



Report SOTRANS

Farmers, state-of-the-art

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Abstract

Background

In the project SOTRANS, we want to describe the current state of sow transport in Denmark. This will be used as background knowledge when planning the main experiments in the project. A questionnaire was therefore sent to all farmers sending sows for slaughter at Danish Crown, Skærbæk.

Results

The group of farmers is very homogeneous, consisting of men, the average age is 50 years, and they have more than 10 years of experience in working in sow production. He sends 20 or less sows for slaughter once a week or every second week. The main reasons for culling sows are age, mothering capacities and reproduction followed by leg weakness.

Lameness is the main reason for the farmer being doubtful whether the sow is fit for transport or not. It is also the main reason why the driver or the slaughterhouse refuses to drive or slaughter the sow. Too thin/skinny sows are more often a reason for rejecting the sow by the slaughterhouse than by the driver. Half of the farmers do not have a sow transported separately, and only a few farmers use the possibility of separate transport several times a year or once a month.

Most farmers (77%) have a vehicle as a pick-up facility, and the waiting time for the sows is less than 1 hour. The behaviour of the sows, waiting up to one hour, is often assessed as calm, as they lay down if the waiting time is longer than 1 hour.

Conclusion

The group of farmers, sending sows for slaughter, is very homogenous and skilled in assessing the suitability of the sows for transport.

Methodology

Questionnaire

A questionnaire was developed using a combination of closed and open questions. The full questionnaire can be seen in Appendix 1. The software used for the questionnaire was Survey-xact (Rambøll, Århus, Denmark, version 12.8). A link to the questionnaire was sent by mail from Danish Crown to all members who deliver sows to Danish Crown (approximately 900). In total, 576 did open the link, 419 answered the questions with age, gender and position, and 360 answered all questions except the last open questions (which information about transport of sows would you like to have? Are there anything more you would like to know about how the transport influences sows? Do you have any suggestions for how the transport of sows could be optimized?). This is 40% of the possible answers and is regarded as a satisfactory answering percent. No reminder was therefore sent.

The 360 answers were analysed using descriptive data analysis.

Statistics

For all questions, a frequency analysis was performed to describe the distribution of the data. It was aimed to describe how the farmers and the pick-up facilities were in general, and how the variation was. Furthermore, it was aimed to describe the sows sent for slaughter by looking at the reasons for culling the sows and the farmers experience with sending sows for slaughter compared with culling them at the farm. Finally, the farmers' attitude towards sow transport was investigated by asking open questions about the knowledge they think they lack and suggestions for optimization.

Results

The farmers

Demographic

The respondents were quite homogenous: Middle age men, primarily the owner and with a long experience (+10 years) working in sow production. However, as can be seen in Table 1, some variation was found.

Table 1. Characteristics of respondents of the questionnaire.

	Male	Female	Total
Number	337	23	360
Average age	47.8	50.5	50.4
Position			
Owner ¹	97%	70%	95%
Manager/Herdsman	3%	26%	4%
Employee	<1%	4%	1%
Experience < 1 year	<1%	4%	1%
1-5 years	2%	0%	2%
6-10 years	2%	18%	3%
> 10 years	89%	78%	94%

¹Including owners' wife

The distribution of age can be seen in Figure 1. The main part of the farmers was between 40 and 60 years old. Only a few were younger or older.

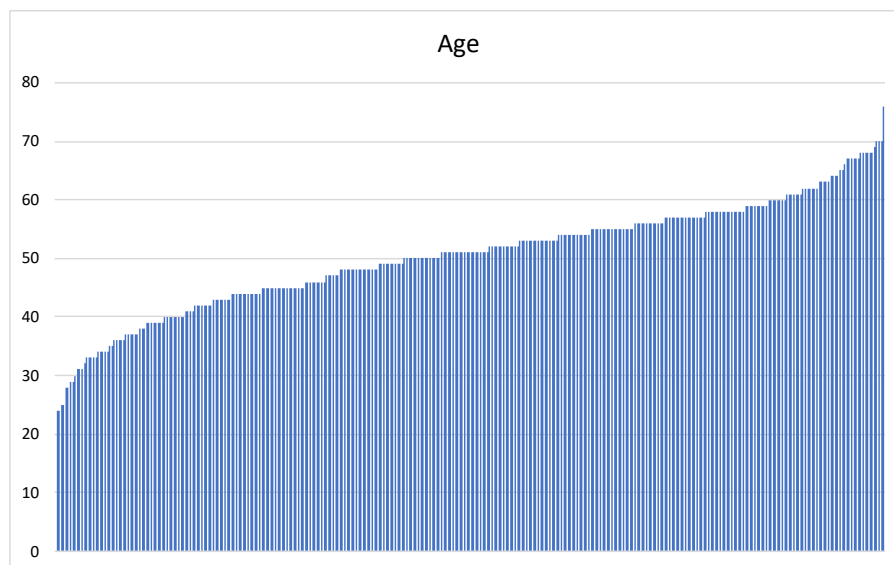


Figure 1. Age of the farmers. Each bar represents one farmer.

There were too few inexperienced farmers (only 20 with less than 10 years of experience) and too few female respondents to be able to segment the farmers according to these characteristics in the following data analysis.

The farms

The main part of the farmers sends sows to the slaughterhouse once a week (33%) or once every second week (42%) while some do it less often (25%), and only one farmer is doing it several times a week. The frequency of how often the farmers send sows to the slaughterhouse was independent of the farmers' age.

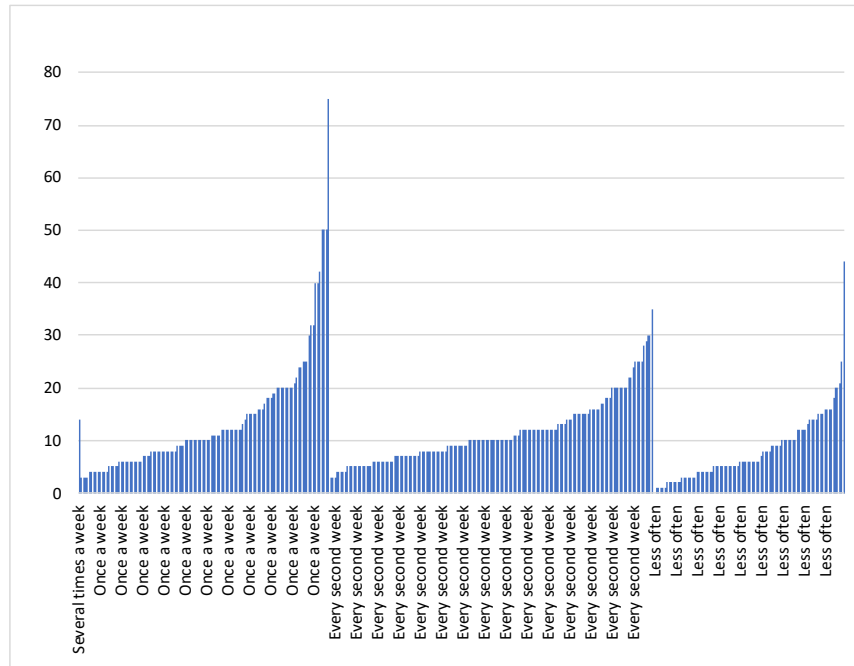


Figure 2. Distribution of how often the farmers are sending sows to the slaughterhouse (x-axis) related to the farmers age (y-axis).

The number of sows sent to the slaughterhouse can be seen in Table 2. The farmers were asked to state the number they sent for slaughter last time instead of just a general question e.g. 'how many do you usually send for slaughter?', to get a more exact number believing that the weekly variation would be covered by having a large number of answers. The average number of sows is quite similar for farmers sending sows for slaughter several times a week, once a week and every second week. However, the variation is considerable, having one farmer sending 75 sows for slaughter in the group sending sows for slaughter once a week. Still, the main part of the farmers was sending 20 or fewer sows for slaughter. Only one farmer was sending sows for slaughter several times a week.

Table 2. Number of sows sent for slaughter.

How often do you send sows for slaughter?	How many sows did you sent for slaughter last time?			
	Average	Min.	Max.	N
Several times a week	13.8	14	14	1
Once a week	14	3	75	117
Every second week	11.5	3	35	152
Less often	8.1	0	44	90

Reasons for culling

The sows

The farmers were asked to give the three most frequent reasons for choosing to slaughter a sow. The question was made as a free choice question, and afterwards, the answers were categorized based on the suggested reasons. Some farmers wrote only one or two answers. As can be seen in Table 3, age, reproduction and mothering capacities were the main reasons for sending a sow for slaughter while health-related problems such as leg weakness and udder inflammation¹ were less frequent.

Table 3. Reasons for sending sows for slaughter (n=360 farmers)

Reason	Frequency
Age	296
Reproduction	197
Mothering capacity	148
Leg and claw problems	97
Performance and results	40
Udder inflammation ¹	36
Breeding index	18
Others	115

Reasons for being in doubt

The farmers were asked 'What are the main reasons for being in doubt whether a sow is fit for transport or not?'. They could choose between several options and could choose as many as they wanted (Figure 3).

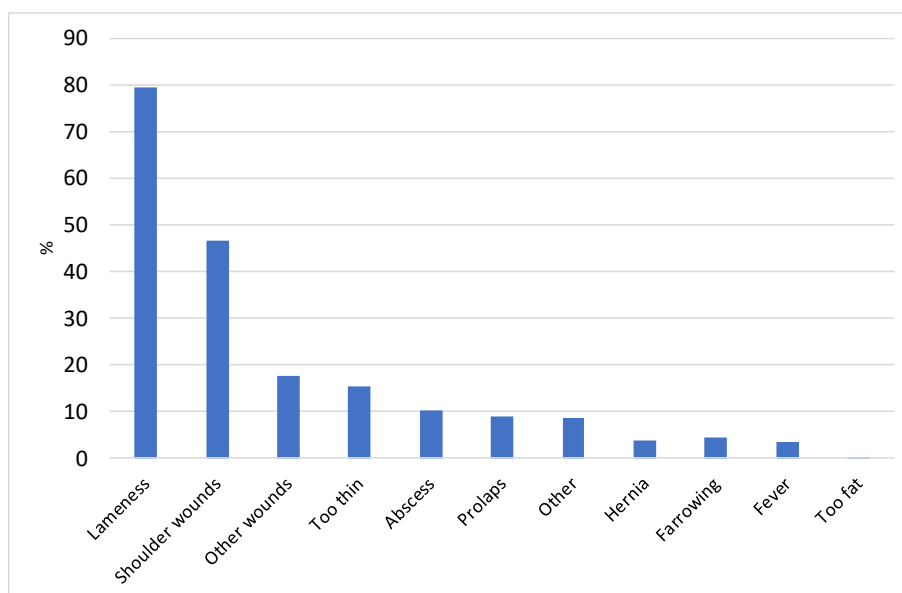


Figure 3. The main reasons for being in doubt about whether a sow is fit for transport or not (% of farmers).

¹ Yversvamp

Lameness was the most widespread reason for being in doubt about whether a sow could be transported to the slaughterhouse or not, as 79% of the farmers were uncertain. Shoulder wounds (47%) and other wounds (18%) were the second and third most frequent reasons, while too thin was chosen by 15%.

Most of those who had answered 'others' claimed that they were never in doubt if a sow was fit for transport or being slaughtered.

If the sows were regarded as unfit for transport, they were either culled at the farm (54% of the farmers), put in a recovery pen (59% of the farmers), the veterinarian was consulted (54% of the farmers), or they simply waited for the next transport to see if the sow recovered (43%). Most farmers chose more than one option, and it therefore seems to be a balance which action they take depending on the actual circumstances.

Frequency of having sows rejected

Only 2% of the farmers had experienced sows being rejected by the driver more than once a year (Table 4). These farmers were equally divided between those who were sending sows for slaughter each week and those who were sending sows for slaughter every second week. Only 3% had had sows rejected at the slaughterhouse several times a year, and only 7% had once a year. This shows that the main part of the sows – that are unfit for transport – are discovered by the driver, and only a minor part is transported to the slaughterhouse.

Table 4. How often did you have a sow rejected (% of all farmers).

	How often did you have a sow rejected?	
	By the driver	By the slaughterhouse
Several times per year	2%	3%
Max. once per year	21%	7%
Less often than once per year	24%	22%
Never	53%	68%

By the driver

A larger proportion of the farmers, who had never had a sow rejected, is sending sows for slaughter less than every second week than farmers who had had a sow rejected maximum once per year (Table 5). This could be because the farmers, who answer never, in total are sending less sows for slaughter.

Table 5. How often have you had a sow regarded as not suitable for transport by the driver related to how often you are sending sows for slaughter? (percentage of respondents in each category of having a sow rejected by the driver).

How often did the driver turn a sow away?	How often do you send sows for slaughter?		
	Once a week or more	Once every second week	Less than every second week
Never	28	38	34
Max. once per year	37	47	16

At the slaughterhouse Three percent of the farmers have had sows rejected at arrival at the slaughterhouse (Table 4). Of these, most sends sows every week (7 out of 11), while the rest send sows every second week (3 out of 11) or less often (1 out of 11).

The rest of the farmers had never had a sow rejected at the slaughterhouse (71%), while 29% had experienced it a maximum of once per year (Table 6). The farmers that send sows for slaughter less than every second week had fewer sows rejected at the slaughterhouse, but as with the drivers, this might be because of the fewer sows they are sending.

Table 6. How often have you had a sow rejected by the veterinary at the slaughterhouse related to how often you send sows for slaughter? (percentage of respondents in each category of having a sow rejected by the driver)

How often did the veterinary turn a sow away?	How often do you send sows for slaughter?		
	Once a week or more	Once every second week	Less than every second week
Never	30	40	30
Max. once per year	35	50	15

Reasons for having a sow rejected The most frequent reason for a driver to reject a sow is lameness, as this has been the case for 81% of the farmers. Shoulder wounds were the second most frequent reason followed by other wounds (Table 7). Only 5% experienced a sow being rejected by the driver because it was too thin/skinny. In contrast, too thin/skinny was the explanation the slaughterhouse gave to 29% of the farmers for rejecting their sows. Still, lameness was the most frequent reason for rejecting a sow, both at the slaughterhouse and at transport.

Table 7. Reasons for turning away a sow by the driver or at the slaughterhouse. The numbers are given as a percentage of farmers who have had a sow rejected (n=169 by the driver, n=114 at the slaughterhouse)

	Rejected by the driver	Rejected at the slaughterhouse
Lameness	81	38
Shoulder wounds	17	14
Other wounds	11	4
Hernia	2	1
Abscess	0	0
Too fat	1	1
Too thin	5	29
Fever	0	7
Prolapse	2	4
Farrowing	1	0

First of all, these data indicate that the farmers in general are very skilled in assessing the suitability of the sows for slaughter as so few had sows rejected more than a maximum of once per year and more than half of the farmers had never experienced it. Lameness is the main reason for rejecting a sow by the driver, and this could reflect that it is difficult to assess or that it occurs in the pick-up facilities.

Furthermore, the drivers are skilled in assessing the sows, as relatively few are rejected at the slaughterhouse. However, it is surprising, that one of the main reasons for turning a sow away at the slaughterhouse is that the sow is too thin while this is seldom a reason for turning a sow away by the driver.

Pick-up facilities

The most frequently used pick-up facility is a vehicle, which is used by 77% of the farmers. A room designed for pick-up is used by 16% while 5% do not use pick-up facilities or use a loading platform. A few farmers use an outdoor pen or several different facilities depending on whether they are first on the route or not. A single farmer answered that he drove the sows himself.

Time before pick-up

In the questionnaire, the farmers could answer for how long the sows in general were in the pick-up facilities (if they used special facilities) in several time slots, but only very few had them waiting for more than one hour, so the different choices of more than one hour was merged (Figure 4). If the pick-up facility was a vehicle, the waiting time was defined from when it arrived at the pick-up place.



Figure 4. Waiting time in pick-up facilities for the sows (number of farmers).

Only sows from 319 farmers had a waiting time before loading, and 33% of these had a waiting time of less than 10 min. A waiting time between 10 and 30 min was answered by 45% of the farmers while 14% had 31-60 min. Only 8% had a waiting time of more than one hour. The time was not directly related to the pick-up facilities (data not shown).

Resources

The resources in the pick-up facility can be seen in Figure 5. In general, the resources offered in the pick-up facilities are not depending on the time, the sows spend in the facility except for water, which is much more common if the sows spend more than one hour in the facility. Surprisingly, bedding was slightly less frequent in this group, but it should also be noted that only 25 farmers are represented here.

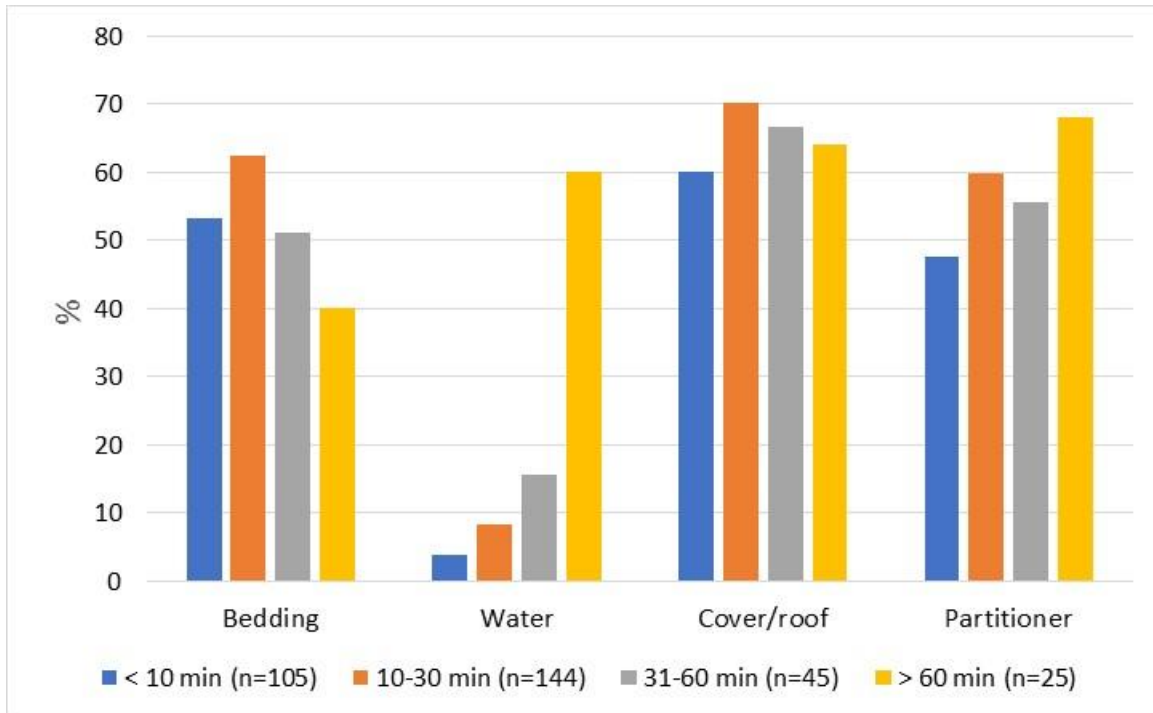


Figure 5. Percent of pick-up facilities having bedding, access to water, cover or roof and partitions depending on the time spent in the facilities. Numbers in brackets state the actual number of farmers in each of the categories.

The farmers were also asked if they had noticed the behaviour of the sows in the pick-up facilities (Figure 6).

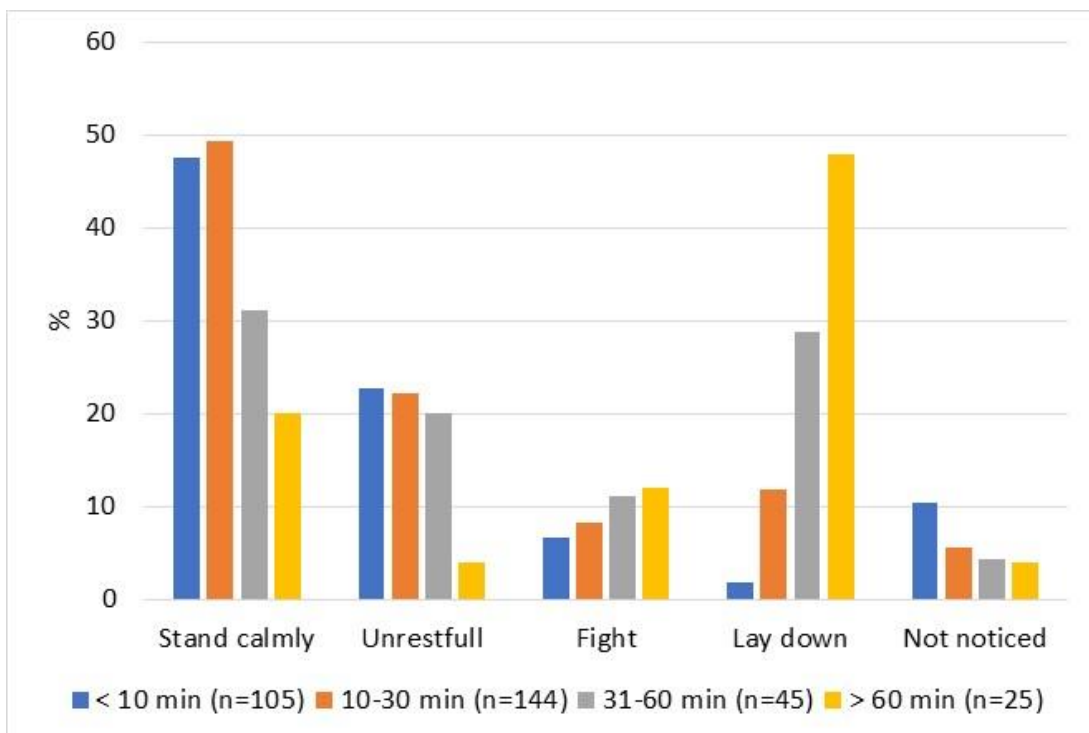


Figure 6. Percentage of sow behaviour noticed in the pick-up facilities depending on the time spend in the facility. Numbers in brackets state the actual number of farmers in each of the categories.

In general, fighting was only noticed rather low-frequently. Most of the farmers noticed that the sows were standing calmly. And the longer the sows were waiting, the more they were laying down. Only around 20% of farmers describe the sows' behaviour as "unrestful", and after one hour's waiting time, this behaviour almost never occurred.

Weather

Most farmers (81%) believe that the weather has no or only a slight influence on the sow behaviour when waiting in a pick-up vehicle or during transport. In contrast, 14% finds that the weather has some influence on the behaviour, while only 5% believes it has a huge effect. The weather effect on behaviour is independent of the time spent in the pick-up facilities. Those who find the weather has some – or a huge effect – point out heat as the main reason. Some also mention storm and snow as having a negative impact on sow behaviour. It should be noticed that the answer was framed as '...influence on behaviour...', but many of those who answered the question might have answered with welfare and not behaviour in mind.

Special transport

In special cases, sows can be transported individually in the truck. This occurs quite seldom, as seen in Figure 7.

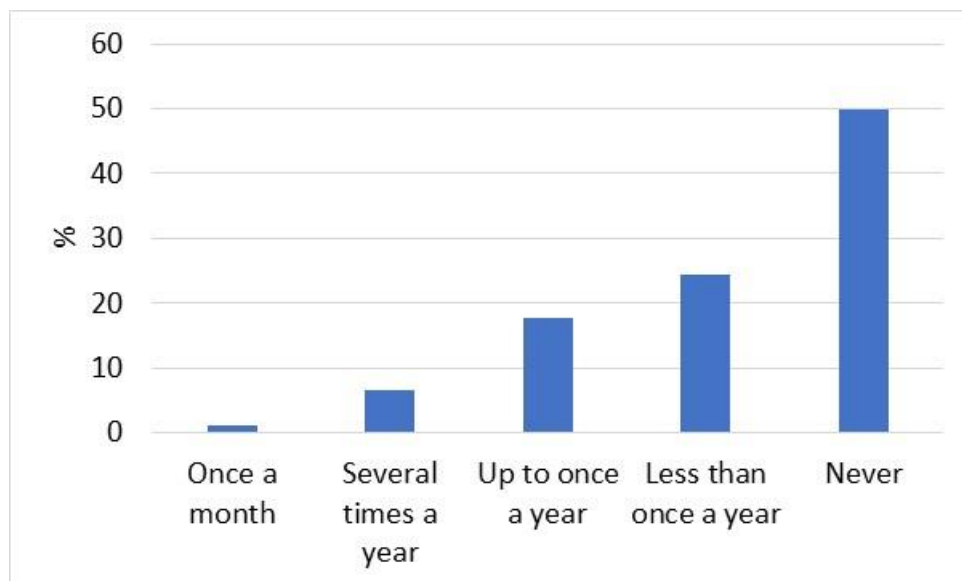


Figure 7. Percentage of farmers having a sow transported individually in the truck.

Approx. 75% have never or less than once a year had a sow, which was transported individually to the slaughterhouse, and only 1% had it at least once a month. These farmers do not have particularly large herds as they were sending 4, 5, 8 and 25 sows for slaughter last time.

When asked when they find it is appropriate for a sow to be individually at the truck, 55% answer that it is never necessary. Interestingly, 41% of the farmers who finds that it might be necessary, are actually sending the sows for individual transport at least once a year while this was only the case for 13% of the farmers who did not find it necessary. Most of the reasons for sending the sows on transport individually are lameness, wounds or other health related issues while also small or weak sows are frequently mentioned. Only two farmers mention aggression or high-ranking sows so the reasons for transporting them individually are more related to the sow itself than to what the sow can do to other sows.

Others

Most of the farmers – 90% – answer that they in general get the information they want about the transport of their sows. Only 20 farmers asked for specific information. These inputs could be divided into topics related to the transport directly (8), to the feedback from the slaughterhouse (4), about sow health and welfare (7) and one simply – can I do anything different. The comments can be seen in Table 8.

Table 8. Information regarding transport asked for by farmers.

Group	Comments
Transport	Same day and time every week (x2) Time for pick-up What if the days are not kept as agreed on? Phone call from the driver in advance – dialog is needed. If the car is full, or I can send two additional sows If the sows are transported to hotel stables.
Feed-back from the slaughterhouse	All comments from the veterinarians at the slaughterhouse, so we do not just shoot a sow which perhaps could have been slaughtered Information if a sow was pregnant Sows in the 'grey zone' for fitness so we can learn what is fit and what is not fit for transport.
Sow health and welfare	If something is not ok A character for each sow Clear rules about when a sow is fit for transport Hoof abscess – what is acceptable for transport How the welfare during transport is secured. If the sows are stressed or have injuries at arrival, transport time and if they are transported on the upper deck.
Other	Can I do anything different?

The farmers were also asked how it could be possible to improve the transport of the sows. Several answered that they did not have any suggestions or that they were satisfied, but 96 wrote a suggestion or a comment.

Some main suggestions were:

- Arrive at time or call if you are late. The driver should be the same every time and behave calmly when handling the sows.
- Pick-up during the day – not before 7 a.m. (unless it is warm as early pick-up is preferable here).
- Same weekday for pick up every time
- As short a transport as possible
- Arrive at the day planned
- Smaller compartments at the truck
- Cheaper so we can send sows for slaughter every week instead of every second week

Discussion

The questionnaire showed that the group of farmers was very homogenous. The median farmer, sending sows for slaughter, was a man, around 50 years old with a long experience. He sends sows for slaughter every week, or every second week and on average he sends 20 or less sows for slaughter at a time. Most farmers use a vehicle as pick-up facility.

The farmers were in general skilled in assessing the suitability of the sows for transport as only 2% versus 3% had a sow rejected by the driver or by the slaughterhouse several times per year.

Fifty percent of the farmers had never had a sow transported individually for slaughter. This could be because they chose to slaughter them before they get weak enough to need separate transport or because they do not acknowledge the need. For those who chose individual transport of the sows, the reasons were very different – from lameness to 'weak sow'. This indicates that today it is not necessarily a homogenous group of sows which is transported separately from the rest of the sows.

Conclusion

This questionnaire should be used as a basis for planning the main experiments in SOTRANS. Some main perspectives could be extracted from the results:

- As the sow-farmers are homogenous, we do not need to think this aspect into the selection of farms for the main experiment.
- As most have a vehicle as pick-up facility, it would be advantageous to have this in at least four out of the six selected farms.
- Transporting sows individually are happening even though it is not that often. Several reasons are mentioned. In the main experiment, we must therefore be conscious about for which sows we want to investigate the effect of individual transport, as the kind of weakness of the sow chosen for individual transport can be very different between different farmers.

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Alder

Køn

- (2) Mand
(3) Kvinde

Stilling

- (1) Ejer
(2) Fodermester
(3) Medhjælper
(4) Andet - skriv hvad _____

I hvor lang tid har du arbejdet med sohold?

- (1) Under 1 år
(2) 1-5 år
(3) 6-10 år
(4) Over 10 år

Hvor ofte sender du søer til slagtning?

- (1) Flere gange om ugen
(2) Én gang om ugen
(3) Hver anden uge
(4) Sjældnere

Hvor mange søer sendte du afsted, sidste gang du fik hentet søer?

Nævn de tre hyppigste udsætterårsager

Hvilke faktorer spiller ind, når du skal beslutte om en udsætterso skal sendes til slagting eller aflives i besætningen?

Hvis du er i tvivl om hvorvidt en so er transportegnet, skyldes det ofte?

- (1) Halthed
- (2) Skulderrår
- (3) Andre sår end skulderrår
- (4) Brok
- (5) Feber
- (6) Prolaps
- (7) Soen er fed
- (8) Soen er tynd
- (9) Soen er tæt på faring eller har lige faret
- (10) Bylder
- (11) Andet - uddyb/ikke relevant _____

Hvad vælger du som regel at gøre med de udsættersøer, som du er i tvivl om, er transportegnede?

- (1) Afliver dem hjemme i besætningen
- (2) Sender dem afsted alligevel
- (3) Sætter dem i sygesti
- (4) Spørger dyrlægen til råds
- (5) Venter og ser til næste gang, du skal have hentet søer

Hvor tit oplever du at få en so afvist af chaufføren?

- (1) Flere gange om året
- (2) Højest en gang om året
- (3) Sjældnere
- (4) Aldrig

Hvis du har fået afvist søer af chaufføren, hvad er så typisk årsagen?

- (1) Halthed
- (2) Skulderrør
- (3) Andre rør end skulderrør
- (4) Brok
- (5) Feber
- (6) Prolaps
- (7) Soen er fed
- (8) Soen er tynd
- (9) Soen er tæt på faring eller har lige fare
- (10) Andet - uddyb/ikke relevant _____

Hvor tit oplever du at få søer afvist af dyrlægerne på slagteriet?

- (1) Flere gange om året
- (2) Højest en gang om året
- (3) Sjældnere
- (4) Aldrig

Hvis du har fået afvist søer på slagteriet, hvad er så typisk årsagen?

- (1) Halthed
- (2) Skulderrør
- (3) Andre rør end skulderrør
- (4) Brok
- (5) Feber
- (6) Prolaps
- (7) Soen er fed
- (8) Soen er tynd
- (9) Soen er tæt på faring eller har lige fare
- (10) Andet - uddyb/ikke relevant _____

Hvilken udleveringsfacilitet bruger du?

- (1) Udleveringsrum
- (2) Udleveringsvogn
- (3) Andet - uddyb _____
- (4) Jeg bruger ingen udleveringsfaciliteter

Hvor lang tid venter søerne typisk i udleveringsfaciliteten? (hvis vogn: efter ankomst til afhentningsstedet)

- (0) Ingen ventetid
- (1) Under 10 minutter
- (2) 10-30 minutter
- (3) 31-60 minutter
- (4) 1-2 timer
- (5) Over 2 timer
- (6) Ikke relevant

Hvilke ressourcer findes i udleveringsfaciliteten?

- (1) Strøelse
- (2) Vand
- (3) Overdækning/tag
- (4) Skillevæg
- (5) Ikke relevant

Har du bemærket, hvilken adfærd søerne har i udleveringsfaciliteten?

- (1) De slås
- (2) De er urolige
- (3) De står roligt
- (4) De ligger
- (5) Har ikke bemærket søernes adfærd
- (6) Ikke relevant

I hvor høj grad tror du, vejret har betydning for søernes adfærd under opholdet i udleveringsvogn og/eller under transporten til slagteriet?

- (1) Stor betydning - uddyb gerne _____
- (2) Nogen betydning - uddyb gerne _____
- (3) Lille betydning
- (4) Ingen betydning

Hvor tit har du søer, der transporteres enkeltvis/adskilt fra andre søer?

- (1) Mindst én gang om måneden
- (2) Flere gange om året
- (3) Højst en gang om året
- (4) Sjældnere end én gang om året
- (5) Aldrig

Hvilke udsættersøer, mener du, ville have gavn af at blive transporteret enkeltvis/adskilt fra de andre søer?

- (1) Ingen
- (2) Uddyb hvilke _____

Får du de oplysninger, som du har brug for i forhold til den enkelte transport?

- (1) Ja
- (2) Nej

Hvilke oplysninger kunne du også tænke dig at få?

Er der noget, du ønsker mere viden om, i forhold til hvordan transporten påvirker søerne?

Har du forslag til, hvordan man kan optimere sotransporter?

Mange tak for hjælpen

Med venlig hilsen

Karen Thodberg, Aarhus Universitet, Margit Dall Aaslyng, Teknologisk Institut og Hans Jørgen Tellerup, Danish Crown