

Organic piggery models for Finnish climate

“Organic Piggery in Finnish Climate” has been a development project done by Agrifood Research Finland. The aim of the project was to develop functional piggery lay-outs for organic production especially designed for Finnish climate. This means insulated buildings with heating for the wintertime period. The results consist of both combination and fattening piggeries. The smallest model is for 40 and the largest for 196 sows. The fattening units are mainly for 500 pigs. The building layouts are designed to be flexible. Much attention has been paid to farrowing pens and their animal friendly qualifications.

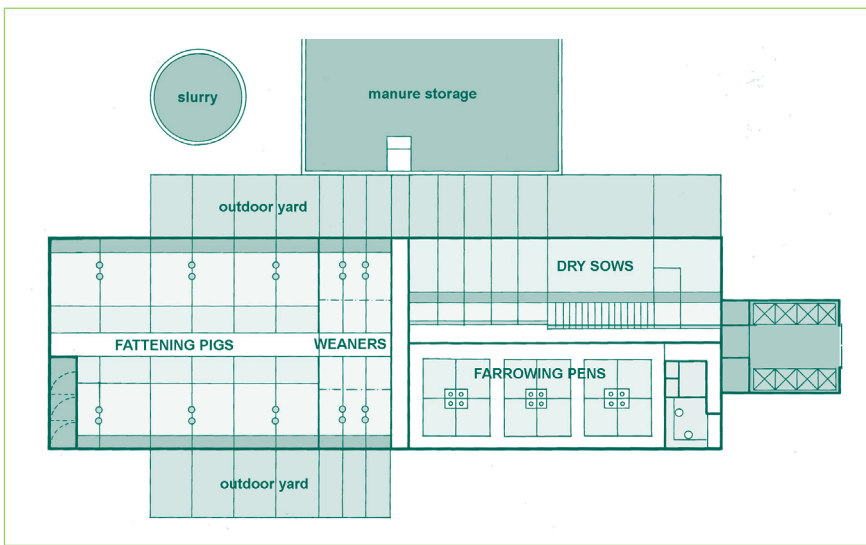


Figure 1. A model for a small combination piggery for 40 sows and 340 fattening pigs. The building is one solid unit and it is expandable in the longitudinal direction.

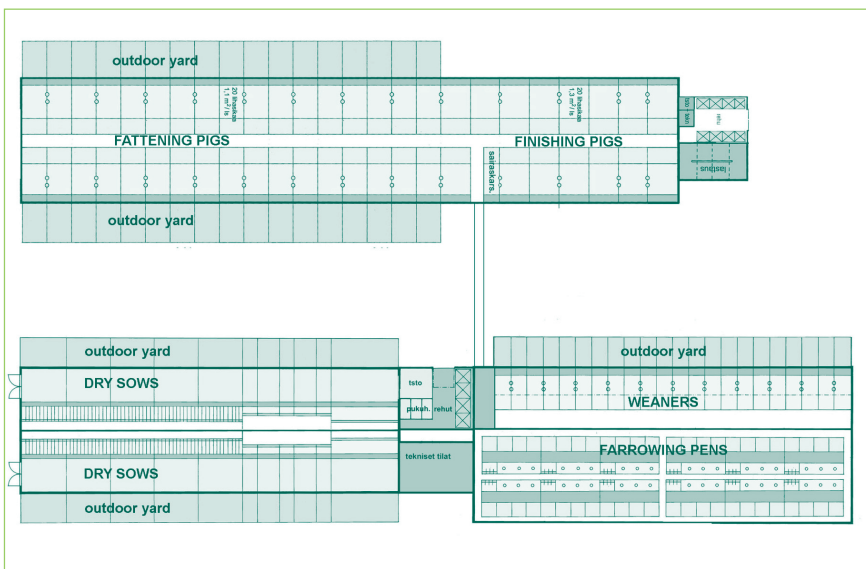


Figure 2. A model for a large combination piggery for 190 sows and 1000 fattening pigs. The unit is a combination of three different phases which have been built as the production has grown bigger. The manure storages are not shown in the figure.

The share of organic pork production is only 0,7 % of all pork production in Finland. The consumers’ demand for organic pork has been slightly higher than production. Still the organic way of production has not increased. This research and development project was addressed to remove obvious obstacles in production. The difficulties accumulate in the whole production chain from farmers to supermarkets. The profitability of organic production is mainly dependent on the higher market price compared to normal pork production. This price difference has been slightly decreasing. The market signal is not strong enough to encourage farmers and they have been passive for new investments. The new models of this research are supposed to promote organic pork production into a new phase. At least they assure a better animal welfare compared to conventional production. Still today there are only 23 farms in organic pork production. Only two new fattening units have been built since 1999 when the new EU and national rules for organic production were introduced.

Finnish climate and management

The Middle-European organic piggery management models were not suited for Finnish climate demands. Buildings were mostly non-insulated and pasturing was usual. Due to harsh winter conditions Finnish piggeries must be insulated and heated, too. Outdoor exercise is compulsory from June until the end of October. Both manure and rain waters must be collected from the exercise yards. This means yards with concrete or asphalt covering with drainage systems.

The need for immediate outdoor access from each pen comprises with a layout

where the building width is relatively small. When the unit size grows bigger the building becomes either longer or there are more individual buildings instead of one large wide span unit. This is welcome in old farmstead environments because small buildings fit better together with the old small scale farm buildings.

Functional layout models

The layout designs promote good functionality with easy routes for animal movements. Pen dimensioning tries to keep social structure solid and thus avoid misbehavior among pigs. The maintenance concepts concentrate mainly on manure handling. Four models are based on straw litter systems and one is purely for slurry system. Straw is promoted because of its beneficial affects on animal behavior and pen activity. The finishing pens are dimensioned for 20 pigs. There is 1 tube feeder for each 10 pigs. This is a proper dimensioning from an animal behaviour's point of view. The pens have a precision dimension so that pigs between 30 and 85 kg have 1,1 m² each and have access to an exercise yard. The fattening pigs between 85 and 110 kg have 1,3 m² each and no access outside because exercise is not compulsory for them during the last 30 days of finishing.

Organic building, too

The buildings are designed to be organic as well. The building materials should be natural, recyclable and can be safely terminated after use. The concrete is recommended for floors and for lower parts of the walls. The rest of the building frame, claddings and insulation can be made of wood. The roof cover can be metal sheet or bitumen felt. The heating system is based on heated water circulation and the energy source is local fire wood. The buildings are principally well insulated and heated during the winter-time. Natural ventilation is recommen-

ded as an energy saving concept for all buildings. Still all models can be equipped with electric fans.

Find more information

The research report can be downloaded at the following website:
<http://www.mtt.fi/met/pdf/met21.pdf> (KIVINEN, T. 2003. Luomusikala Suomen olosuhteissa. Maa- ja elintarviketalous 21: 79 s. Verkkojulkaisu päivitetty 31.3.2003 [Tiivistelmä]

[Abstract]. For further information on research and development of agricultural buildings, please visit the website: <http://www.mtt.fi>. ■

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Reaching across borders

The Nordic School of Agroecology / Ecological Agriculture (AGROASIS) has recently launched an exciting pilot project: A 100% internet-based master level course in agroecology. The course, "The ecology of farming and food systems", aims to give students an introduction to the academic field of agroecology.

The course is based on a case study of an organic farm in Denmark. Using this case, students get the opportunity to explore topics such as the structure and functioning of agroecosystems, multi-functionality of agriculture, ecosystem services and systems thinking.

A total of 10 network members are involved in teaching or facilitating this course: Geir Lieblein, Tor Arvid Breland, Mike Moulton and Wendy Waalen from NLH, Nadarajah Sriskandarajah, John Porter and Vibeke Langer from KVL, Lennart Salomonsson from SLU, Juha Helenius from HU and Charles Francis from the University of Lincoln Nebraska. During the eight week course the teaching responsibilities rotate, making this a truly NOVA/Nordic course, with shared responsibilities between countries and universities.

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This 5 ECTS course aims to engage and entice students to continue in the field of agroecology. We currently have participating students in China, USA, Finland, Australia and Spain. This course gives them the opportunity to step into the world of agroecology without ever leaving home! ■

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