Combined pasture and housing systems in Sweden: multi-suckling pens with access to pasture in the summer

Description

On this farm, pigs are housed indoors with access to a concrete outdoor run. During summer, pigs also have access to the pasture, except sows in service and during the first days after farrowing. Before farrowing, sows are kept on straw bedding, where they also farrow. Immediately after farrowing the sow and her piglets are moved to an individual indoor pen for 10 days. Thereafter, they are transferred to a group-suckling pen with outdoor access, where 7 sows with piglets are kept together. Piglets are weaned when they are 7 weeks old. After weaning, the sows are moved to the service area and the weaners stay in the group-suckling pen, with feed troughs for the weaners. Both pens for sows and weaners have mainly straw bedding and a concrete outdoor run. The weaners also have a partly slatted floor, both indoors and outdoors. All pigs are fed indoors 2–3 times per day and have ad libitum access to roughage on the outdoor run when they do not have access to pasture. The weaners are sold to another farmer when they are 12 weeks old.

Pasture management

The grazing season in southern Sweden lasts from May to September. The farm has a two-year rotational pasture management, one year with grass pasture and one with barley. There are two fields outside the barn, and the pastures are altered annualy to go either to the left or right. All pastures are connected to the stable so the pigs can move freely between barn and pasture. The paddocks are approximately 1,500 m^2. They are long and narrow and widen further away from the stable. During the first part of the grazing season, the paddocks are limited to 50 % of their size. There are two harvests of grass in the unused area before the paddock is extended. When the groups are moved, new groups

Farm portrait

Location
Southern Sweden
Topography
Flat
Farmland
216 ha: 200 ha pasture and arable land
Size of pig herd
168 sows and 3,600 weaners
Farming system

- Pregnant sows, lactating sows, their offspring and weaners are housed indoors with concrete outdoor run and have access to the pasture in summer.

In the group-suckling pen, red lights are installed in the creep area to attract the piglets.

can take over the pasture from the previous groups. In the middle of June, the grass cover in paddocks was 50-70 % for the group-suckling pens and 70 % for sow pens.

Animal welfare

Overall, this farm has high animal welfare with clean animals and minor injuries (see table 1). Only very occasional aggressive behaviours between the animals and no stereotypic behaviours were observed. In pregnant sows, no major welfare issues were found, and only some skin lesions scratches could be detected throughout all stages of gestation. Soiled pigs occur but vary over time and are not a welfare issue. Occasionally sows show lameness, vulva lesions or deformations. During pasture season sunburn on udders is not common, and only a few sows had sunburns on the ears or body.

Weaners showed mild signs of diarrhoea in half of the assessed pens during the project period. Occasional ear lesions and short tails were observed, but there were no open tail lesions. When runts are observed, they are sorted out to nursery sows before the pigs are moved to the multi-suckling pen. At weaning the pigs are sorted by size again. Eye inflammation, ectoparasites or scratches were detected in weaners. During pasture season sunburn on the ears and body can be found in weaners.

Environmental impact and productivity

Concrete outdoor runs of weaners and pregnant sows are cleaned weekly. Indoor bedding of weaners is removed between batches and one time during their five-week-long stay. For pregnant sows,

Table 1: Welfare Assessment

Age group	Welfare parameter	Assessment during project period
Weaners	Scratches, eye inflammation, ectoparasites	Occasionally
Weaners	Short tails / tail biting	Occasionally, no open tail lesions
Weaners	Diarrhoea	Mild signs in half of the pens
Weaners	Runts	Only in 1 pen
Sows	Skin lesions (scratches)	19 %
Sows	Soiling, in summer	1. Visit: 38 %; 2. + 3. visit: 3-6 %
Sows	Vulva lesions or deformations	Only a few
Sows	Lameness	Only a few
All	Sunburns on ears and body	Only a few
All	Stereotypical behaviour	Not detected

Table 2: Productivity

Productivity	**Sow**
Average no. of Litters / sow / year	2.1
Average no. of piglets born / litter	16.0
Average no. of piglets weaned / litter	11.5
Average no. of litters / sow until culling	4.9
Feed usage / sow / year [kg]	1,367[1]
Productivity	**Weaners**
Average daily weight gain [g / day]	570
Feed conversion rate [kg / kg gain]	1.9
Environmental impact	**Weaners**
GHGs[2]	6.20
Terrestrial eutrophication [molc N][3]	0.26
Marine eutrophication [kg N][3]	0.107
Water footprint [m_3][3]	0.044

[1]concentrate + pasture
[2]Green house gases [CO_2-Equivalent] per [kg] weaned piglet
[3]per [kg live weight] weaned piglet

the indoor bedding area is replaced every second week. Indoor soiled areas and slatted floors are generally clean and dry, with soiled parts on 10-50 % of the total area. During the project period, 50 % or more of the outdoor run was soiled. This indicates that the pigs prefer to use the outdoor run as an elimination area. In the weaning pens, manure often builds up in corners and edges of the slatted floor where there is less movement of the pigs.

The farm has a high level of carbon footprint (greenhouse gasses = GHGs) on the breeding system of 6.20 kg CO_2 equivalents per kg of weaned piglet. Emissions mainly occur from the manure storage due to an extended housing period in Sweden. The extensive use of home-grown feeds reduces eutrophication impacts and water use for feed production. The farm also has a high level of productivity with 24 piglets per sow per annum and a weaner live weight gain of 0.57 kg per day.

Labour and cost

- The farm has four employees, most of their time is spent within the pig enterprise, either with practical work, planning or accounting.
- They try to do as much work as possible with a compact loader to avoid heavy work.
- Feed management is automatic, except in the first 2 weeks after weaning when weaners are fed manually with special dry feed. However, the farmer and his employees want to find a way to reduce the manual work for feeding the weaners.

Take away lessons

- This farmer is engaged in production and employee management and proactively develops new ways to improve animal welfare and the work environment.
- To lower the incidence of Postpartum Dysgalactia Syndrome (PPDS) sows farrow in deep straw pens. This makes it possible to lower the temperature in single pens and reduces the number of PPDS.
- With good management and enough space it is possible to grant weaners and sows with suckling piglets access to the pasture in summer.

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