

## **Does the Swedish animal welfare legalisation influence the working-hours spent in pig production?**

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### **Introduction**

On a free market the competitive strength of Swedish pig production is of great importance. However, several recent studies indicate that the competitive situation is otherwise. Costs for buildings and labour are higher in Sweden, compared with most other European countries (1). The aim of this study was to find out how much labour Swedish pig producers spend per pig produced and on which tasks this time is spent. Finally, we would like to disentangle if costs for labour are caused by the Swedish animal welfare legislation and its influence on stable design and management routines.

Space requirements are one demand among the animal welfare legislation that would influence on needs of labour. Farrowing pens have an area of at least 6 m<sup>2</sup> with at least 4 m<sup>2</sup> solid concrete floor and finishers at 100 kg live weight require totally 0,94 m<sup>2</sup> with 0,7 m<sup>2</sup> solid concrete floor. Straw (routing material) must be used for all pigs. Slatted floor in a farrowing pen may not have more than 35 % open area and not more than 11 mm wide openings. Sows kept in stalls are not allowed in Sweden, except some sow temporarily (1 week during farrowing and mating and only if needed).

### **Material and methods**

This study is based on information from 39 Swedish herds, 25 farrow to finish herds, 4 specialised fattening herds and 10 specialised piglet producing herds. Average herd size was 210 (range 96 to 400) sows and 4400 (range 1200 to 22700) fatteners produced per year. The herdsmen filled in a questionnaire in which they reported time spent on; a) daily routines such as pen cleaning, providing straw, feeding and health control and b) periodical routines such as mating, farrowing, delivering pigs from the stables, sorting pigs, repairing, washing stable units between batches and "miscellaneous". Each person working in the stables filled in one questionnaire per day so that at least one pig production cycle was covered. The information from the questionnaires was analyzed, and the results were expressed as time per sow and year, or per produced pig.

### **Results and discussion**

#### *Piglet production*

Average labour requirement in piglet production was 15 h/sow and year (range 8 to 28) or 41 minutes/produced 12 weeks of age piglet. No correlation was found between time spent and herd size. Also, no association was found between total labour used per sow and year and number of pigs produced per sow and year. However, among the herds producing more than 23.5 piglets per sow and year none used less than 15 h/sow and year. On the other hand, there was a significant positive correlation between time spent during farrowing and number of piglets produced per sow and year ( $p < 0.05$ ) and there was a tendency to positive correlation between time spent at mating and number of pig produced per sow and year ( $p < 0.07$ ).

Table 1. Total labour spent in Swedish piglet production, by task

Time spent with	% of total (15 h/sow and year)
Feeding	13
Daily pen cleaning	24
Providing straw	10
Farrowing	10
Mating	7
Health control, vaccinations and medical treatments	8
Sorting, moving and delivery	4
Washing stable units	8
Repairing	3
“Miscellaneous”	13

Of the total time spent, daily pen cleaning and providing straw to the pigs, accounted in total for as much as 1/3 of the labour used (Table 1). There are reasons to believe that, compared to pig production in other countries, these figures are quite high, but not surprisingly high. Pens with solid floor in combination with a limited area of slatted floor and slats with small openings together with the use of much straw, obviously demands much time to keep clean. “Miscellaneous” includes keeping records, assisting veterinarians, meeting with salesmen, meetings with staff and “trying to find tools and equipment needed”. By establishing and following routines one can substantially lower costs of labour.

The total labour in piglet production can be split into different intervals; farrowing to weaning, from weaning to delivery to fattening units (usually when piglets are about 12 weeks of age), time spent during mating and tending of dry sows, time spent on replacement gilts and shared time (Table 2). Of a total labour of 15 h/sow and year most labour, 41%, was spent in farrowing units not only by taking care of newly born piglets and their mothers, but with a quite heavy job to keep pens clean. In farrowing pens constructed so that sows have possibility to keep good hygiene by them selves, costs for labour will decrease and it will for sure spare humane capital.

Table 2. Total labour in piglet production split by different stages of the production cycle

Labour split in different intervals	% of total (15 h/sow and year)
Farrowing	41
Mating and dry sows	20
Weaning to 12 weeks of age	19
Replacement gilts	5
Shared time	15

### *Fattening pig production*

Average labour requirement in fattening pig production was 10 minutes/pig (range 9.0 to 12.5) in herds with specialised slaughter pig production and 14 minutes/pig (range 6.5 to 34.5) in farrow to finish herds. Contrary to piglet production, bigger fattening herds spent less time per pig produced. Among these herds, the range was even lower and the average was around 10 minutes/pig. According to Table 3, daily pen cleaning and providing straw, even in fattening production accounted for more than 1/3 of total labour. Feeding the fattening pigs

did not require much labour time since all participating herds, except one used liquid feeding systems.

Table 3. Total labour spent in Swedish fattening pig production, by task

Time spent with	% of total (14 or 10 minutes/pig)
Feeding	4
Daily pen cleaning	21
Providing straw	16
Health control and medical treatments	7
Sorting, moving and delivery	24
Washing stable units	20
Repairing	5
“Miscellaneous”	3

### Conclusions

This study shows that the Swedish animal welfare legislation increase labour input in the production as well as, with no doubt, pig comfort. Working hours in piglet production is about 4-5 hours higher compared with other countries (1) much due to time spent with pen cleaning and providing straw. On the other hand, pig mortality is low in Sweden. Sow mortality is on average 1.8 % (2) and in fattening pig production 1.4 % (national database PigWin). In this study health control, vaccinations and medical treatments only accounted for 7-8 % of all labour input (corresponding to nearly 1 minute/fattening pig produced and 72 minutes/sow and year including litters).

The Swedish animal welfare legislation decreases the competitive strength for Swedish pig producers towards increasing import of pork. In spite of all efforts to full fill consumers demands through the Swedish animal welfare legislation; Swedish farmers still don't get paid for their work.

### Reference

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