

# Does relative humidity affect reproducibility of animal research?

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Collaborators on these studies have no affiliation or financial links to SCANBUR A/S

Ongoing studies show interesting preliminary data on rodent welfare and physiology when relative humidity is locally, accurately controlled at 55% compared to when relative humidity is controlled centrally, and thus fluctuating with the variable weather conditions

At the University of Turku data collected in the calendar year 2018 on breeding pairs of **genetically altered mouse strains** showed a **significant reduction in pre-weaning mortality** when relative humidity was controlled at 55% compared to building controlled

A study in a UK mouse facility has shown that tighter control of relative humidity **improved murine breeding performance**. The study compared breeding performance of mice housed at relative humidity controlled at minimum 55% to mice housed at building controlled relative humidity, where relative humidity varied within a wider range and dropped substantially below 55% during the study period of eight months.

Due to customer anecdotes suggesting improved results a study will commence in the UK to investigate the **effect** of relative humidity controlled at 55% on **Embryo Transfer in mice**. This study will commence in November 2018



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In a facility in the UK, **rat breeding pairs** housed under controlled relative humidity of 55% **produced much larger litters** compared to when they were housed under conditions where humidity levels were controlled centrally and fluctuated

In a test study in Austria, **aggression in male mice dropped** when relative humidity was controlled at 55%. Further studies are currently running

A mouse facility in Canada that experiences low humidity levels during the cold winter months had challenges with **scaly skin on the mouse tails**. These health issues **quickly improved**, when the relative humidity was controlled at 55%

In a UK facility when tightly controlling relative humidity at different levels within the regulatory requirements the **amount of water mice drank changed significantly** in response to changes in relative humidity and was less variable compared to mice housed under room controlled relative humidity

A patented technology inside ScanClima air handling units ensures a relative air humidity with an accuracy of  $\pm 3\%$ . In a number of research collaborations we are documenting the impact of the ScanClima air handling unit on reproducibility, breeding and animal welfare.