

Combined pasture and housing systems in Switzerland: large scale production inclusive of animal welfare

Description

In Switzerland, conventional and organic breeding sows are generally kept in indoor systems with concrete outdoor runs. However, one of the largest producers of organic fattening pigs demonstrates standard pig housing systems and pasture access is possible, even at large production scales.

At this farm pregnant sows have year-round access to pasture and wallows whenever the soil is dry enough to prevent soil damage. In the future, the farm plans to add trees to the end of the pasture to offer additional shade during the summer. Lactating sows and weaners do not have access to pasture. The farm prefers to keep sows and piglets inside during the lactation period to avoid exposure to low temperatures or bad weather conditions. Installing a pasture for the weaners would require more fencing as the animals are much smaller than sows, which would complicate the management of the new grouping.

Pasture management

The total pasture area dedicated to pregnant sows is 1 ha. This area is divided into several long strips, such that the pasture in use can be rotated.

During the day, two out of the four groups of pregnant sows are allowed on the pasture, without mixing the groups. The next day the other two groups get access to the pasture. When the ground is sufficiently dry and hard to withstand the sows' treading, pasture access is granted from 7 am to 6 pm year-round.

Furthermore, the farmer sows a special mix of grasses meant for horse racecourses, which presents a high resistance to treading, maintaining a high level of grass cover on the pasture. Areas where the sward is breaking and sows are starting to root



Farm portrait

Location

Canton Thurgau, Switzerland

Topography

Flat

Farmland

55 ha

Size of pig herd

200-220 sows, 600 weaners

Farming system

- Pregnant sows are housed indoors and have controlled access to pasture and wallow.
- Lactating sows, suckling piglets and weaners are housed indoors with concrete outdoor run.



are quickly fenced off and newly sown, except for the transition areas from stable to pasture, which is more heavily used, and the grass cover is therefore not intact.

To satisfy the sows desire to wallow and prevent digging on the pasture, the farmer installed a designated wallowing area in-between the pasture and the outdoor run. There he added concrete slats at a depth of 70 cm, to prevent the holes from deepening and fortified the entrance to the pasture with concrete.

The pasture area is double-fenced to prevent contact with wild boars.

Animal welfare

Pasture access and the possibility to wallow significantly contributes to high welfare of the pregnant sows. Sows can exercise and forage, enriching the sows' diet.

The farmer pointed out that the wallow is especially beneficial to sows freshly separated from their piglets. It allows them to cool and soothe their udders and better cope with being separated from their piglets, mixed with other sows. This enables the sows to return more quickly to oestrus.

Health checks of the sows show that skin lesions are common in this system, which is likely due to the relatively large size of sow groups (30-36 animals) and the frequent mixing of sows from different groups. Other kinds of injuries like bro-



Combined systems grant access to pasture in addition to the concrete outdoor run.

ken legs, oedema or vulva lesions are only present on very few occasions or not at all. To prevent the transmission of parasites through the pasture, the farmer deworms his sows regularly after pathogen detection. In addition, he vaccinates against piglet diarrhoea with vaccines produced from specific pathogen variants found on-farm.

Table 1: Animal welfare assessment

Age group	Welfare parameter	Assessment during project period
Sows	Soiling	24 % of sows soiled with mud
Sows	Thin sows	3 out of 215 sows
Sows	Skin lesions (scratches)	43 % of sows
Sows	Shoulder lesions; vulva lesions, deformation, swelling	1 – 3 % of sows
Sows	Lameness	5 % of sows
Weaners	Soiling	In 2 out of 25 pens <33 % of all the animals
Weaners	Diarrhoea	In 5 out of 25 pens mild signs
Weaners	Runts	In 14 out of 25 pens detected
Weaners	Skin lesions (scratches)	In 6 out of 25 pens <33 % of all the animals
Weaners	Ocular discharge	Not detected
Weaners	Eye inflammation	In 5 out of 25 pens detected
Weaners	Ear lesions	In 3 out of 25 pens <3 % of all the animals
Weaners	Short tails	In 7 out of 25 pens <33 % of all the animals
All animals	Ectoparasites	Not detected
All animals	Sunburns	Detected on one sow only



Sows use the wallowing area in between pasture and outdoor run to thermoregulate and express explorative behaviour.

Table 2: Environmental impact and productivity

Productivity	Sow
Average no. of litters / sow / year	2.1
Average no. of piglets weaned/ litter	11.1
Average no. of litters / sow until culling	5.2
Environmental Impact	Sow
GHGs ¹ / kg piglet weaned	6.24
Terrestrial eutrophication [molc N] ²	0.55
Marine eutrophication [kg N] ²	0.101
Water footprint [m ₃] ²	0.098
Environmental Impact	Finishers
GHGs ¹ / kg finished pig	3.29
Terrestrial eutrophication [molc N] ³	0.266
Marine eutrophication [kg N] ³	0.051
Water footprint [m ₃] ³	0.055

¹Green house gases [CO₂ equivalent] per [kg] piglet weaned

²per [kg live weight] piglet weaned

³per [kg live weight] finished pig (full life cycle)

Environmental impact and productivity

The farm has a medium to high level of carbon footprint (greenhouse gasses = GHGs) in the breeding system of 6.24 kg CO₂ equivalents per kg of weaned piglet, but the footprint per kg of finished pig is low to average at 3.29 kg CO₂ equivalents.

Emissions from manure handling and storage are a significant source, with the remainder largely from embedded emissions within the purchased feeds. However, the farm is productive with 23 weaned piglets per sow per annum, and a finisher live weight gain of 1.08 kg per day.

Labour and cost

- The farmer spends on average 5 to 10 minutes daily with pasture management, including opening and closing pasture gates.
- All the sows at the farm are inseminated or brought into the farrowing pens on the same day of the week. This simplifies the management of several groups of sows and reduces planning difficulties.



Take away lessons

- Providing pasture access in large scale pig breeding farms, with indoor housing and an outdoor run, can improve animal welfare.
- A high percentage of grass cover can be maintained by sowing grass mixtures resistant to treading, quickly fencing off digging holes and providing separate wallows.
- Wallowing helps sows cope with the stress and physical unease from piglet separation and allows them to return to oestrus more quickly.

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