



ERA-NET
SUSAN
EUROPEAN RESEARCH AREA ON
SUSTAINABLE ANIMAL PRODUCTION

SusPig

Evaluate if improved feed efficiency can be sustained with climate change and with reliance on local feed resources

Evaluate the environmental, economic and social impacts of robustness, and to model new sustainable pig production systems based on this strategy

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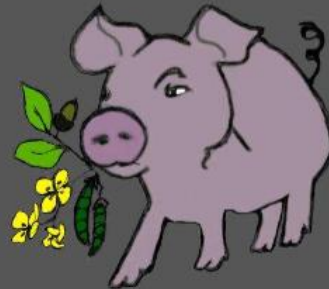
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The fastest growing pigs may not best adapt to climate change
☞ selection can focus on animals that sustain growth when feed intakes drop in response to heat stress

Local but often *suboptimal* feed ingredients (rapeseed, faba beans, Narbon vetch, acorns) did in some cases but not always have adverse effects on production performance, and did not negatively affect and in some cases positively affected meat quality

Blood biomarkers to feed efficiency indicative of health and fitness still being analyzed in a very large number of pigs from several breeds

Cooperations have also resulted in several theoretical studies in genetics.



SusPig PhD students working on Life Cycle Analyses:

Mathias Ottosen (UK and US): LCA methods + feed formulation + animal breeding techniques implementing the effect of breeding pigs for improved performance resulting from genetic change through selection

Tara Soleimani (Fr and AU): a novel model to account for individual animal performance to quantify the responses to selection for residual feed intake and how the selection index can be restructured from an environmental point of view

Stanley Zira (SE): completely novel first social Life Cycle Analysis model for pork consumption and the risk of negative social impacts, including workers, farmers, consumers, local community, society, and pigs as stakeholders

Future pig production systems



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Future research:

Implementing selection opportunities for robustness (+ LCAs)

Marketability options of pork fed local feed ingredients and possibilities to open novel niche markets

Further development of novel pig systems (+ LCAs)

Perspective



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Prospects for sustainability of pig production in relation to climate change and novel feed resources

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1. A hypothesis and review of the relationship between selection for improved production efficiency, coping behavior, and domestication
2. Effects of diet and genetics on growth performance of pigs in response to repeated exposure to heat stress
3. Extent of third-order linkage disequilibrium in a composite line of Iberian pigs
4. Breeding focus 2018 – Reducing Heat Stress
5. A meta-analysis of the effects of dietary canola/double low rapeseed meal on growth performance of weanling and growing-finishing pigs
6. A method to estimate the environmental impacts from genetic change in pig production systems
7. Effect of long-term feeding of rapeseed meal on skeletal muscle transcriptome, production efficiency and meat quality traits in Norwegian Landrace growing-finishing pigs
8. Autozygosity and genetic differentiation of Landrace and Large White pigs as revealed by the genetic analysis of crossbreds
9. Impact of environmental temperature on production traits in pigs
10. Prospects for sustainability of pig production in relation to climate change and novel feed resources
11. Replacing soybean meal with rapeseed meal and faba beans in a grower-finishing pig diet: Effect on growth performance, meat quality and metabolic changes
12. Feed efficiency can be sustained in pigs fed with locally produced narbon vetch (*Vicia narbonensis* L.)
13. Social life cycle assessment of Swedish organic and conventional pork production
14. Evaluating environmental impacts of selection for residual feed intake in pigs

Thanks!

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