

## Abstract 35:

Enlightened pigs: throwing a light on pig welfare.

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In pig farming the role of light has been largely ignored in the debate on improving animal welfare. Available literature mainly reports the effects of photoperiod (=light period) on production aspects like growth, reproduction, health or production related behaviours such as feeding and resting. The relevance of two other light parameters, light intensity (=brightness) and light spectrum (=colour), are understudied, especially in relation to important welfare indicators such as social and exploratory behaviour and affective states. Light is used to treat affective disorders in humans and given their physiological similarities with pigs, light might be more important for pigs' mood and emotions than previously anticipated. Thus, appropriate barn light settings might positively impact the welfare status of pigs. The aim of this PhD project is to investigate the effect of light intensity and light spectrum on the welfare of growing-finishing pigs. The welfare assessment of pigs will include health, production, behavioural and affective state measurements. In a first experiment, different intensity levels will be tested in a commercial farm with modern light-emitting diode (LED) technologies. Light intensity is expected to affect the rhythmicity of pigs' activity. A second experiment, will investigate the role of visible and invisible light spectra as it might play a role in pigs' affect and the display of abnormal behaviours. In light of the previously gained knowledge, combinations of light intensities and light spectra will be studied in a third experiment to propose new lighting concepts for pig houses contributing to a better pig welfare status.