welfare legislation than the animal welfare control, and they had a more positive

view of the legislation than the control. Further, the result of the study reflects a feeling of Swedish farmers having trust in veterinarians, leading to farmers turning to their veterinarian to discuss the topics. Consequently, it becomes an important aspect how veterinarians face these discussions and how it influences the animal welfare discussion as a whole in society.

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Appendix 1

In an ongoing research project at the Swedish University of Agricultural Science (SLU) on animal keepers' experience of animal welfare inspections, Swedish dairy farmers stated that they often ask their veterinarian for advice before an animal welfare inspection. We are therefore curious on how often you as a veterinarian get questions about official animal welfare controls (those carried out by the County Administrative Board) and animal welfare legislation when you are visiting animal keepers, what type of questions they are and if you feel confident in answering/handling the questions.

The questionnaire is estimated to take approximately 15 minutes to answer. Participation is completely voluntary.

If you have questions about the survey, you can contact:

Frida Landgren (e-mail: fridalandgrens@hotmail.com) masters student at SLU

1. What gender are you? Gender means gender identity, i.e., the gender you identify yourself as.
 - Women
 - Men
 - Other
 - Does not want to disclose

2. What is your age?
 - 20-30
 - 31-40
 - 41-50
 - 51-60
 - 61-70
 - Over 70 years

3. In which country did you study to become a veterinarian? If you studied in several countries, choose the one you mainly studied in.

- Sweden
 - Denmark
 - Norway
 - Finland
 - Other EU-country
 - In a country outside EU (supplemented within the EU)
4. How many years have you worked as a veterinarian (clinically and/or as a herd veterinarian)?
- <1 year
 - 1-4 years
 - 5-10 years
 - 11-20 years
 - 21-30 years
 - >30 years
5. Which animal species (farm animals and horses) do you mainly work with?
Multiple choices are possible.
- Horse
 - Pig
 - Cattle
 - Sheep
 - Goat
 - Poultry
 - Other: _____
6. Approximately how many farms do you normally visit during a working week in your role as a veterinarian?
- 0-5
 - 6-10
 - 11-15
 - 16-20
 - 21-25
 - 26-30
 - More than 30
7. Have you furthered your education regarding animal welfare legislation and/or animal welfare control by taking courses on this after your veterinary education?
- No

- Yes, I have taken the following courses: _____
8. Is it a part of your duties to make animal welfare declarations according to ViLA for conditionals drug use?
- Yes
 No
9. Do you have experience of having worked with animal welfare inspections yourself or assessments and case management based on the animal welfare legislation? For example as an official veterinarian at a slaughterhouse, as a county veterinarian or as something else.
- No
 Yes, as an official veterinarian
 Yes, as an county veterinarian
 Yes, as something else: _____
10. If you have worked/are working as an official veterinarian, which animal species do/have you mainly worked with? If you have not worked as an official veterinarian, skip this question.
- Horse
 Pig
 Cattle
 Sheep
 Goat
 Poultry
 Other: _____
11. How often do you experience that you get questions about the animal welfare legislation from animal keepers when you are out on farms and visiting farmers or horse keepers?
- Never
 At occasional farm visits
 At some farm visits
 At the majority of farm visits
 At most farm visits
 In principle at every farm visit
12. How often do you experience that you get questions about the official animal welfare control from animal keepers when you are out on farms and visiting farmers or horse keepers?

- Never
- At occasional farm visits
- At some farm visits
- At the majority of farm visits
- At most farm visits
- In principle at every farm visit

13. How often do you experience that you get questions about animal welfare that is NOT about the animal welfare legislation or the official animal welfare control from animal keepers when you are out on farms?

- Never
- At occasional farm visits
- At some farm visits
- At the majority of farm visits
- At most farm visits
- In principle at every farm visit

14. How often do you get these types of questions from animal keepers?
Rate how often you get the questions that follow below:

14.1. Questions about how the CABs animal welfare control is carried out.

- Never
- At occasional farm visits
- At some farm visits
- At the majority of farm visits
- At most farm visits
- In principle at every farm visit

14.2. Questions about how to find the animal welfare legislation that applies.

- Never
- At occasional farm visits
- At some farm visits
- At the majority of farm visits
- At most farm visits
- In principle at every farm visit

14.3. General questions about what applies according to the animal welfare legislation.

- Never
- At occasional farm visits

- At some farm visits
- At the majority of farm visits
- At most farm visits
- In principle at every farm visit

14.4. Specific questions about whether you consider that the animal keeper lives up to the animal welfare legislation on certain criterias.

- Never
- At occasional farm visits
- At some farm visits
- At the majority of farm visits
- At most farm visits
- In principle at every farm visit

14.5. Questions about how to remedy non-compliances that have been reported at the CAB's animal welfare inspections.

- Never
- At occasional farm visits
- At some farm visits
- At the majority of farm visits
- At most farm visits
- In principle at every farm visit

14.6. Is there any other type of questions related to animal welfare control or animal welfare legislation that you feel you get often? _____

15. Do you think that you as veterinarian are expected to be able to answer questions regarding the animal welfare legislation?

- Yes, to a great extent
- Partially
- No, not at all
- Have no idea

16. Do you think that you as veterinarian are expected to be able to answer questions regarding the animal welfare control?

- Yes, to a great extent
- Partially
- No, not at all
- Have no idea

17. Below you will find a number of statements. Rate the extent to which you agree on a scale from 1 (do not agree at all) to 5 (agree completely).

17.1. *“Animal keepers generally have good experience of the animal welfare legislation (e.g. finding the legislation, understanding it and live up to it).”*

- 1 (strongly disagree)
- 2 (agree to a low level)
- 3 (partially agree)
- 4 (strongly agree)
- 5 (completely agree)

17.2. *“Animal keepers generally have good experience of the animal welfare control”.*

- 1 (strongly disagree)
- 2 (agree to a low level)
- 3 (partially agree)
- 4 (strongly agree)
- 5 (completely agree)

17.3. *“Animal keepers often raise problems with the animal welfare control”.*

- 1 (strongly disagree)
- 2 (agree to a low level)
- 3 (partially agree)
- 4 (strongly agree)
- 5 (completely agree)

17.4. *“Animal keepers show they are worried before an animal welfare inspection”*

- 1 (strongly disagree)
- 2 (agree to a low level)
- 3 (partially agree)
- 4 (strongly agree)
- 5 (completely agree)

18. How good knowledge do you feel you have about the animal welfare legislation? Rate your knowledge from 1-10, there 1=none at all and 10=very good.

- 1
- 2

- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

19. How good knowledge do you feel you have about the official animal welfare control? Rate your knowledge from 1-10, there 1=none at all and 10=very good.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

20. Below you find a number of statements. Rate the extent to which you agree on a scale from 1 (do not agree at all) to 5 (agree completely).

20.1. *“I have good enough knowledge of the animal welfare legislation to be able to answer questions about which requirements that are set”*

- 1 (strongly disagree)
- 2 (agree to a low level)
- 3 (partially agree)
- 4 (strongly agree)
- 5 (completely agree)

20.2. *“I have good enough knowledge of animal welfare controls to be able to answer questions about how these are performed”*

- 1 (strongly disagree)
- 2 (agree to a low level)
- 3 (partially agree)
- 4 (strongly agree)
- 5 (completely agree)

21. What is your general impression of the official animal welfare control (that the CAB carries out)? In the text box further down, there is also the option to develop your answer if you want.

- Very positive
- Positive
- Neither positive nor negative
- Negative
- Very negative
- Have no idea

Here you have the opportunity to develop our answer about your impression of the official animal welfare control: _____

22. What is your general impression of the animal welfare legislation? In the text box further down, there is also the option to develop your answer if you want.

- Very positive
- Positive
- Neither positive nor negative
- Negative
- Very negative
- Have no idea

Here you have the opportunity to develop our answer about your impression of the animal welfare legislation: _____

23. Have you ever used the veterinary report obligation and reported an animal keeper to the County Administrative Board?

- Yes
- No

24. Have you ever been hired by the County Administrative Board to assist them in animal welfare cases by write a statement about the animals it is about?

- Yes
- No

25. To what extent do you agree with the following statement?

“I have a good contact with the County Administrative Board (either county veterinarian or animal welfare inspector)”

- 1 (strongly disagree)
- 2 (agree to a low level)

- 3 (partially agree)
- 4 (strongly agree)
- 5 (completely agree)

26. Do you, as a veterinarian, have any thoughts or experiences regarding the animal welfare legislation/the animal welfare control you would like to share?

27. In addition to the CABs animal welfare inspections, many animal keepers also receive animal welfare checks by private actors, via e.g. Arla, KRAV, IP Sigill and Svensk Travsport. Are these private checks something the animal keepers mention and want to discuss when you are there for a visit?

- Yes, to a great extent
- Partially
- No, not at all
- Have no idea

Here you have the opportunity to develop your answer about private inspections if you want: _____

28. This is the last question of the questionnaire. Do you have any thoughts or comments about the topic of the questionnaire that was not covered in previous questions, or views on the questionnaire itself, please feel free to share it in the box below: _____

Thank you for taking the time answering the questionnaire!

Are you interested in participating in an interview as well? In addition to the questionnaire, there will be a number of interviews performed to gain a deeper understanding of veterinarians' experiences of being asked questions about the official animal welfare control and the animal welfare legislation when they are out on farms. If you are interested in participating in the interview study, click on the link below and you will be taken to a form where you can fill in your contact details.

Click [HERE](#) to access the form.

The interview study and the form are completely separate from the questionnaire, so your questionnaire answers will not be linked with your contact details.

The interviews will be analyzed at group level and the intention is not to draw conclusions about the individual interviewer's attitudes and perspectives. Thus, no personal data from the interviews will be presented.

The form is an expression of interest and is not binding. We will contact you in the spring of 2023 if we want to interview you. We then agree together on how the interview should be performed (telephone, video or personal meeting). You will also get more detailed information about the interview before you need to decide whether you want to participate.

Appendix 2

1. Would you like to briefly describe what you work with as a veterinarian today?
2. In an ongoing study, we have seen that farmers often turn to their veterinarian with questions about animal welfare control and animal welfare legislation. Have you experienced that you receive questions about these things? *Follow-up questions: Do you want to give an example? Do you have any idea why it is common for veterinarians to get these questions?*
3. How often and in what contexts do you feel that legislation and animal welfare control come up as a topic of conversation in your contact with animal keepers?
4. How do you see your role as a veterinarian in relation to the animal welfare legislation and the animal welfare control?
5. Have you ever been asked a question about the animal welfare regulations or animal welfare checks you couldn't answer? *Do you want to give an example? How did you act then? (If you don't have examples – how do you think you would act then?)*
6. How much knowledge do you think a veterinarian should have about the animal welfare regulations, for example animal species-specific regulations?
7. How much knowledge do you think a veterinarian should have about the animal welfare control and how it is performed?
8. Do you feel that animal keepers expect you to be able to answer questions about animal welfare legislation and animal welfare control? In what way do you notice that?
9. Do you feel that you get that knowledge about animal welfare controls and legislation that you need from the veterinary education? *Do you want to develop that? How do you experience it in that way?*
10. What is your general opinion of the CABs animal welfare controls? *Follow-up question: what do you base that opinion on?*
11. When animal welfare control or legislation comes up for discussion, is it usually because the animal keeper feels that there are problems or is the discussions of more neutral/positive character? *Can you give an example? How do you usually respond to it?*

12. Can you experience that your own impression about the animal welfare control or the animal welfare legislation may affect how you answer/deal with questions about animal welfare? *If so, in what way? Can you give an example?*

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