

POWER final project summary



Project purpose

Despite a huge diversity in system design and practice between and within countries, European organic pig producers face common challenges related to animal welfare, nutrient losses and system resilience. Shared animal welfare issues are piglet mortality, health problems around weaning and housing systems for growing-finishing pigs poor in environmental stimuli. Environmental challenges include risk of ammonia emissions from outdoor runs and nutrient leaching from pasture contributing to GHG emissions. In the POWER project, we addressed these challenges in close cooperation with producers throughout Europe

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Actions to promote piglet health and welfare Several types of actions were evaluated to promote maternal behaviour, reduce piglet mortality and improve piglet growth and health. Enlarged farrowing pens improved maternal nest building behaviour, and confinement of piglets in the nest during sow feeding was the best way to increase piglet nest use in early lactation. Regarding the prevention of health problems before and after weaning, iron supplementation to prevent anemia was only required for indoor piglets, and daily oral supply of small amounts of iron rich substrates might be even more efficient than iron injection. Supplying sows and piglets with microorganisms from the natural environment through fermented products was a promising option to modulate piglet gut microbiota. Later weaning is another way to improve health after weaning, and extending lactations to ten weeks caused good piglet health and very high growth rates. Separation of sows and litter overnight allowed a lactational oestrus, a strategy that could be useful in farms opting for extended lactation. Solutions applied to decrease multifactorial challenges like piglet mortality and weaning diarrhea, should simultaneous target the mother, the young and their housing environment.

How to design and manage concrete outdoor runs for growing-finishing pigs?

Pigs following their natural behaviour choose “functional areas” for resting, activity and elimination, thereby minimising the surface soiled with excreta. This is not only advantageous with regard to hygiene and animal welfare but also necessary to reduce ammonia emissions which increase, when faeces and urine mix and cover large areas of the outdoor run. Based on scientific research and practitioners’ experiences three innovations (rooting areas, roughage in racks, showers), to stimulate the use of functional areas were identified. Across all experiments,

the introduced resources affected pigs' use of the outdoor area, which has the potential to reduce the area used for elimination. However, the variation between groups and farms was considerable. Moreover, removal of excrements in the outdoor area remains essential to reduce emissions especially in summer. The optimal outdoor run design should take various (geographical) location- and farm specific factors into account. Furthermore, management of resources is essential, therefore, practicability needs to be ensured.

Combined housing and pasture systems

Combining indoor- and pasture access in various combinations allows the organic pig producer to tailor their system to local climatic conditions, farm and soil structure while allowing the animals to perform a wide range of species-specific behaviour in compliance with the organic principles. To promote further development of combined systems, "farmer-to-farmer inspiration" was encouraged through involvement of 18 diverse systems across Europe representing best practice examples or innovative concepts. Based on comprehensive farm and animal data collected, each farm was thoroughly evaluated according to animal welfare, environmental performance, labour and costs, and take away lessons were put forward in 18 fact sheets. Huge variation in productivity and feed efficiency caused huge variation in GHG emissions between farms, and although some of this variation indisputable relates to the diversity in system concepts, it indicates a major improvement potential.

What makes a system resilient?

Based on interviews of organic pig producers, the resilience capacity and attributes were analysed for e.g. price shocks, disease outbreaks, climate change, legislation change and labour fluctuations. The perceived risk of being non-resilient were associated with a low feed self-sufficiency among producers with an all-year outdoor production but also among producers that were unable to accumulate sufficient reserves on farm to cope with shocks. Farms with direct marketing and a large diversification were labour intensive and required the ability to pay decent wages to avoid perceived risk of being non-resilient. For all used strategies the producers' attitude, meaning making and social capital played an important role to cope and adapt to shocks. Different resilient strategies call for different policies for different types of producers.

Diversity is key

Diversity in organic pig system design and practice calls for diversity in research questions and methodology, marketing strategies and policies to further support a variety of sustainable and resilient organic pig systems across Europe with high level of animal welfare.



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