

## Question to EURCAW-Pigs

### Question

For assessing climate and air quality in relation to pig welfare and health, in The Netherlands a protocol and checklist was developed. Can EURCAW-Pigs provide us with that information?

### EURCAW's response

Ir. Herman Vermeer – Wageningen Livestock Research (Netherlands) wrote the initial reply. The EURCAW secretariat did the final editing. For queries: [info.pigs@eurcaw.eu](mailto:info.pigs@eurcaw.eu).

### Answer

In the Dutch protocol to assess climate in pig houses, data collection is described for weaners (3 pens of young weaners (aged 5–7 weeks) and 3 pens of older weaners (aged 8–10 weeks)) and for growing–finishing pigs (2 pens for young (aged 11–15 weeks), 2 pens for middle-aged (aged 16–20 weeks) and 2 pens for old pigs (aged 21–25 weeks)); pen selection was based on the ones with the worst scores for fouling or skin/ear/tail lesions or eye score;

For piglets and growing-finishing pigs the protocol contains 5 indicators measured in 6 pens per category:

- CO<sub>2</sub> and NH<sub>3</sub> concentrations were measured at animal level with the MultiRAE II Lite multigas monitor (RAE Systems, Sunnyvale, CA, USA), from the corridor with a stretched arm in the pen as close to the pig height as possible for two or three pens per room.
- eye score (0 = white and clean; 1 = red and clean; 2 = white and dirty; 3 = red and dirty); the score of the individual pig with the worst score is taken as the pen score
- tail score (0 = healthy; 1 = small lesions/scratches; 2 = bigger lesions/wounds with fresh blood); the score of the individual pig with the worst score is taken as the pen score
- for piglets: ear score (0 = healthy and intact; 1 = black crusts; 2 = fresh, red lesions); the score of the individual pig with the worst score is taken as the pen score
- for growing-finishing pigs: skin fouling (0–20%, 1 = 20–50%, 2 ≥ 50% wet and/or dirty skin; the score of the individual pig with the worst score is taken as the pen score

Each animal based indicator has a threshold: as soon as the score is 1 or more, it counts as 1 point for each pen. For the gas concentrations the threshold is 3000 ppm for CO<sub>2</sub> and 20 ppm for NH<sub>3</sub>.

The next step is to count all the scores of the farm per category. The maximum for 5 indicators in 6 pens is 30 points. In this protocol the number of assessed pens will be doubled to 12 when the sum is above 15 points to exclude a coincidence. Also a single pen score of 3 or more points can be a reason to intensify the inspection. This is how it was proposed in the original report, however the practical application of the NVWA (Dutch Competent Authority) might be different.

### Relevant references

The scientific publication can be found on <https://www.mdpi.com/2076-2615/8/4/44>

The Dutch report with a more extended protocol (in Dutch) can be found on <http://edepot.wur.nl/409283>