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Ensuring air quality in poultry houses

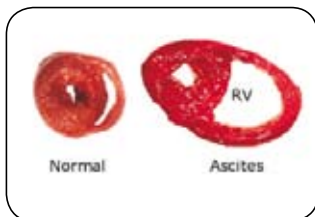
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Air quality is an important parameter for ensuring optimal production conditions in poultry houses.

Poor air quality will create results that are poorer than those which may otherwise have been achieved in case of optimal air quality conditions. Poor air quality may result in diseases and at worst in an increased number of deaths and rejections at slaughterhouses.

Poor air quality may directly or indirectly cause Ascites. Ascites damages lungs and heart and may result in fluid accumulating in the bellies of the animals which is why ascites is also called water belly.



Normal heart vs Ascitic heart

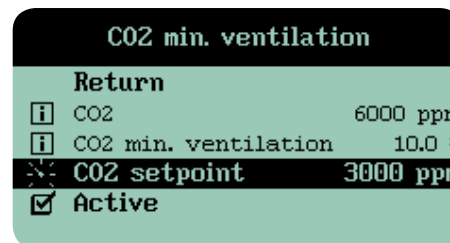
If the air quality is higher than required by production, electricity and heating consumption will be unnecessarily high.

The CO₂ content of the air is normally used as an indicator of air quality. Most manuals and textbooks recommend a maximum level of about 3000-3500 ppm.



DOL 17 CO₂ sensor

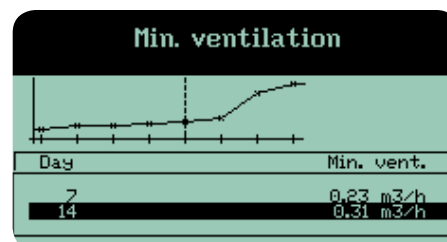
In order to prevent CO₂ levels from exceeding 3000-3500 ppm, CO₂ sensors can be installed in houses. Advanced climate controls are able to control minimum ventilation on the basis of the currently measured CO₂ level.



DOL 339 climate computer display - CO₂ settings

If it is impossible to use a CO₂ sensor, the CO₂ level can be controlled indirectly by means of minimum ventilation.

If the ventilation system can be controlled based on the "real air principle" (m³/h/animal), it is possible to keep the current CO₂ level at a reasonable level compared to the desired level by means of a minimum ventilation curve that controls the climate based on the age/weight of the animals as well as the number of animals in the houses. In practice, this is done by the producer registering the number of stocked animals in the control unit. The control unit then multiplies the number of animals by the output/animal entered in the minimum ventilation curve.



DOL 339 climate computer display - minimum ventilation curve