

Designing a bedded system for fattening pigs: a methodological approach

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In the Netherlands during the second half of the 20th century, the livestock industry intensified and prospered. During the last decades problems concerning animal welfare and environment have caused increasing criticism of this industry by the public. Adding to these concerns, the last few years have been troubled with foot-and-mouth disease for cattle, fowl pest and classical swine fever. This caused so much social pressure that the Dutch Ministry of Agriculture, Nature Management and Fisheries and producers were forced to act and make a transition to a more acceptable system. The government, the agricultural industry, farmers and several NGO's are now trying to develop and implement sustainable animal husbandry. In view of this transition, Wageningen University and Research Centre (Wageningen UR) is investigating alternative housing systems, taking into account animal welfare, animal health, environment, product safety, landscape and nature. Traditionally, livestock facilities are designed from the farmer's point of view, with economical motives and concessions (forced by legislation) to animal welfare and environment. This study designed a housing system for fattening pigs from the animal's point of view, with the animal's biological needs as base. To achieve innovation, transparency and assure completeness we used a methodological approach. This approach resulted in a program of 58 requirements that the housing system should satisfy. The creative part of the design process followed these requirements, so the resulting design fulfilled the biological needs of the fattening pig. Finally, the 58 requirements were weighed against economical and environmental needs to identify the trade-offs and conflicts with animal welfare needs.