

## Assessing dust level in layer barns



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### Introduction

Poultry barns are among the livestock buildings with the highest levels of dust. Dust can be defined as “solid particles formed by mechanical disintegration of a material”. The method to assess aerial dust levels most frequently used by veterinary inspectors is sensorial assessment. It may involve 1) visual assessment of the dust level in the air of the poultry house, 2) the inspectors’ sensation of irritation (assumed to be caused by dust) in their own eyes, throat and lungs and, 3) signs of irritation of the birds’ eyes, throat and lungs, assumed to be caused by dust. However, the method is considered to be of limited validity and reliability by the inspectors themselves as it relies on high levels of subjectivity.

In 2021, the EURCAW Poultry-SFA has tested different methods of dust assessment: a measuring device based on the light scattering principle, dust accumulation on the structures in the building, visibility as a function of airborne particles in the barn, the dust sheet test of the Welfare Quality® Protocol ([2019](#)), a reduced dust sheet test (1h instead of 2-3h) and a black tape test. **The dust sheet test with a duration of 2–3 h was found to be both valid and the most accurate method, this is why it is the method that is presented in this factsheet.**

### Legislation

**Council Directive 98/58/EC of 20 July 1998** concerning the protection of animals kept for farming purposes, Annex, Paragraph 10:

“[...] dust levels must be kept within limits which are not harmful to the animals”

### Method

As described in the Welfare Quality® Protocol (2019), the dust sheet test requires four black A5 or A6 size papers. They should be placed horizontally in four different locations in the barn, out of reach of the birds, but not too close to feeders or other equipment causing dust. The black papers should be placed horizontally (one in each location), when the inspector first enter the barn, and then removed for assessment after 2 to 3 hours.



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Classify the dust level found on the papers, comparing to a clean sheet, as follows:



**Score 0:** No or minimal evidence of dust (sheet has same colour as clean sheet)



**Score 1:** Isolated specks or a thin layer of dust on sheet is detectable (without comparing with a clean sheet, the test sheet still appears black but there is a slight colour difference between the 2 sheets).



**Score 2:** Dust covers the sheet, even without comparing with a clean sheet it is clear that the test sheet is no longer black. i.e. (there is a clear difference in colour between clean and test sheets).