

Enforcement of 'open standards' for animal welfare – climate in pig houses*Herman Vermeer and Johan Van Riel**Wageningen Livestock Research, the Netherlands; herman.vermeer@wur.nl*

According to the Dutch Animal Welfare Act the indoor climate in pig houses shouldn't be harmful to the animals. This is a so called 'open standard' which enables pig farmers to reach welfare goals with self-chosen measures. However inspection is difficult because strict limits are not available. The aim of the project was to determine measures to assess climate in pig houses. This creates the possibility to enforce open standards on pig farms. In total 32 farms with finishing pigs and 64 farms with rearing piglets were assessed by the Dutch inspection service. On these farms a set of climate related measures was collected in six pens according to a newly developed protocol. The measures were animal and resource based measures and air quality. A simple assessment of the reliability, variation and correlation between measures reduced the dataset from 22 to 12 measures. With principal components analysis five of the measures within this set appeared to be the major measures and could be regarded as warning signals. Piglets and finishing pigs had CO₂ and NH₃ levels, eye and tail scores as warning signals in common. Number five for piglets was ear score and for finishing pigs animal soiling. Based on the Welfare Quality® Pig Protocol and other references limits were defined for all measures. The number of times a measure exceeded these limits per farm was calculated. This total number for the set of 12 and the set of 5 measures were highly correlated ($r=0.81$ and $r=0.95$ for piglets and finishers respectively). These five measures were sufficient to sorting farms on the risk of climate problems. It can be concluded that shortcomings in indoor climate for pigs can be assessed by a limited set of 12 measures and the first signs can be easily detected by measuring only five measures.