

HUMIDITY

PARAMETER	EVIDENCE/REFERENCES
50+/-10%	<ul style="list-style-type: none"> • Paper in <i>Lab Animal Magazine</i> – changes in relative humidity in the animal environment have been proven to affect rat metabolism. (participant’s comment) <i>[unable to find paper]</i> • UK <i>HO science and engineering guidelines</i> (participant’s comment) <i>[unable to find guidelines]</i> • Need precise humidity levels during weather changes; our levels are too high in summer (over 60–70%) and struggle to keep a constant level >40% in winter. (participant’s comment)
30–50%	<ul style="list-style-type: none"> • Hygrometer and in-room data logging system to consistently monitor. If below 30%, a call will go out to add more humidity to the entire air handling system; also if too high (>50%) as this causes too much moisture build-up and could lead to mould. (participant’s comment)
30% minimum	<ul style="list-style-type: none"> • Minimum of 30% satisfies our provincial (Ontario) inspections and I have not found this to be a problem for the animals (no nose bleeds, or respiratory illness). I have preferred the lower limit as higher levels reduce the ability for bedding to dry. (participant’s comment)
RODENTS	
45–65%	<ul style="list-style-type: none"> • “The relative humidity in rodent facilities should be kept at 45 to 65%. Excepted from this principle are gerbils, which should be kept at a relative humidity of 35 to 55%.” (reference: Appendix A of the European Convention for the Protection of Vertebrate Animals used for Experimental and Other Scientific Purposes (ETS No. 123)).
RATS	
50–55%	<ul style="list-style-type: none"> • Humidity ranges from 12% to 80% annually. In rats, this creates variance in water consumption, which affects absorption of research drugs, etc. A steady state of 50% humidity is beneficial. (participant’s comment) • We use 50–55% for rats – set according to CCAC guidelines; monitored in room and via digital sensor which transmits information to computer program for tracking and adjustments. (participant’s comment)
MICE	
50–70%	<ul style="list-style-type: none"> • We use 50–70% for mice – set according to CCAC guidelines; monitored in room and via digital sensor which transmits information to computer program for tracking and adjustments. (participant’s comment)
Other considerations	<ul style="list-style-type: none"> • Monitor with electronic devices in room over 3 day periods, every 2 hrs; and monitor animal health (no signs of stress, eating well, good overall health). (participant’s comment) • Rooms should have individual programmable controls for humidity,

	<p>appropriate for species, according to CCAC guidelines. (participant's comment)</p> <ul style="list-style-type: none"> • Depends on cage/rack type. (participant's comment) • Hard limits are not a good metric as they will be determined by a sensor, all sensors will measure slightly different levels. We are moving to a delta for control and this is the delta between supply air and measured IAQ zone air. This helps to eliminate the issue of sensor drift. (participant's comment)
<p>CCAC Facility guidelines, Section 12.3.2 Relative humidity</p> <p>Guideline 91: Relative humidity should be maintained between 40% and 60%, depending on the species, and controlled to $\pm 5\%$.</p> <p>The relative humidity may be controlled at the suite level, rather than on a room-to-room basis. Most animals do well at 40 to 60% relative humidity, but not less than 35% or greater than 70%. The relative humidity should be kept consistent ($\pm 5\%$). In Canada, building humidity may cause moisture problems and damage to the building structure due to condensation on colder external walls in the winter months. Therefore, animal housing facilities must be extremely well insulated and/or all animal holding rooms may be located in the core of the facility, surrounded by a corridor or service areas with one outside wall and lower humidity levels.</p>	