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*Vägen till ökad
uthållighet i
livsmedelskedjan*

*Towards increased
sustainability in the
food supply chain*

*Vejen til en øget
bæredygtighed i
fødevarekeden*

*Veien til økt
bæredyktighet i
matvarekjeden*

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Rooting yards with peat on the outdoor concrete areas in organic slaughter pig production

Effect on pig behaviour and the emission of ammonia

In organic slaughter pig production, large dirty outdoor concrete areas, contribute to nitrogen losses which are calculated to be about 4 times greater than in conventional production. Generally it is positive for animal welfare to have large areas available for movement, but it also results in that pigs spread their manure over a larger total area. Since there is a linear relationship between the area with manure and the ammonia emission, there also is a strong and direct link between dung behaviour of the pigs and ammonia emissions. If organic pig production should be environmentally credible, the pigs in some way must be persuaded to dung on a smaller area.

The purpose of the study was to reduce the NH₃ emission by enriching a section of the outdoor concrete area with rooting material (peat). The hypothesis was that the rooting material would stimulate the activity and the rooting behaviour of the pigs in that section. Since pigs do not want to dung where there is much activity, dunging would be limited to a smaller part of the outdoor area, outside the rooting yard. Peat was chosen as rooting material, since it is appreciated by the pigs and has a high nitrogen binding capacity. Small amounts of urine and dung in the rooting yard could then be bound by the peat.

The study was conducted in the research barn for organic slaughter pigs at LBT / SLU 's experimental farm Odaröslöv. The barn is designed with 8 pens (16 pigs per pen) housing a total of 128 growing/finishing pigs. Two batches were studied in the experiment, which included

behaviour studies, health studies and measurements of NH₃-emission.

The results showed that the rooting yard on the outdoor area did not stimulate the pigs to root more or to be more active compared to pigs without rooting yards. However, pigs in pens with rooting yards tended ($p=0.0097$) to root more outdoors. The hypothesis of a change in the dunging behaviour was confirmed, since the pigs avoided dunging in the rooting yard and mainly limited their dunging to the dung area. Thus, the hygiene on the outdoor area was improved and the registered NH₃-emission from the rooting yards was lower (49.9 mg/m²h), in comparison to the emission from the same areas in the pens without rooting yards (108.6 mg/m²h). However, the NH₃-emission from the dunging area in pens with outdoor rooting yards was noted to be higher (134.8 mg/m²h), than that from pens without such yards (80.1 mg/m²h).

It was concluded that rooting yards on the outdoor area in organic slaughter pig production is positive for the welfare of the animals. They were happily used for both rooting and lying by the pigs. The presence of rooting yards also resulted in better use of all the pen areas. However, the higher NH₃-emissions registered from the dung areas in the pens with rooting yards indicated that something more has to be done. Suggestions to obtain a better hygiene on the dung area include more frequent scraping (which is facilitated by more limited dunging) or using another dunging system.